



**Varazdin Development and Entrepreneurship Agency**  
in cooperation with  
**City of Prague**  
**University North, Croatia**  
**Faculty of Management University of Warsaw, Poland**



# **Economic and Social Development**

20<sup>th</sup> International Scientific Conference on Economic and Social Development



Editors:  
**Li Yongqiang, Anica Hunjet, Ante Roncevic**

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## **Globalization and Challenges of the Modern World**



## THE CURSE OF BIOFUELS AND MALNUTRITION IN AFRICA

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### **ABSTRACT**

*The life expectancy of a person in Japan is about 83 years for men and women, 82 years in France while it is 34 years in Swaziland (a small kingdom in Southern Africa devastated by AIDS and hunger). Thus, each year millions of women in Sub-Saharan Africa give birth to a large number of children who die at birth because of food shortage which automatically generates brain damage and motor impairments. In sub-Saharan African countries, 500 000 mothers die every year during childbirth, most of them by prolonged lack of food during pregnancy. Like undernourishment, malnutrition usually affects the children of underdeveloped countries who live mainly in Sub-Saharan Africa. However, authorities intervene only rarely by setting up some treatments to alleviate the suffering of children. The World Trade Organization, the International Monetary Fund and the World Bank are bodies associated with the United states, who consider the right to food as vital and essential. Behind these organizations, there are large private transcontinental companies controlling several areas of activity such as production, distribution, etc..and, thus, have power over the exercise of the right to food. These companies generally have greater financial resources than those of most countries in which they operate and produce very large gains. The same companies provide transportation, insurance and distribution of food goods, a fact which allows them to control the entire production process and makes of each one of these companies a monopoly in its activity sector to behave consequently against the right to food. For these private transcontinental companies, hunger is a scandalous phenomenon which will not be eliminated unless two conditions are met: the first one is related to a strong industrialization with a maximum capital and most advanced technologies as well as the elimination of family farms and food wastage; the second one is relative to the full liberalization of the market. The latter is sinéquanone to defeat the scourge of hunger since a fully liberalized market will enable a free and adequate food, while this remains impossible as long as natural disasters may arise. It is the WTO, the World Bank and the IMF which determine the nature of the relationship that the powerful world maintains with the southern sphere, while ensuring the interests of the private transcontinental companies. In order to better understand the geoeconomy of malnutrition, we will delve into the origins of underdevelopment in sub-Saharan Africa. Then, we will analyse the geo-economic dimension of hunger in Africa in order to deal with, in a third section, the illusion of biofuel and the threats it poses to poor countries in general and sub-Saharan African countries in particular.*

**Keywords:** *Africa, Biofuel, Malnutrition*

### **1. INTRODUCTION: TO THE ORIGINS OF UNDERDEVELOPMENT**

Over the last forty years at least a dozen of developing countries have experienced phenomenal economic growth. For many of them, especially in Asia, the annual growth rate of gross domestic product is almost 10%. It, therefore, exceeds that of big industrial countries and results in a substantial reduction of poverty. According to some projections, the stars of performance in the sphere of emerging markets, such as Brazil, India and China, should outperform all

industrialized nations in 2050. In contrast, during the same forty years, almost thirty other sub-Saharan countries in Africa largely depending on aid, failed to generate significant economic growth and happened even to regress. Numerous reasons have been advanced to explain the failure of these African countries: geographical, historical, cultural, tribal and institutional. These reasons give undoubtedly a convincing explanation of the poor African performances and yet they do not reveal everything. One of the arguments advanced by the proponents of geographical determinism such as Jared Diamond is that "wealth and success of a country depend on its environment and topography" (Jared 1997, p.102). Some environments are more favorable than others; so, there is a greater likelihood of prosperity for companies which were able to domesticate plants and animals without too much effort. At the minimum, the climate, location, flora, fauna and soil of a country affect the aptitude of a population to obtain foodstuffs that will go to consumption and export, which ultimately has an impact on the economic growth of the country. Diamond notes that "if all societies and cultures have shown roughly the same abilities to take advantage of nature, initially they did not dispose of the same elements" (ibid, p.112). Nevertheless, the African experience shows that the abundance of land and natural resources is not a guarantee of economic success. In the second half of the twentieth century, the dependence on natural resources proved to be a curse rather than a blessing for national development. For example, many African countries found themselves unable to capitalize on the commodity boom in the 1970s and the result was a disaster for their economies. After having wasted much of their natural resources by making questionable investments (when there was no outright theft), countries rich in oil and minerals, such as Angola, Cameroon and the Democratic Republic of Congo, could not show but a catastrophic economic balance for the period. In his article "Geography and growth in Africa", Paul Collier, the Oxford and World Bank economist, adopts a nuanced approach to the issue of natural resources. He ranks African countries into three groups: "those who have little resources but have a coastline; those who have resources and do not have access to sea; those with abundant resources" (Collier, 2006, p9). These three groups provide remarkably different growth profiles. We note, in fact, that countries which are little resourced but are situated near the sea have in their assets higher economic performances than those countries rich in resources. Of course, countries lacking the two elements rank low on the scale. According to Collier, "these factors may cost these countries one percent of growth rate" (ibid, p.10). This finding would be valid in general and not only in Africa. Unfortunately, Collier observes that "the population of Africa is heavily concentrated in countries with scarce resources and without access to the sea" (ibid, p.11).

Assuredly, the environment is important and, of course, in certain African regions the physical conditions are severe, namely climate and soil type, but this does not represent insurmountable difficulties. For example, in Saudi Arabia, the average temperature is often above 40°; Switzerland, in turn, has no access to the sea. These factors did not prevent the two countries to establish themselves at the international level. Historical factors have often been advanced, such as colonialism, to explain the disappointing performance of Africa, the idea being that colonial powers delimited nations, established political structures and shaped bureaucracies fundamentally incompatible with the lifestyle of the indigenous populations. To force ethnic groups who are traditionally rivals or in open conflict to live together under the same flag is not the ideal recipe to form a nation. The so badly designed division of Africa which was made at the Berlin Conference in 1885 would not make things easier. The meeting of fourteen nations (including the United States with Germany, Britain, France and Portugal as main participants) produced a map of the continent scattered with small nations whose borders were arbitrarily drawn, could only make economic self-sufficiency and political autonomy difficult to obtain. There is also, naturally, an insidious and generally implied point of view, according to which the problem of Africa lies even at the level of its population which is different culturally, mentally and physically. There would be in it, buried deep in its psyche, an inability to commit

to the path of development and to improve its condition of existence without guidance and foreign assistance. This is not the first time that we cite cultural norms, customs, religious beliefs, to explain the observed difference in the development of certain peoples compared to others. The German sociologist Max Weber argued that “the protestant work ethics contributed to rapid technological progress and it explained the rise of Great Britain and other European nations” (Weber, 1964, p.209). According to him, there were two large groups of protestants, “the Calvinists who believed in predestination and for whom the acquisition of wealth depends on divine grace, and the Lutherans who believe in work and have a work ethic”(ibid, p.221). One succeeds by the sweat of one’s brow. To resume the ideas of Weber, the issue of the development of Africa will offer two different ways. On the one hand it is estimated that Africans are unable to afford an autonomous development, unable to engage on the path of growth unless they are shown the way or they are pushed to do so. On the other hand, there is the way which would lead to sustainable development but requires the treatment of Africans as adults. The trouble with the dependency model of aid is that it obviously keeps the continent in perpetual childhood. Another reason we advance to account for the economic failures of Africa is the existence of multiple tribes and a very complex ethnolinguistic fabric. Basically, there are more than a thousand tribes distributed in Sub-Saharan Africa, and most of them have a language and customs of their own. Nigeria has 150 million inhabitants and about four hundred tribes. Botswana, with just over one million inhabitants, counts eight major tribal groupings. A nation where the tribes division is strongly marked faces two major risks. The first and most evident one is that ethnic rivalry leads to disorders and conditions that can culminate in a civil war of great magnitude. The tragic example of Biafra in Nigeria (1967-1970) and the ethnically motivated genocide in Rwanda in the 1990s are alive in all memories. Paul Collier estimates that “the more a country is ethnically divided, the higher the likelihood of a civil war is (Collier, 2006, p.13). In fact, the frequency of civil wars in Africa over the last thirty years has been much greater than in Southeast Asia or in any developing region. Now, in terms of ensuring the economic, social and moral decline of a country (and eventually of neighboring countries), nothing can compete with a civil war. In purely financial terms, Collier estimates the cost of a typical civil war four times the country’s annual GDP. In Africa where small nations coexist in close proximity, the negative impact of conflict on neighboring countries can reach half of their own GNP. Even in peace time, ethnic heterogeneity can be an obstacle to growth. According to Collier, “to implement reforms in a small ethnically divided country presents difficulties that would explain why the worst policies persist in Africa longer than anywhere else” (ibid, p.13). These societies are characterized, in fact, by mistrust between different ethnic groups which renders collective action difficult for the common good. This is particularly true when it comes to democratic countries (if only nominally) where the hope of achieving a political consensus between hostile groups separated by ethnic barriers is most reduced. Invariably, there where is a conflict, the dividing line between ethnic groups slows down the implementation of essential measures in order to stimulate economic growth. The turbulent 2008 elections in Kenya are one example: the tension between the outgoing president Mwai Kibaki (a kikuyu) and his opponent Odinga (a Luo) contaminated the election process and the institutions themselves (there was a compromise in the form of a coalition government involving the two ethnic groups). No one can certainly deny that Africa had its large share of tribal disorders. But, it is also true that peaceful coexistence of different tribes was successful in a number of African countries (this is the case of Botswana, Ghana, Zambia, to name just three). Moreover, there is no need to give up looking for a cure to the ills afflicting Africa by hiding behind the excuse of ethnic differences. It is said: born Zulu, remains Zulu. But, the Zulus, like members of any other tribe, also marry outside their ethnic group. They live, work, entertain themselves in cities where the integration functions well. In fact, integration in African cities is more advanced than elsewhere. There are no areas reserved to an ethnic group as one can see in Belfast, London or New York.

In addition, if one hangs on this issue, it is impossible to go any further to formulate the least recommendation: it is a dead end. Another further explanation of African failure is the absence of strong, transparent and credible institutions-public function, police, justice, etc. In "Wealth and Poverty of Nations", David Landes argues that "the ideal model of growth is the one guaranteed by political institutions" (Landes, 1999, p. 97). The mandatory conditions for success are: the guarantee of individual freedoms, property rights, contract rights, the rule of law (which does not necessarily imply democracy), and a government worried about protecting citizens, intolerant towards profiteers whose dimensions remain modest. In "How Britain Made the Modern World", Niall Ferguson sees "in the system of customary law and the British administration model two institutions that played a leading role in development" (Ferguson, 2004, p.107). Ferguson also notes that "the presence of legal and political institutions promotes foreign investment in a country (and protects it against divestment by reducing capital flight) as well as innovation" (ibid, p.111). This implies that there is a rule of law which limits the power of the executive. We can have, then, a transparent system, an independent monetary authority and a normal capital market likely to encourage the presence of more numerous and important companies. Professor Dani Rodrik of Harvard is also categorical on his part: he argues that "the foundation for sustainable growth, these are institutions that provide security of property rights, conflict resolution, maintaining law and order, and know how to balance incentives and social costs and services" (Rodrik 2003, p.138). In his book "In Search of Prosperity", Rodrik cites "China, Botswana and Mauritius as examples of countries which owe largely their success to the presence of institutions which generated incentives for the market, protected property rights of present and future investors, and prevented social and political instability" (ibid, p.140), and much of this success is attributed, in fact, to the probity of its political institutions. On the contrary, Rodrik suggests, in the absence of good institutions, countries like Indonesia and Pakistan have the greatest difficulties in achieving sustainable growth. "Their economy has had intermittent growth spurts, but these proved to be fragile (as in Indonesia after 1997) or unable to bring about significant progress in areas of social life, such as health and education" (ibid, p.142). According to Rodrik's forecasts, institutional changes might reduce by three quarters the income gap between nations whose political system is the best and those where it is the worst. The institutional system of the three branches, executive, legislative and judicial exists in one form or another in most African Countries (this is a legacy of the colonial period), but, setting apart the presidential function, these institutions are without real power and are subject to the whims of leaders. In a strong and stable economic environment, political institutions are the nation's development support, but in a chronically weak framework characterized by the unchallenged domination of corruption and bribing, they often lose all their effectiveness. The failure of Africa to generate significant sustainable growth obviously results from the combination of these factors: geographical, historical, cultural, tribal and institutional. It would certainly be very naive to categorically exclude one: all contribute or have contributed to the history of the continent and its sad economic and social performance. However, in justice, one cannot conclude that Africa is condemned to eternal failure. For if each of these factors constitutes a partial explanation of what happened sometimes in one country and sometimes in another, it should not be forgotten that the vast majority of African nations have one thing in common: their dependence on aid and international institutions.

## **2. GEOGRAPHY OF HUNGER IN AFRICA**

Access to food is the most absolute right of every human being. However, this right remains the most massively violated one in our planet, since according to the estimations of the United Nations Food and Agriculture Organization (FAO), the number of severely undernourished persons rose in 2010 to 925 millions against 1.023 millions in 2009, which means that nearly 1 billion people suffer constantly from hunger.

Food is the vital energy of man. It can be measured by Kilocalories (1 Kilocalorie=1000 calories) which is the unit measuring the power-generating inputs in food. Needs in calories differ depending on age; in fact, the World Health Organization (WHO) fixed 2200 calories a day as the subsistence minimum for an adult to achieve his own strength reproduction.

Severe undernourishment causes acute pain that slowly destroys the body but also the psyche. It means "social marginalization, loss of economic autonomy and automatically unemployment as one sees oneself unable to perform regular work" (Briend 1985, p.72). It inevitably leads to death. In many cases, undernourishment causes diseases named hunger diseases affecting children more often: "noma, kwashiorkor, etc. In addition, it dangerously weakens the immune system of its victims" (ibid, p.73).

To better understand the geo-economy, we should distinguish between two categories: "structural hunger" and "cyclical hunger".

As its name indicates, "structural hunger" means physical and psychic destruction. It is permanent, unspectacular, and biologically reproduced.

As for cyclical hunger, it breeds only when a natural disaster (drought, floods) or war tears the social fabric and ruins the economy.

Who are most vulnerable to hunger?

The three largest categories vulnerable to mass destruction are, according to FAO, the rural poor, the urban poor and the victims of the above mentioned disasters.

The rural poor: "are the people belonging to poor rural communities in developing countries with neither drinking water nor electricity. In these areas, services of public health, education and hygiene are inexistent. This community represents half of the population" (ibid, p.132).

The urban poor: "are people from poor urban communities content with an extremely limited income. The World Bank estimates that 1.2 billion of extremely poor people live on less than \$1.25 a day (ibid, p.133). In fact, the geographic distribution of hunger in the world is extremely uneven since "the underdeveloped countries are the most affected with a high rate in Pacific Asia followed by Sub-Saharan Africa, then Latin America, the Middle East and North Africa and finally developed countries" (Le grand et Tchagneno, 2014, p.78). Thus, demographic trends combined with soaring prices recorded on the rise accentuate the disaster of undernourishment in the world. If the number of people most suffering from this scourge belong to developing countries with a remarkable annual increase (30% in 2010 in Sub-Saharan Africa), developed countries, for their part, are not immune to much of the hunger spectrum with 9 million people seriously and permanently undernourished.

Besides undernourishment, there is another phenomenon called malnutrition that the FAO does not consider as a destructive weapon of the suffering population.

Malnutrition is due to "a permanent and severe impairment of vitamins and minerals essential to the human body; these nutrients are not produced by the body and must necessarily be provided by varied and balanced food of a good quality. It usually affects children between 0 and 5 years" (Agbessi and Damon, 2009, p.209).

Unlike the effects of undernourishment, the malnutrition effects are not visible immediately, which consequently generates high vulnerability to infectious disease and then death.

The United Nations designates malnutrition "Silent hunger" that the author qualifies as "invisible hunger" since we do not see it. If we take for example a child affected by malnutrition: he has a weight and curves that look exactly like the ones of his age while in reality he lacks calories, which may lead to agony, anemia and death.

The FAO does not take into account the harmful effects of malnutrition and does not even recognize them. As a result, several other organizations engaged in statistics at this level, such as the Micronutrient Initiative, a non-profit organization that conducts periodic investigations whose results are published in reports entitled "Deficiencies in vitamins and minerals: overall assessment".

It, therefore, appears that one third of the world population cannot achieve their physical and intellectual potential because of deficiencies in vitamins and minerals. Worldwide, every four minutes, a human being loses his sight because of dietary deficiency.

Malnutrition causes many serious diseases. For example, the lack of vitamin A causes blindness (40 million children suffer from it), the prolonged lack of vitamin B causes beriberi, the absence of vitamin C causes scurvy or rickets, the lack of iodine causes goiter, severe growth disorders, the lack of zinc affects motor and mental faculties (Agbessi-Dos and Damon, 2009, p.122). We should not forget that malnutrition also hits the psychological side of the person.

Like undernourishment, malnutrition usually affects children of underdeveloped countries in Sub-Saharan Africa. However, authorities rarely intervene to set up some treatments to reduce the percentage of children suffering from malnutrition.

Malnutrition affects both the physical and psychological aspect of a person, which therefore engenders constant anxiety, humiliation and depression.

### **3. THE CURSE OF BIOFUELS**

Green gold is required for some years as a magical and profitable complement of oil. Agri trusts which dominate the manufacture and trade of agro fuels argue that the substitution of vegetal energy to its fossil sister would be the ultimate weapon in the fight against climate degradation and irreversible damage it causes on the environment and human beings. Climate degradation is "a worldwide reality since it affects 1 billion people in more than 100 countries" (Libaert and Tguerir, 2008, p.53). In African countries, dry lands are overcrowded with 325 000 people, which directly causes soil degradation. The consequences of soil degradation are particularly severe where millions of people depend entirely on land to survive as farmers or herders and where there is no livelihood.

The destruction of ecosystems and the degradation of agricultural areas are a tragedy for the poor. The UN has about 25 million "ecological refugees" or "environmental migrants" (ibid, p.62), that is to say, people who were forced to leave their homes because of natural disasters. These disasters also lead to conflicts between nomads and farmers for access to resources.

Transcontinental companies producing agro fuel succeeded in convincing most of the public and almost all western governments that energy was the miracle weapon against climate degradation. However, their argument is false because the production of agro fuels requires water and energy knowing that drinking water is becoming increasingly scarce in Sub-Saharan Africa and several diseases are caused by the poor quality of water.

As far as water supplies in the planet are concerned, the production of tens of billions of liters of agro fuel is a real disaster.

Multinational companies of American origin are the manufacturers of biofuel in the world. They are the most powerful in the world and receive governmental aid grants. Barack Obama considers bioethanol and biodiesel program as a cause of national security. The United States is the strongest industrial power and the most dynamic in the world despite a relatively small population (300 million people). The US produces more than 25% of all manufactured industrial goods in one year in the planet. The raw material of this impressive machine is the US oil. The US burns a daily average of 20 million barrels, which is about the quarter of world production, 61% of which is imported: 12 billion barrels a day. The US president is worried about this dependence because most of this imported oil comes from regions of the world where political instability reigns.

To burn millions of tons of food on a planet where every five seconds a child under 6 years is starving. In other words, the tank of a midsize car running on bioethanol contains 50 liters. In order to manufacture these 50 liters, we must destroy 358kg of corn which can serve as food for a year for a Zambian child.

Not only do agro fuels devour each year hundreds of millions of tons of corn wheat and other foods, but they also cause social disasters in countries where transcontinental companies that manufacture them become dominant. The example of Brazil is striking. In Brazil, the biofuel production program has an absolute priority and sugarcane is one of the most cost-effective raw materials for bioethanol production. The Pro-alcohol plan "is the name of the Brazilian program which aims to increase the production of bioethanol. This program is the pride of the government" (Zammit, 2012, p.69). The government of Brazilia wanted to bring planting of sugarcane to 26 millions hectares.

The application of the Brazilian Pro-alcohol plan led to the rapid concentration of Land in the hands of a few indigenous barons and transcontinental companies. This concentration movement obviously works to the detriment of family farms of small and medium sizes. This shift from agriculture to a purely monopolistic capitalist model left on the roadside those who did not have the means to get equipped in machinery, to buy inputs, land... and so to engage in intensive sugar cane cultivation. This has consequently caused the disappearance of 941,111 small and medium-sized farms in Brazil and the expulsion of 5.4 million peasants. These monopolies exacerbate inequalities, cause rural poverty but urban poverty as well (as a result of rural migration) and, thus, Jeopardize the country's food security.

But alongside these provoked inequalities, the Pro-Alcohol program benefits transcontinental large foreign companies named Louis Dreyfus, Bunge, Noble Group, Financial groups belonging to Bill Gates and George Soros as well as China's sovereign wealth funds. This only deepened more with the signing of an agreement allowing China and the State to open from now to 2019 twenty ethanol plants in Reconcavo. In a country like Brazil, where millions of people are demanding the right to food, we witness Land grabbing by transcontinental companies and sovereign funds, which is an additional scandal.

At the Council for Human Rights, in the General Assembly of the UN, the author was against the implementation of this plan. Paolo Vannuci<sup>1</sup> and Lula argued their position by the fact that the cane is not edible. Brazilians burn neither corn nor wheat. This argument is not admissible since the agricultural frontier moves permanently: the cane advances towards the inside of the continental shelf and the livestock migrates towards the west and north. Insofar as Brazil has progressively substituted the cultivation of sugar cane for food crops, we have directly assisted in food prices increase, hence causing food insecurity.

Cutters of the Brazilian sugarcane suffer from practices similar to those of slavery before 1883 despite the difficulty of the work performed. Transcontinental companies prefer to employ migrants who enable them to save social contributions and reduce production costs in a poor working environment (schedules, conditions and infrastructure). Thus, the consequences of this work remain disastrous for the health.

It is, therefore, deduced that monocultivation ruined Brazil, today it is coming back. The curse of the sugar cane falls once again on Brazil!

In Africa: specifically in Angola, the government announces projects assigning 500 000 hectares of land to the agro fuel cultivation. A Portuguese firm for its part plans to grow sunflower, soya and jatropha in Cunene province with the intention to export crops to Europe to be transformed into agro fuel...It produces since 2009 agro diesel on 13000 hectares and is planning to expand existing palm plantations in order to produce agro fuels. In Cameroon, the Cameroonian company of palm groves is partly owned by a French group who announces his intention to increase the production of palm oil. The French group signed in 2000 a lease of sixty years on 58 000 hectares. In the Democratic Republic of Congo, the biggest agro fuel-related projects are announced, in charge of which are two companies: one is a Chinese company which would invest 1 billion dollars in planting 3 hectares of palm, and the other is an Italian company which would plant 70 000 millions. In Ethiopia, 8420 local and foreign investors received licenses to develop sugar cane farms. In Kenya, Japanese, Canadian and

Belgian companies planted and cultivated *Jatropha*. In 2008, the president signed a contract with a transcontinental company aiming at selling one million hectares of arable land for planting oil palm and, therefore, producing bioethanol. The contract was, however, canceled by the successor to the deposed president. Finally, Sierra Leone is one of the poorest countries in the world (according to the human development index published by UNDP in 2014). This country has just emerged from a civil war which lasted eleven years, with 80% of the population living in extreme poverty with a high level of undernourishment. A transcontinental company headquartered in Switzerland has just acquired a concession of 20 000 hectares of fertile land to plant sugar cane and, thus, produce bioethanol for the European market. These projects are jointly financed by the African Bank of development and the European Bank of development, whose ultimate goal is to destroy the African peasant life; this project does only worsen the inhabitants' situation by drowning them more and more in permanent despair.

Agro fuels cause social and climatic disasters, destroy food crops and worsen world hunger in a planet where in every five seconds a child under ten years dies of hunger. To divert food and nourishing land by way of producing fuels is a crime against humanity.

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## THE RELATIONSHIP BETWEEN PROFESSIONALISM AND UNIVERSAL ETHICS OF ENGINEERS

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### ABSTRACT

*Ethics in engineering is not a new issue. It has become an increasing concern in Malaysia. The aims of this study to identify the relationship between professionalism and universal ethics of engineers in Malaysian. This study used quantitative methods to distribute the questionnaire by using random to get data from 40 respondents of engineers from government and private sector. The findings yielded that several variables of professionalism of engineers correlated significantly with universal ethics. This study contributes towards the improvement of Board of Engineers Malaysia (BEM'S) existing policy. Future study should focus on developing a model of Professional Engineers.*

**Keywords:** Relationship, Professionalism, Universal Ethics, Engineers

### 1. INTRODUCTION

An engineer without any ethics when completing their tasks cannot be identified as a professional engineer. Completing tasks ethically is essential to avoid the occurrence of unethical misconducts, involving corruption, abuse of power, fraud, sexual harassment, workplace discrimination, violation of civil properties and other offenses (Zawiah et al., 2016). There have been instances in which buildings and bridges collapsed at different parts of the world due to the failure to follow engineering ethics properly among the engineers. Responding to these incidents, a number of engineering societies in the West have developed ethics for engineering profession. However, these ethics were mainly drawn from their own intellectual capabilities, ignoring the principles of divine religions: Every religion has its own values that govern their practitioner's purpose of life. These religious values have strong influences on the practitioner's culture; hence, they have impacts on people's ethical thought and behaviors (Porter, 2010). Issues related to values and religion have attracted many researchers and they have been explored in various fields and settings (Zawiah et al., 2016; Javed et al, 2016; Mastura et al., 2016; Sabrina & Tanggor, 2016; Abdullahi & Suleiman, 2015; Lee et al, 2013).

However, values and religious influence on professional ethics, especially among Malaysian's engineers has been relatively underexplored in the literature and empirical research. Therefore, this study aimed to identify the relationship between professionalism and universal ethics or values of engineers in Malaysia.

## 2. LITERATURE REVIEW

Studies related to professional engineers and universal ethics or values have been very limited. Generally, the concept of ethics from the Western perspectives are different from the Islamic perspectives (Zawiah, 2016). With respect to the profession of ethics, Effendi (2004) defines profession ethics as a good habit or regulations accepted and obeyed by the employees, subsequently become a norm. According to Ketut Sudarma (2014), there are four principles of profession ethics, namely: (1) the principle of responsibility; (2) the principle of justice; (3) the principle of autonomy and (4) the principle of moral integrity. In the National Integrity Plan (2006), profession ethics is defined as a code, which focuses on something to be done and not to be done by an individual on a specific field. Sedarmayanti (2007) concludes that the profession ethics of employees gives them a spirit to perform their duties so that they can behave professionally with high work ethics to obtain satisfactory work.

A professional worker can be defined as a skillful, experienced, responsible and knowledgeable person based on his or her profession (Mustakim et al., 2014; Zawiah et al., 2016). Specifically, the Board of Engineers Malaysia (BEM) is a professional body which governs engineers in Malaysia and one of its main functions is to determine and regulate the conduct and ethics of the engineering profession. According to BEM, a Professional Engineer is a person registered under subsection 10(2) of the Registration of Engineers (Amendment) Act 2015 (BEM, 2015):10 (2) Subject to this Act, the following persons shall be entitled on application to be registered as Professional Engineers:

- (a) any person –
  - (i) who is registered as a Graduate Engineer and has obtained the practical experience under paragraph (1)(b);
  - (ii) who –
    - (A) has passed a professional assessment examination conducted by the Board;
    - (B) holds a professional qualification which the Board considers to be equivalent to the professional assessment examination conducted by the Board; or
    - (C) is a Corporate Member of the Institution of Engineers (Malaysia); and
  - (iii) who has complied with the requirements as determined by the Board;
- (b) any person who, on the appointed date, was a Corporate Member of the Institution of Engineers (Malaysia) or held a professional qualification which the Board considers to be equivalent thereto;
- (c) any person who satisfies the Board that he was practising or was carrying on business or was employed as a *bona fide* engineer immediately before the appointed date and who applies for registration within twelve months of that date:  
Provided that a person who comes within the scope of subsection 7(3), shall not be entitled to be registered under this paragraph unless he holds a professional qualification recognised by the Board for the purposes of this Act; and
- (d) any person who, on the appointed date, had obtained a qualification which would have entitled him to be registered as a Graduate Engineer by virtue of paragraph (1)(a) and who, after that date, has obtained outside Malaysia a professional qualification which the Board considers to be equivalent to that required for Corporate Membership of the Institution of Engineers (Malaysia), and has passed a professional assessment examination conducted by the Board.

Universal ethics or values are directly related to good character, morals and attitude. The term of universal values, also referred to the ethics, is always compared with the term moral, which comes from ancient Greek and Latin language “mores”, “morality” and “ethos”. These terms consist of many meaningful definitions, such as shelter, field, cage, norm, morals, character, feeling, attitude and the ways of thinking (Bertens, 2003). Lita Permata Sari (2012) also states that normally ethics is related to the individual actions either bad or good and mostly comes from the morale itself. According to Louis (1999), the word “ethics” refers to an entirely a philosophical term contained in the moral concept itself. Both glossaries include value aspects, virtues, principles and practical although in different modes. Further, Herbert Spencer (1978) claims that, “ethics” indicate the aim to produce kindness, such as justice, right to join, right to own property, right to politicize and so on. In the Malaysia National Integrity Plan (2006), “ethics” has become an important word apart from integrity, in which the ethics is specifically defined as the “value collection and morale that become standard for individual behavior, organization and profession. In general, the literature indicates that studies on professional and universal ethics or values are very important in order to become professional engineers. Hence, universal values which include religious faith, worship, and morality are important aspects to the formation of good characteristics and spiritual state of a person.

### **3. METHODOLOGY**

#### **3.1. Research design**

Research design is a framework for data collection and analysis to address the research questions and meet research objectives. It provides reasoned justification for choice of data sources, collection method and data analysis technique (Saunders et al., 2012). For the purpose of this research, a quantitative approach was adopted. Burns and Grove (1993, p.777) defines quantitative research as a formal, objective, systematic process to describe and test relationship and examine the cause and effect interactions among variables. The objective of this research is to identify the relationship between professionalism and universal ethics of engineers in Malaysian. In this context, the investigation focuses on the correlation between professionalism and universal ethics or values. This research addresses one hypothesis, namely: Universal ethics has a positive and significant relationship towards professional of engineer.

#### **3.2. The selection of respondents**

This research adopted a survey method for the data collection. The population of this research was engineers working in the public and private sector in Malaysia. For the purpose of this study, sample of the study was represented by engineers from government and private sectors in Malacca, one of the states in Malaysia. The sample were selected randomly. A total of 50 questionnaires were distributed to the respondents. However, out of 50 questionnaires only 40 were returned.

#### **3.3. Instruments**

The questionnaire was drawn out based on the researcher’s readings, previous studies, professional literature, published and unpublished in the designing of good data collection instruments were considered. The questionnaire was divided into three sections. The first section consists of questions regarding the demographic and characteristics of the respondents. The second section comprises items regarding to the professional engineers, while the third section covers statements related to the universal ethics or values of professional engineers. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used for the questions to indicate the degree of agreement or disagreement with each of a series of statements related to the stimulus objects.

### 3.4. Data Collection and Analysis

Data analysis is a method of analyzing data to answer research questions. In this research, we analysed the data collected using SPSS Ver.22 to identify the relationship between professionalism and universal ethics of engineers in Malaysia. The reliability of the questionnaire was validated based on the value of Cronbach Alpha. Table 1 shows the mean, standard deviation and Cronbach's Alpha of the two variables, which are universal ethics and professionalism of engineer. The computed analyses showed that the mean score for universal ethics was 4.38 with the standard deviation of 0.377, while the mean score for professionalism of engineer was 4.22 with the standard deviation of 0.343. Both variables have high value of Cronbach's Alpha, universal ethics was 0.925 and professionalism of engineer was 0.881, indicating that these variables have strong reliability.

*Table 1: Descriptive of variables*

| Variables                   | No. of items | Mean | S.D.  | Cronbach's Alpha |
|-----------------------------|--------------|------|-------|------------------|
| Universal Ethics            | 21           | 4.38 | 0.377 | 0.925            |
| Professionalism of Engineer | 20           | 4.22 | 0.343 | 0.881            |

## 4. RESULTS AND DISCUSSION

The aim of this research is to investigate the relationship between the universal ethics and professionalism of engineers in Malaysia. A research hypothesis has been formulated and a survey involving 40 engineers in Malaysia has been conducted. The section presents the findings of the survey.

### 4.1 Demographic Profile

The demographic profile of the respondents based on the number and percentage of respondents by gender, age, education, position, field of expertise and experience is summarized in Table 2.

*Table following on the next page*

*Table 2: Demographic Profile of the Respondents*

| Demographics       | Category        | Number (N = 40) | Percentage (%) |
|--------------------|-----------------|-----------------|----------------|
| Gender             | Male            | 25              | 62.5           |
|                    | Female          | 15              | 37.5           |
| Age                | 23 – 29         | 29              | 72.5           |
|                    | 30 – 36         | 8               | 20.0           |
|                    | 37 – 43         | 2               | 5.0            |
|                    | >44             | 1               | 2.5            |
| Education          | Degree          | 37              | 92.5           |
|                    | Master          | 2               | 5.0            |
|                    | PhD             | 1               | 2.5            |
| Position           | Engineer        | 27              | 67.5           |
|                    | Senior Engineer | 4               | 10.0           |
|                    | Exec. Engineer  | 6               | 15.0           |
|                    | Others          | 3               | 7.5            |
| Field of Expertise | Mechanical      | 17              | 42.5           |
|                    | Electrical      | 4               | 10.0           |
|                    | Electronic      | 5               | 12.5           |
|                    | Civil           | 5               | 12.5           |
|                    | Oil & Gas       | 2               | 5.0            |
|                    | Others          | 7               | 17.5           |
| Experience         | 1 – 4           | 31              | 77.5           |
|                    | 5 – 8           | 4               | 10.0           |
|                    | >8              | 5               | 12.5           |

In terms of gender, there were 25 respondents (62.5%) represent male and 15 respondents (37.5%) female. In term of age, most of the respondents aged around 23-29 years old (72.5%) and only 1 respondent aged more than 44 years old (2.5%). For education level, 37 of the respondents had degree level (92.5%), 2 respondents with Master (5%) and 1 respondent with PhD level (2.5%). For the field of expertise, Mechanical engineers were the highest frequency, 17 respondents (42.5%) and only 2 respondents from Oil and Gas engineers. Subsequently, 77.5% respondents had 1-4 years of experience, 10% respondents had 5-8 years of experience while 12.5% were those who spent 8 years and above in engineering profession.

#### **4.2 Universal Ethics**

Twenty (20) items were developed to measure the aspect of universal ethics. The descriptive statistical analysis of the items for universal ethics is shown in Table 3. The highest mean scores is item number 3, “I never received bribes during my service.” (4.80), followed by item number 20, “One should not belittle the ability of others during work.” (4.73). Item number 8,

“I work without feeling tired and bored” has the lowest mean scores (3.88) but still in high level of acceptance. The overall mean scores for universal ethics are 4.38. This indicates that engineers applying universal ethics are relatively high as all the 20 items show high level of mean score.

Table 3: Mean scores for Universal Ethics

| No | Items                                                                                                                | Mean | S.D  | Level |
|----|----------------------------------------------------------------------------------------------------------------------|------|------|-------|
| 1  | I use my time wisely when completing any task.                                                                       | 4.28 | .554 | High  |
| 2  | I use public property in accordance with the prescribed rules.                                                       | 4.28 | .640 | High  |
| 3  | I never received bribes during my service.                                                                           | 4.80 | .405 | High  |
| 4  | I am not showing off in performing my duties.                                                                        | 4.53 | .679 | High  |
| 5  | I did not choose a specific task.                                                                                    | 4.28 | .640 | High  |
| 6  | I perform tasks regardless of time because my goal is to complete a perfect and good task.                           | 4.23 | .698 | High  |
| 7  | I am always responsible for all actions and decisions under my supervision.                                          | 4.43 | .549 | High  |
| 8  | I work without feeling tired and bored.                                                                              | 3.88 | .757 | High  |
| 9  | I am ready to carry out the task entrusted to me.                                                                    | 4.35 | .662 | High  |
| 10 | I did not give up in performing the task and always expect for success.                                              | 4.40 | .545 | High  |
| 11 | I am willing to face challenges and competition in the current changes.                                              | 4.33 | .572 | High  |
| 12 | I always work diligently and enthusiastically.                                                                       | 4.33 | .572 | High  |
| 13 | I am willing to sacrifice time and energy in performing duties in the interests of the nation, religion and country. | 4.13 | .516 | High  |
| 14 | I am always grateful to perform a given task.                                                                        | 4.43 | .549 | High  |
| 15 | I always dressed in clean, neat and tidy to keep the image of engineers.                                             | 4.48 | .599 | High  |
| 16 | I always follow the rules outlined by the Board of Engineers Malaysia.                                               | 4.30 | .853 | High  |
| 17 | I often carry out the tasks entrusted collectively.                                                                  | 4.35 | .483 | High  |
| 18 | I realize that the ideas gathered in a group are more robust.                                                        | 4.58 | .501 | High  |
| 19 | I like to discuss with colleagues about something related to work.                                                   | 4.40 | .591 | High  |
| 20 | One should not belittle the ability of others during work.                                                           | 4.73 | .452 | High  |
| 21 | I am always fair in carrying out duties.                                                                             | 4.53 | .506 | High  |
|    | Overall mean scores for universal ethics                                                                             | 4.22 | .343 | High  |

n = 40

#### 4.3 Professional of Engineer

20 items was also developed to measure the aspect of professionalism of the engineer. The descriptive statistical analysis of this variable is shown in Table 4. As indicated in Table 4, the highest mean scores is item number 8, “I always remember my obligations to the Creator.” (4.75), while item number 10, “I often face communication problems with the customers” has the lowest mean scores (3.23) with medium level of acceptance. The other items yielded high score with the mean score ranged from 3.70 to 4.58. The overall mean scores for professional of engineer are 4.22. It shows that engineers are highly professional in their profession as an engineer.

Table 4: Mean scores for Professional of Engineer

| No | Items                                                                                              | Mean | S.D   | Level  |
|----|----------------------------------------------------------------------------------------------------|------|-------|--------|
| 1  | I am competent in the basic knowledge of engineering.                                              | 4.18 | .636  | High   |
| 2  | I am able to use the basic knowledge in my engineering profession.                                 | 4.20 | .608  | High   |
| 3  | I make sure that my Continuing Professional Development (CPD) is always 50 hours or more per year. | 3.70 | .758  | High   |
| 4  | I emphasize ethic in completing any task given to me.                                              | 4.40 | .591  | High   |
| 5  | I demonstrate professional attitude in every task.                                                 | 4.53 | .506  | High   |
| 6  | I am able to meet customers’ needs.                                                                | 4.23 | .530  | High   |
| 7  | I always understand my responsibility to the community.                                            | 4.40 | .591  | High   |
| 8  | I always remember my obligations to the Creator.                                                   | 4.75 | .494  | High   |
| 9  | I am capable of providing good technical report.                                                   | 4.30 | .516  | High   |
| 10 | I often face communication problem with the customers.                                             | 3.23 | 1.074 | Medium |
| 11 | I am proficient in using Malay language in my daily work.                                          | 4.58 | .501  | High   |
| 12 | I use English language in my work.                                                                 | 4.20 | .723  | High   |
| 13 | I understand the work culture of various ethnics and nationalities.                                | 4.23 | .530  | High   |
| 14 | I am capable to adapt in various working environment.                                              | 4.25 | .588  | High   |
| 15 | I use knowledge to lead and manage organization is my expertise.                                   | 4.28 | .599  | High   |
| 16 | I use experience to lead and manage the organization.                                              | 4.25 | .588  | High   |
| 17 | I am capable to make decision that is rational and effective.                                      | 4.20 | .516  | High   |
| 18 | I am able to find research information from various sources.                                       | 4.23 | .480  | High   |
| 19 | I am able to conduct research using the latest methods and techniques.                             | 4.13 | .648  | High   |
| 20 | I always prioritise innovative research in my work outcome.                                        | 4.15 | .622  | High   |
|    | Overall mean scores for professional of engineer                                                   | 4.22 | .343  | High   |

n = 40

#### 4.4 Correlation between Universal Ethics and Profesionalism

The correlation between universal ethics and professionalism of engineer was also investigated based on the hypothesis, universal ethics has a positive and significant relationship towards professional of engineer. For this purpose, the findings were drawn from Pearson's Correlation Coefficients using SPSS. Table 5 shows the correlation output for the relationship between universal ethics and professional of engineer. By employing Pearson correlation coefficients, the results shows that universal ethics has a positive and significant relationship towards professional of engineer ( $r = 0.709$ ,  $p < 0.01$ ). A p-value of less than 0.01 indicated that there was sufficient statistical evidence to accept Hypothesis H1 that “ ”. Thus, H1 is accepted.



Table 5: Correlation among Variables

|             | Variables                | Universal Ethics | Professional of Engineer |
|-------------|--------------------------|------------------|--------------------------|
| Pearson     | Universal Ethics         | 1                |                          |
| Correlation | Professional of Engineer | 0.709**          | 1                        |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## 5. CONCLUSION

In conclusion, the finding revealed that universal ethics or values correlated significantly with profession of engineers. This study helps in bridging the gaps in the literature on universal ethic or values and ethics for professional engineers. However, due to the small size sample, caution is need when generalize these findings. As we know, nowadays, ethical problems arise most often when there are differences of judgement or expectations about what constitutes the true state of affairs or a proper course of action. The engineer may be faced with contrary opinions from within the firm, from the client, from other firms within the industry, or from government. This study can also contribute towards the improvement of Board of Engineers Malaysia (BEM'S) existing policy. Future study should focus on developing a model of professional engineers.

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## CRISP-DM PROCESS MODEL IN EDUCATIONAL SETTING

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### ABSTRACT

*Data mining techniques are being used in areas of prediction and classification, replacing traditional statistical approaches. Their application spans a wide variety of fields and education is one of them. This paper carries out a comprehensive methodology based on the CRISP DM process for data mining in order to gain insights into academic performance prediction. Paper explores to what extent socio-demographic variables, previous education, motivation and learning style can help in identifying successful students. Based on the decision tree method, profile of the typical successful information technology student is identified. Based on the research results it can be concluded that the academic performance is significantly influenced by previous education.*

**Keywords:** *academic success, data mining, decision tree, process model*

### 1. INTRODUCTION

Data mining has been widely used in a great number of fields. Recently, there has been increasing interest in the use of data mining within educational research. Educational Data Mining is an emerging discipline, concerned with developing methods for exploring the unique types of data that come from educational setting and using those methods to better understand students and the setting which they learn in (Romero and Ventura, 2010). Education is of strategic importance for economic and social development of the knowledge-based society. Previous research of data mining in education has focused on the student success analysis (Baradwaj, 2011; Yadav and Pal, 2012). Analysis of the academic success is a very important area of study in higher education institutions because of the fact that strategic planning of the curriculum means increase or decrease in the volume of teaching materials as well as the modification of the structure of the pedagogical and educational process, depending on the academic achievement of students. Based on the importance of this topic, this paper applies data mining methodology to investigate determinants of student success. The primary aim of this study is to investigate the extent to which the total data about students can be a good basis for predicting students' academic achievement.

### 2. LITERATURE REVIEW

Simeunović and Preradović explore the possibilities of using three models of data mining in predicting student success: logistic regression, neural network and decision tree (Simeunović and Preradović, 2013). The best results are achieved by using neural networks (76.4%), followed by the results obtained by logistic regression (74.8%) and slightly weaker results of predictions were obtained by using a decision tree (71.2%). They noted that in previous studies, which used only general demographic data about students, the model had a higher degree of accuracy. The results of their research pointed out that successful students pay more attention to learning and that grade is important to students.

Zekic-Susac et al. (Zekic-Susac, Frajman-Jakšić and Drvenkar, 2009) have examined the performance of the students prediction model using two data mining methods: neural networks and classification decision tree. Models are created on the basis of demographic data of students and data about their behavior and attitudes towards learning by which it is possible to classify students into one of two categories of performance: category 0 - GPA less than or equal to 3, and category 1 - average higher than 3. Comparison of the neural networks accuracy with decision trees accuracy gave the following results: decision trees have produced significantly more accurate classification (88.36%) than neural networks (66.26%), thus becoming more successful method in predicting the success of students in the observed data set. Significance analysis of the input variables showed that the time spent in learning, presence at the seminars, and the type of materials from which students learn are among the most important predictors of the students' success.

Research conducted by Hijazi and Naqvi (2006) on 300 students from several Pakistani universities analyzed the success of students at the university. A hypothesis: "Student's attitude towards class attendance, time spent on learning after school, the student's family income, the mother's age and mother's education are significantly related to the student's success." was formed. Using simple linear regression analysis, they came to the result that the mother's education and income of the student's family highly correlate with the student's academic success (Hijazi and Naqvi, 2006).

Study of students' success carried out by Khan (Khan, 2005) on 400 students selected from the University of Aligarh in India achieved the following. The main objective of the study was to predict students' success in scientific faculties with regard to various measures of cognition, personality traits and demographic variables. Selection was made on the basis of the cluster sampling technique where a population of interest is divided into groups, or clusters, and these clusters sample are selected for further analysis. Khan found that female students with higher socioeconomic status have a relatively greater academic success, while male students with lower socioeconomic status have a relatively greater academic success in general. Based on the previous research results this paper seeks to apply decision tree methodology in students' success prediction.

### **3. RESEARCH DESCRIPTION**

The data mining process must be reliable and repeatable by people with little data mining background. With this aim several standards have been developed: KDD (Fayyad, Piatetsky-Shapiro and Smyth, 1996), SEMMA (Olson and Delen, 2008), CRISP DM (Wirth and Hipp, 2000). The latter is the most frequently used (Azevedo and Santos, 2008), and it is applied in the research presented in this paper. CRISP DM stands for CROSS-Industry Standard Process for Data Mining (Wirth and Hipp, 2000) and consists of six steps presented in Figure 1.

*Figure following on the next page*

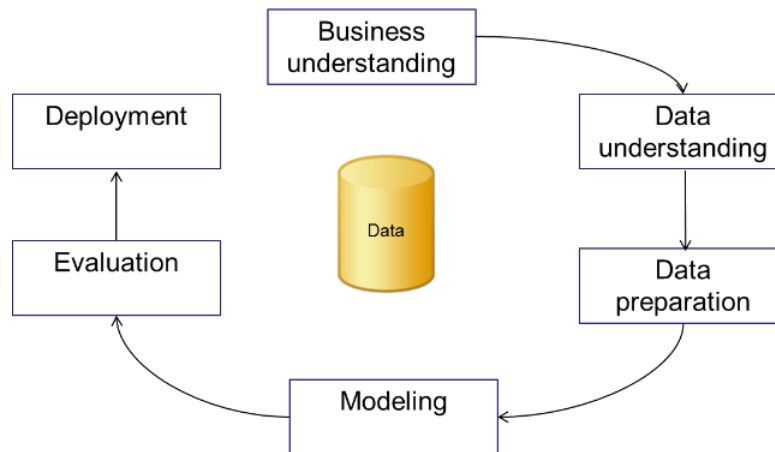


Figure 1: CRISP DM standard (Wirth and Hipp, 2000)

- First step focuses on understanding the process objective, then converting this knowledge into a data mining problem definition and a preliminary plan designed to achieve the objectives (Wirth and Hipp, 2000.). There are three main tasks of this step: define domain and data mining objectives and success criteria.
- Second step, data understanding, involves exploring the data, verifying the data quality and finding outliers (Azevedo and Santos, 2008). Data understanding starts with an initial data collection and proceeds with activities in order to get familiar with the data, to identify data quality problems, to discover first insights into the data or to detect interesting subsets to form hypotheses for hidden information.
- Data preparation takes away majority of the process time, from 70% to 90%. It covers all activities required to prepare data set from the initial raw data. Data preparation tasks include table, record and feature selection as well as transformation and cleaning of data for modeling tools.
- Modeling phase consists of building and assessing the models. Prior, modeling technique should be selected. Various modeling techniques are selected and applied and their parameters are calibrated to optimal values (Wirth and Hipp, 2000).
- Evaluation part answers the question how well model performs on test data and gives interpretation of the model.
- Deployment step determines how results need to be utilized and who needs to use them (Azevedo and Santos, 2008).

### 3.1. Domain understanding

In the initial phase the understanding of the research objectives is put into focus. This study aims to identify academic success factors among students studying at the Information and Business Systems programme. This study also examines how data mining approach, decision trees, assists in providing valuable information for decision making in educational setting.

### 3.2. Data understanding and data preparation

The data understanding phase started with an initial data collection. The survey was conducted among students of University of Zagreb, Faculty of Organization and Informatics with the aim to examine students' success at the university and to find relation of students' characteristics and academic performance. The survey consisted of 36 multiple choice questions with a focus on testing the commitment of students during the entire learning process at the university (attending lectures, seminars, independent work or group work, etc.), and on the learning mode (the preferred styles of learning, a way of mastering teaching units, the material used for learning, etc.). Attribute selection was performed and 15 most important variables were selected from the initial data set. Relief technique for variable selection was applied (Kira and Rendell, 1992). Selected variables are the following: Gender, High school GPA, Year of enrolment at the Faculty, Lecture attendance, Seminar attendance, Preparation for classes, Preparation for classes by using, Learning materials, In-class activity, Admission exam score, I found useful teamwork, I love to work alone, Learning style, Persistence in learning, and Grade point average.

In order to understand and explore data, descriptive statistics was performed and distributions for each variable have been made.

Table 1 depicts students by their high school GPA. As the table suggests, 78% of students in high school had a grade point average greater than 4, while only 1% had GPA lower than 3.

*Table 1: Distributions of students by high school GPA*

| Grade point average (GPA) | Distribution |
|---------------------------|--------------|
| 2.5 - 3                   | 1%           |
| 3 - 3.5                   | 4%           |
| 3.5 - 4                   | 17%          |
| 4 - 4.5                   | 35%          |
| 4.5 - 5                   | 43%          |
| <b>SUM</b>                | <b>100 %</b> |

Among the first 10% of the ranking list at admission exam, there were 19% of students and 13% of students within the last 30% of the list. Most of the respondents (68%) was taken in the middle of the table at the admission exam (Table 2).

*Table 2: Distributions of students by admission exam score*

| Admission exam score             | Distribution |
|----------------------------------|--------------|
| Last 30%                         | 13%          |
| After last 30%, but in first 70% | 35%          |
| After 10%, but in first 30%      | 33%          |
| First 10%                        | 19%          |
| <b>SUM</b>                       | <b>100%</b>  |

Students current GPA at the University has also been examined. Majority of the respondents (52%) have GPA between 3 and 3.5, while the best results (GPA between 4.5 and 5) have only 2% of respondents (Figure 2).

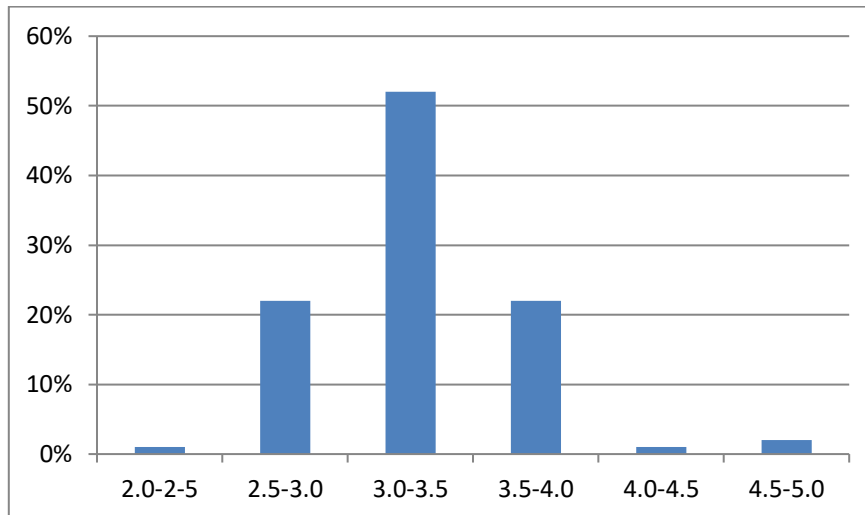


Figure 2: Distribution of students by current GPA

Students' attitude towards studying, their motivation for learning and responsibility in carrying out duties at the university has also been examined.

Attending classes is one of the motivation indicators. Figure 3 shows that about half of the students attended almost all seminars (45% of them) and less than third of the students attended all lectures (26% of them).

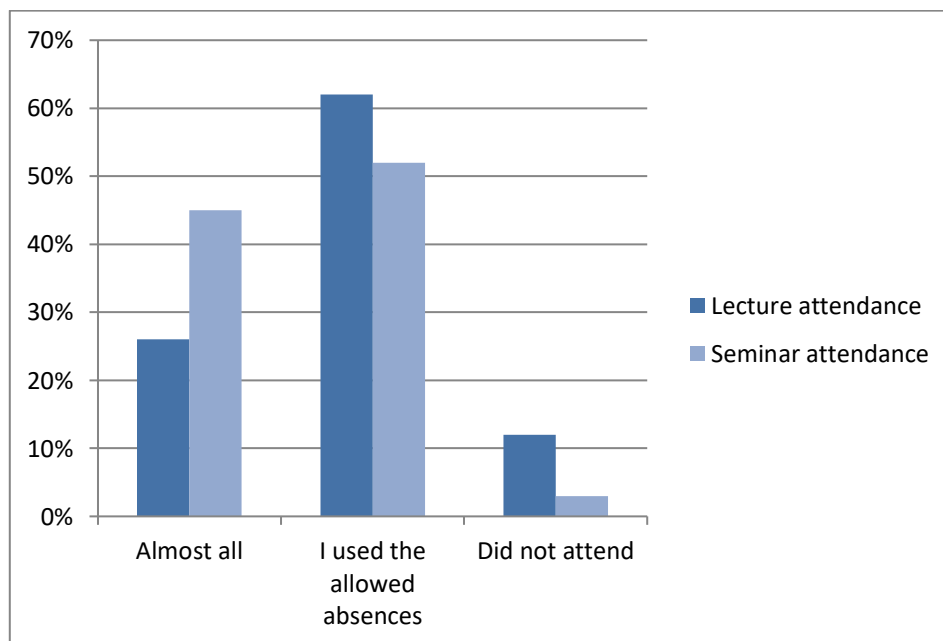


Figure 3: Distribution of students by class attendance

In the addition, students' motivation to overcome course content has been examined. Only 15% of students prepared for the classes and were active at the class (Table 3).

*Table 3: Distributions of students by in-class activity*

| <b>I am active on class</b> | <b>Distribution</b> |
|-----------------------------|---------------------|
| Strongly disagree           | 7%                  |
| Disagree                    | 29%                 |
| Neither agree or disagree   | 49%                 |
| Agree                       | 11%                 |
| Strongly agree              | 4%                  |
| <b>SUM</b>                  | <b>100%</b>         |

Most of the students in the study show resistance to overcome severe teaching content (Table 4). 85% of them invest extra effort in order to independently learn and understand what they read

*Table 4: Distributions of students by persistence in learning*

| <b>I am persistent in learning</b> | <b>Distribution</b> |
|------------------------------------|---------------------|
| Strongly disagree                  | 2%                  |
| Disagree                           | 3%                  |
| Neither agree or disagree          | 10%                 |
| Agree                              | 58%                 |
| Strongly agree                     | 27%                 |
| <b>SUM</b>                         | <b>100%</b>         |

Most of the research participants like to work both alone and in the team.

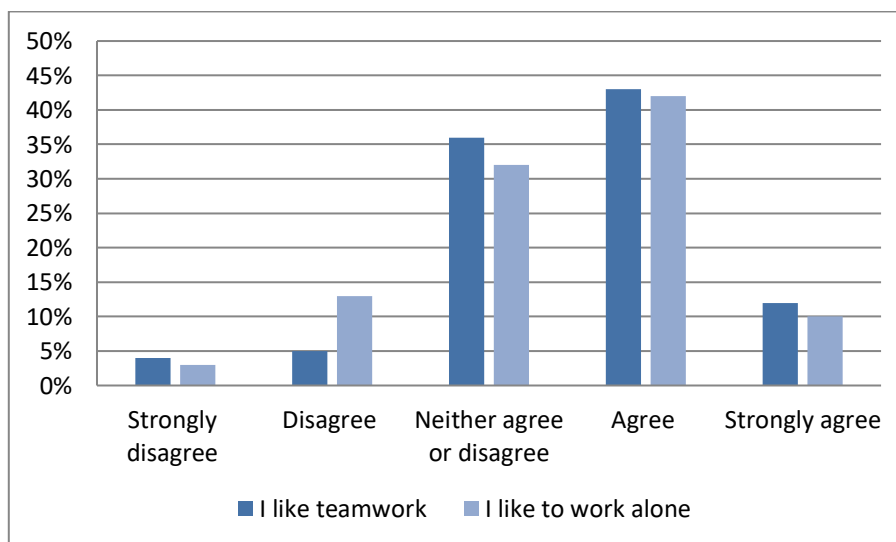


*Figure 4: Distribution of students by learning mode*



29% of students prefer legislature's learning style, and like to explore and create their own way of learning. Most students (44%) combine different learning styles.

*Table 5: Distributions of students by learning style*

| Learning style                                           | Distribution |
|----------------------------------------------------------|--------------|
| I like to analyze existing rules (LS1)                   | 7%           |
| I follow rules and learn according to instructions (LS2) | 20%          |
| I like to explore and learn on my own way (LS3)          | 29%          |
| Combination of three styles (LS4)                        | 44%          |
| <b>SUM</b>                                               | <b>100%</b>  |

Table 6 suggests that for most of the respondents (59%), used literature depends on the course. 15% of students have used their own notes during learning.

*Table 6: Distributions of students by class preparation*

| Preparation for classes by using:        | Distribution |
|------------------------------------------|--------------|
| Scripts from other students (M1)         | 14%          |
| My own scripts (M2)                      | 15%          |
| Suggested literature from professor (M3) | 12%          |
| Depending on the course (M4)             | 59%          |
| <b>SUM</b>                               | <b>100%</b>  |

### 3.3. Modeling

In the modeling phase, decision tree approach has been applied. Decision tree is classification method consisting of decision nodes, connected by branches (Rokach and Maimon, 2008). Attributes are tested at the decision nodes, with each possible outcome resulting in a branch (Larose and Larose, 2015). Decision tree algorithms represent supervised learning, and as such require reclassified target attribute (Larose and Larose, 2015). In the model used in this research, students GPA is the target attribute. The rest of the attributes are predictor attributes. By applying options split and prune the optimum depth of the tree is achieved. At the same time parameters RSquare (confidence level) and RMSE (the level of error) are monitored in order to obtain a more reliable model, and it must be ensured that the model of the tree is not too complicated. If the resulting tree is too complicated, it loses its primary purpose: simple rules of the model. Splitting stops when the optimum accuracy is reached. Model obtained in this research has *RSquare* of 0,52, and *RMSE* of 0,26. Decision tree model is translated into rules presented in Table 7.

*Table following on the next page*

Table 7: Rules extracted by decision tree

| Rule                                                                                                                                                                                                                                                                                                                       | GPA         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>IF</b> High school GPA < 3.5<br><b>AND</b> Admission exam score = [Last 30% OR After last 30%, but in first 70%]<br><b>AND</b> Persistence in learning <5                                                                                                                                                               | <b>2,1</b>  |
| <b>IF</b> High school GPA = 4<br><b>AND</b> Admission exam score = [Last 30% OR After last 30%, but in first 70%]<br><b>AND</b> Persistence in learning <5<br><b>AND</b> Seminar attendance =[I used the allowed absences]                                                                                                 | <b>2,25</b> |
| <b>IF</b> High school GPA <4<br><b>AND</b> Admission exam score = [Last 30% OR After last 30%, but in first 70%]<br><b>AND</b> Persistence in learning <5<br><b>AND</b> Seminar attendance =[Did not attend]                                                                                                               | <b>2,86</b> |
| <b>IF</b> High school GPA <4<br><b>AND</b> Admission exam score = [Last 30% OR After last 30%, but in first 70%]<br><b>AND</b> Persistence in learning =5                                                                                                                                                                  | <b>2,91</b> |
| <b>IF</b> High school GPA <4<br><b>AND</b> Admission exam score = [Last 30% OR After last 30%, but in first 70% OR After 10%, but in first 30%]                                                                                                                                                                            | <b>3,04</b> |
| <b>IF</b> High school GPA =4.2<br><b>AND</b> Admission exam score = [Last 30%]                                                                                                                                                                                                                                             | <b>2,4</b>  |
| <b>IF</b> High school GPA =4.2<br><b>AND</b> Admission exam score =[ After last 30%, but in first 70%]<br><b>AND</b> Lecture attendance = [I used the allowed absences]<br><b>AND</b> Learning style =[LS1 OR LS2 OR LS3]<br><b>AND</b> Preparation for classes = [M1 or M2]                                               | <b>3</b>    |
| <b>IF</b> High school GPA =4.2<br><b>AND</b> Admission exam score = [After last 30%, but in first 70% OR After 10%, but in first 30% OR First 10%]<br><b>AND</b> Lecture attendance =[I used the allowed absences]<br><b>AND</b> Learning style =[LS1 OR LS2 OR LS3]<br><b>AND</b> Preparation for classes by using = [M4] | <b>3,4</b>  |
| <b>IF</b> High school GPA =5<br><b>AND</b> Admission exam score = [After last 30%, but in first 70% OR After 10%, but in first 30% OR First 10%]<br><b>AND</b> Lecture attendance =[I used the allowed absences]<br><b>AND</b> Learning style =[LS4]                                                                       | <b>3,5</b>  |
| <b>IF</b> High school GPA =5<br><b>AND</b> Admission exam score = [After last 30%, but in first 70% OR After 10%, but in first 30% OR First 10%]<br><b>AND</b> Lecture attendance =[Almost all]                                                                                                                            | <b>3,67</b> |
| <b>IF</b> High school GPA =5<br><b>AND</b> Admission exam score = [After last 30%, but in first 70%]<br><b>AND</b> Lecture attendance= [Did not attend]                                                                                                                                                                    | <b>3,5</b>  |
| <b>IF</b> High school GPA =5<br><b>AND</b> Admission exam score = [After last 30%, but in first 70% OR After 10%, but in first 30% ]<br><b>AND</b> Lecture attendance = [Did not attend]                                                                                                                                   | <b>4,8</b>  |

From the above rules a conclusions about the characteristics of students with regard to the success achieved at the university can be made. Students with the lowest average are those students whose grade point average in high school was less than 4.0, who on the entrance exam list were not in the top 30 % of the students and who showed the slightest resistance to cope with heavier learning content. On the other hand students with the best average at the faculty are students with the excellent high school GPA and students with good results on the admission exam.

### 3.4. Evaluation and deployment

In the last phase of the CRISP DM methodology model is evaluated as reliable and accurate. Sensitivity analysis of the model was performed in order to gain insight into most important predictors of GPA.

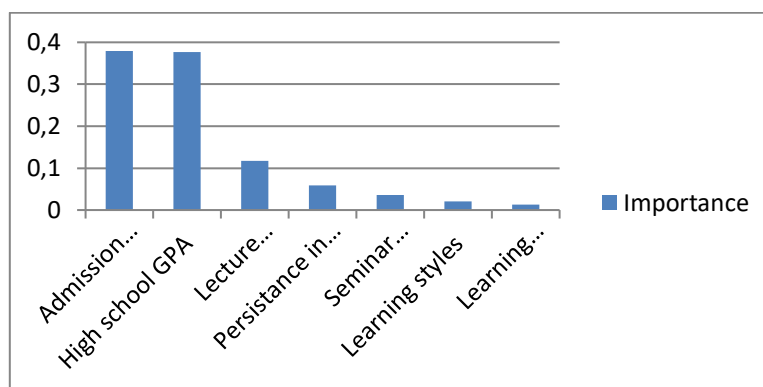


Figure 5: Variable importance in decision tree model

Figure 5 shows the impact of the individual input variables on the output. In the model of decision tree variable *Admission exam score* has the greatest influence on output, followed by a variable *GPA in high school*. Decision tree method assessed that the most important variables for success at the academic level are the ones referring to good educational background from high school.

## 4. CONCLUSION

Model of academic achievement prediction emphasizes the importance of variable *Admission exam score* which points out the fact that education which students have acquired in high school is an important factor for their success in college. This is confirmed by the fact that the decision tree also highlights variable *Grade point average in high school*. Decision tree model further points out variable *Lecture attendance* and *Persistence in learning*. Therefore, it is indicative that perseverance, as in all aspects of life, as well as coping with the teaching materials is an important factor of success. Research results are important from students and institutions point of view because they draw attention to the most important determinants of successful students. However, presented research has several limitations. First limitation refers to the number of participants of the study; in the future, a larger number of students should be involved in the research. The survey was conducted on students of information technology studies so the conclusions made cannot be applied to the general student population. Also, curriculum is subject to change, thus data is collected in the survey-specific generation of students. For these reasons it is difficult to generalize these conclusions as they apply to the specific environment. To avoid such limitations, it would be necessary to conduct a longitudinal study with a larger sample of subjects over several years in order to obtain representative results that would be generally valid for all students.

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## THE CONGRUENCE OF CELEBRITIES AND NON-PROFIT ORGANISATIONS IN SLOVAKIA

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### ABSTRACT

*Celebrity endorsers can help increase awareness, recruit new supporters and raise additional funds of non-profit organisations. Additionally, they can help change social behaviour of adults or adolescents. The aim of presented paper is to evaluate conative aspects of communication in relation to social responsible behaviour of celebrities within the scope of content analysis. In the research we are applying content analysis in order to investigate congruence and incongruence of information obtained from Facebook posts of 37 celebrities with the emphasis on the detection of conative content in examined communication and previous research.*

**Keywords:** *Adolescents, Celebrities, Facebook, Non-profit organisation, Slovakia Social Network, Social responsibility*

### 1. INTRODUCTION

Celebrities have been endorsing products since the late nineteenth century (Erdogan, 1999, p. 292). In the USA celebrity endorsers increased to approximately 25 percent of all ads in 1997 (Stephens, Rice, 1998; referenced by Hsu, McDonald, 2002, p. 19). In Japan roughly 70 percent of commercials use celebrity for endorsing products (Kilburn, 1998; referenced by Hsu, McDonald, 2002, p. 19). Even in India about 60 percent of advertisement expenditure consists of celebrity endorsements (Saxena, 2008; referenced by Varsha, Subhadip, Aarzo, Mari, 2011, p. 171). Reason for using celebrities is that celebrity endorsers are more efficient than non-celebrity endorsers to generate outcome to increase attention, image polishing, attitudes towards advertising and endorsed brand, intentions to purchase, and in fact actual sales. On the other hand, companies risk that, celebrity overshadow the brand, evoke public controversy, change image of the brand because of overexposure or lost public recognition. In addition, using celebrity endorsers is expensive and companies have limited control over the celebrity persona and if celebrities alter their image, it can spell failure for a campaign (Erdogan, 1999, pp. 293-296). However, celebrities may have a significant impact on the perceived target market for a product (Tantisenepong, Gorton, White, 2012, p. 57). The globally recognised celebrities may improve market entry due to cultural and language barriers (Erdogan, 1999, p. 296). According to social network study, public figures are the most followed by users, but at the same time celebrities are the most mentioned by users and the local opinion leaders are the most influential (Cha, Haddadi, Benevenuto, Gummadi, 2010, p. 13). Because of localization of leaders, we should suggest that our research study should focus on local celebrities.

### 2. CELEBRITY THEORIES FOR MARKETING PURPOSES

Main theories of celebrity endorsers include source credibility model, source attractiveness model, match-up hypothesis, the meaning transfer model (Erdogan, 1999, p. 297; Varsha, Subhadip, Aarzo, Mari, 2011, p. 171) and newer studies include likability hypothesis (Fleck, Korchia, Le Roy, 2012, p. 651; Tantisenepong, Gorton, White, 2012, p. 57).

The **source credibility model** supposes that the effectiveness of a message depends on perceived level of expertise and trustworthiness in an endorser. Message from the credible source can influence and change beliefs, opinions, attitudes and behaviour (Erdogan, 1999, p. 297).

Credibility and trust to celebrity is not decreased even by fact, that celebrities obtain money for their promotion services (Freiden, 1984; referenced by Silvera, Austad, 2004, p. 1510), but if celebrities endorse several products, they are viewed as less credible endorsers than those who endorse only a single product (Tripp, 1994; referenced by Silvera, Austad, 2004, p. 1510).

The **source attractiveness model** is defined by choosing celebrity endorsers because of their attractiveness to achieve synergic effect. Consumers tend to form positive stereotypes about attractive celebrities. This is the reason for changing beliefs (Baker and Churchill 1977; Chaiken 1979; Debevec and Keman 1984; referenced by Erdogan, 1999, p. 300) and also for purchase intentions (Friedman et al. 1976; Petroschius and Crocker 1989; Petty and Cacioppo 1980; referenced by Erdogan, 1999, p. 300). It is known, that attractive celebrities are more effective endorsers for beauty products (Till, Busler, 2000; referenced by Tantisenepong, Gorton, White, 2012, p. 59) and are the best to be able to recall them (Chan, Ng and Luk, 2013, p. 167).

The product **match-up hypothesis** includes congruence between brand or product and celebrity message. High product congruence leads to believability of celebrity and also product (Levy 1959; Kamins and Gupta 1994; Kotler 1997; referenced by Erdogan, 1999, p. 302). As we know congruence is important also on the level of consumer's perception of a celebrity's personality characteristics and the consumer's self-concept (Ericksen, 1997; Graeff, 1996; Sirgy, 1982, 1985; referenced by Choi, Rifon, 2012, p. 639). It is interesting that whether the celebrity is a brand user is considered to be unimportant (Erdogan, Baker, Tagg, 2001, p. 43).

The **meaning transfer models** present symbolism of celebrity meanings to the endorsement process. It is about origin of their fame, transformation some of the meanings of the celebrity to the product and transformation some of the meanings of the product to the consumer (McCracken, 1989; referenced by Tantisenepong, Gorton, White, 2012, p. 59). Consumers can learn about the association between an endorser and the product through repeated exposure, but celebrity endorsers are not just linked to promoted products but also with many other things and so, linkage can be weak in the case of celebrity endorsers (Erdogan, 1999, p. 293).

The **likability hypothesis** is based on affective and cognitive theories and it shows that celebrity likability is as important as it is with the other factors of celebrity. Likability celebrity has an impact on the predisposition toward the ad, which influences brand beliefs and purchase intention (Fleck, Korchia, Le Roy, 2012, p. 651). This is ignored in existing source models of celebrity endorsement (Tantisenepong, Gorton, White, 2012, p. 57).

### 3. RELATIONSHIPS BETWEEN CELEBRITIES AND ADOLESCENTS

Young people acquire skills, knowledge and attitudes from socialisation agents. The most influential socialisation agents are role models (Byrne, 2003; Chan, 2008; referenced by Dix, Phau, Pougnet, 2010, p. 38). Vicarious role models include favourite entertainers and athletes. They influence adolescents' consumption intentions and behaviour (Martin, Bush, 2000; referenced by Chan, Ng and Luk, 2013). It is showed that role model endorsers have a positive influence on young adults' product switching behaviour, complaint behaviour, positive word-of-mouth behaviour and brand loyalty (Dix, Phau, Pougnet, 2010, p. 36). It is beneficial to advertising message strategy and also to the attitudes because celebrities are respected by and are highly identifiable with young people (Atkin, Block, 1983; Wolburg, Pokrywczynski, 2001; referenced by Dix, Phau, Pougnet, 2010, p. 37). Human celebrities have a favourable impact on the attitude of teenagers towards brand and advertisement of food and non-food low-involvement products and are more effective than fictional celebrities (Varsha, Subhadip, Aarzoo, Mari, 2011, p. 171). Image of recallable and potentially successful celebrity endorsers for the younger part of generation Y is trustworthy (even frankly), unique, success, relax and daring. It is not important, whether celebrity is psychically attractive, favourite or expert (Mikuláš, Světlík, 2016, p. 102).

Negative connotation with celebrities and adolescents are connected with evidence that an attractive celebrity causes a decrease in self-esteem. On the other side, unattractive celebrity causes self-esteem enhancement (Sääksjärvi, Hellén, Balabanis, 2016, p. 427). Negative behaviour of celebrities in the prism of socialization can influence negative behaviour of adolescents, who imitate same behaviour of celebrities.

#### **4. CELEBRITIES AND SOCIAL RESPONSIBLE BEHAVIOR**

In the light of celebrity influence of adolescents, we should focus on social responsible behaviour of celebrities, which can be imitated by adolescents (Fandelová, Kačániová, Štrbová, 2016, p. 10). Global celebrities become visible agents of the development industry (Wilkins, 2015, p. 164), but celebrities frequently jump theme from one burning issue to the other (Harris, 2003; referenced by Kelly, Morgan, Coule, 2014, p. 60). The top three fields of engaged organisations are children and youth, medical research and health (Kelly, Morgan, Coule, 2014, p. 66). According to Twitter study, celebrities, as the most mentioned users, they are in the centre of public attention and celebrity gossip is a popular activity among Twitter users (Cha, Haddadi, Benevenuto, Gummadi, 2010, p. 13). It is obvious that media consumers are more likely to know about celebrity gossip than critical global or society issues (Wilkins, 2015, p. 165). According the study of 208 celebrity volunteers, the average number of currently supported charities by celebrities is 6,13 (Kelly, Morgan, Coule, 2014, p. 66). It is multiple support and we already know, that it decreases credibility of celebrity (Tripp, 1994; referenced by Silvera, Austad, 2004, p. 1510). On the other site, use of multiple celebrities is useful to cover the whole target audience and can reduce audience boredom (Erdogan, Baker, Tagg, 2001, p. 13). Motivations of celebrities are from altruistic tendencies (simplistic, expedient) to egoistic (fun, rewarding) at the other and they choose endorsed organisation by security and trust (Kelly, Morgan, Coule, 2014, p.57).

On the other hand third sector organisations implement celebrities for their effective communication and fundraising strategies (Kelly, Morgan, Coule, 2014, p. 57). Celebrity endorsers can help increase awareness, recruit new supporters and raise additional funds (Samman, 2009; referenced by Kelly, Morgan, Coule, 2014, p. 60). Fit between the celebrity and charitable organisation encourages positive altruistic attributions in terms of perceptions of celebrity social responsibility (Ilicic, Baxter, 2014, p. 200). A celebrity - charity alliances are based on reciprocal relationship because it affects the charitable brand and also celebrity (Seno, Lukas, 2007; referenced by Ilicic, Baxter, 2014, p. 201). Of course, celanthropists are even criticised for common ignorance of celebrity about the theme of development industry (Ilicic, Baxter, 2014, p. 202), but functional fit between celebrity and charity can reduce the scepticism (Ilicic, Baxter, 2014, p. 205).

#### **5. RESEARCH CHARACTERISTICS**

In our research we set three main concepts as celebrity, adolescents and social responsible behaviour in order to study the congruence of these concepts. Mentioned celebrities act social responsible through non-profit organizations, in which they borrowed their faces. The objective of these organizations is various and their communication models differ one by one. Nonprofit organizations use non-profit marketing (Džupina, Džupinová, 2016, p. 15). Organizations and also celebrities often use social network Facebook for communication with the targeted audience and fans. Social network Facebook is commonly used by adolescents and because of gathering data from this network, we can cover concept of them. The objective of our research was to determine a congruence / incongruence of celebrity and non-profit organizations in Slovakia. We focused on Slovakia celebrities because of local opinion leaders are mostly influential (Cha, Haddadi, Benevenuto, Gummadi, 2010, p. 13).

We were interested primarily in following **research questions**:

1. Are Slovakian celebrities congruent / incongruent with their non-profit organizations on their Facebook profiles?
2. How Slovakian celebrities act social responsible on their Facebook profiles?
3. Which category of celebrities is congruent / incongruent with their non-profit organizations on their Facebook profiles?
4. What is the level of the congruence celebrity with their non-profit organizations through social network Facebook?

### **5.1. Research sample**

Analyzed dataset consist of Facebook profile pages or fun pages of Slovakian celebrities. These celebrities was chosen by content analysis of their social activities and participation in non-profit organizations from January to July 2015 as a partial output of VEGA research project Celebrity in social advertising and celebrity preferences of adolescents. Main purpose of content analyses was to find celebrities, who are active on the field of social responsibility through, their participation in non-profit organisations. It was identified 49 celebrities - athletes, moderators, dancers, singers, actors, writers, entrepreneurs, politicians and other public figures (namely Adela Banášová, Jaro Bekr, Katarína Brychtová, Dominika Cibulková, Matej "Sajfa" Cifra, Peter Cmorík, Michaela Čobejová, Andrea Coddington, Kristína Farkašová, Zuzana Fialová, Judita Hansman, Tomáš Juríček, Michal Hvorecký, Zdeno Chára, Jana Kirchner, Andrej Kiska, Braňo Kostka, Rasťo Kulich, Lukáš Latinák, Richard Lintner, Peter Lipa, Marek Majeský, Majk Spirit (Michal Dušička), Iveta Malachovská, Michal Martikán, Michal Meško, Dominika Mirgová, Patrik "Rytmus" Vrbovský, Petra Polnišová, Roman Pomajbo, Zlatica Puškárová, Iveta Radičová, Richard Raši, Martin "Pyco" Rausch, Dara Rolins, Robert Roth, Sivilia Šarköziová, Eva Siracká, Róbert Slovák, Alexandra Šmidáková, Adriana Špronglová, Anton Srholec, Eva "Evita" Urbaníková, Emília Vášaryová, Petra Vlhová, Anton Zajac, Adam Žampa, Jana Žitňanská, Milan Ftáčnik). They were active on the field of various non-profit organisations. Analyzed dataset for our purposes was excluded of politicians, because it is hard to say, if participation of politicians in non-profit organization is social responsible or political decision. While use of celebrities is form of communication strategy (Atkin, Block, 1983; Wolburg, Pokrywczynski, 2001; referenced by Dix, Phau, Pougnet, 2010, p. 37), political celebrities are even more products in meaning of voting preference. Difference is in perception of role in marketing mix. Identification with opinion of politicians can lead into voting preferences, while identification with opinion of other celebrities can be caused by altruistic or egoistic tendencies of celebrity (Kelly, Morgan, Coule, 2014, p.57). Some of the celebrities were not present on social network Facebook or their authorities were not verified. It is not sure, if every profile is managed by celebrity, its manager or fans. If posts of celebrity included their personal statements, we purposed that it is managed by celebrity or social manager of celebrity. Analyzed dataset was excluded by celebrities, who were not present on Facebook and their profile was managed by fans.

### **5.2. Research methodology**

The analyzed dataset is represented by published posts on celebrity Facebook profiles and pages during the period from July 1, 2016 to December 31, 2016. Content analysis was conducted on profiles of 37 celebrities. We were familiar with social activities and celebrity participation in them as a partial output of research project. Qualitative analysis of social campaigns, non-profit organisations and types of posts leaded to better understanding of level of congruence. Next, we focused on posts of selected celebrities, which contains social responsible behaviour (n = 88). The unit of analysis was a discrete post. Categories of analysis were: celebrity, celebrity categories, presence of congruence and number of congruent posts.



To operationalize the celebrity category observation was done regarding whether celebrity prevailed job. Coding was done by researcher and therefore our approach is close to lexical approach of content analysis.

## 6. ANALYSIS AND RESULTS

In total we analyzed 37 Facebook profiles of celebrities (we excluded profiles of politicians and celebrities not present on social network Facebook). Content analysis of celebrity posts showed 56,76 % of incongruent posts and 43,24 % of congruent posts of 37 active celebrity profiles. Congruence is important also on level of consumer's perception of a celebrity's personality characteristics (Ericksen, 1997; Graeff, 1996; Sirgy, 1982, 1985; referenced by Choi, Rifon, 2012, p. 639). On the other hand, it is unknown whether celebrity use Facebook timelines only for self presentation of own thoughts or as a part of deal with non-profit organisation. The majority of celebrities (n = 21), which participated with non-profit organisation, was passive in relation with their Facebook activities. These celebrities did not mention any posts familiar with non-profit organisation and even with their social behaviour. A smaller part of celebrities (n = 16) was active. Their social responsible behaviour can be divided in few categories. The majority of celebrities used names of non-profit organisation (n = 33). Celebrities were used for marketing purposes of non-profit organisation. Celebrities shared photos from events, links of non-profit web pages or videos with non-profit logos. As we mentioned, celebrity can use their Facebook profiles to share their thoughts as normal users. Some celebrities naturally acted responsible (n = 29). Their own social responsible behaviour had various shapes - emotional, cognitive but also conative. As was mentioned before, celebrities frequently jumped theme from one burning issue to the other (Harris, 2003; referenced by Kelly, Morgan, Coule, 2014, p. 60). They wrote posts or even blogs about burning themes as politics, extremism, immigrants, wars, racism and others. Rational rhetoric was changing by emotional aspects of themes. On the other site, celebrities also acted responsible. They collected garbage on their walks, they supported financially projects of communities, they visited oncological child patients and many others. These activities were shared with their audience through Facebook. Other way of social responsible behaviour was detected in context of identification with social responsible behaviour of someone else (n = 15). Celebrities shared content, which was created by companies, non-profit organisations and also individuals, but was not created by themselves as original ideas. Next category was social responsible behaviour resulting from work of celebrity (n = 8). Partial outcome of work of celebrities can be related with social responsible behaviour. For example, *Matej Sajfa Cifra* moderates TV program *Wish tree*. The main objective of this program is fulfilment of children's dreams. Last category was social responsible marketing (n = 2) and it is based on definition of social responsible marketing (Džupina, Džupinová, 2016, p. 15). For example, internet bookstore *Panta Rhei* in campaign *Thanks book* highlight on violence against women. *Kristína Farkašová* shared posts of the campaign.

|                                                            |     |
|------------------------------------------------------------|-----|
| Marketing of non-profit organisations                      | 38% |
| Own social responsible behaviour                           | 33% |
| Identification with social responsible behaviour of others | 17% |
| Social responsible behaviour resulting from work           | 9%  |
| Social responsible marketing                               | 2%  |

Table 1: Distribution of social responsible behaviour of celebrity (own processing)

With findings of Illicic and Baxter in mind, that celebrities and charitable organisation's congruence have positive effect to attitudes (Illicic, Baxter, 2014, p. 205), we were interested in category of celebrities and their congruence. Due to this, we statistically tested two independent

samples - type of celebrity (actor, priest, doctor, moderator, musician, writer, athlete, dancer, and employee) and congruence / incongruence. Our value of chi-square was well in excess of the minimum value of 9.0 needed to be significant at the 5% level for 3 degrees of freedom, so we reject the hypothesis that the samples came from the population defined by the null hypothesis. Thus we accept the hypothesis that there is a relationship between a celebrity type and congruence with non-profit organisation. Because the sample sizes generally differ in contingency tables, we converted the frequencies in each cell to percentages of the relevant sample size at this stage (Howitt, Cramer, 2011, p. 157).

|                |           | Incongruence | Congruence | Total  |
|----------------|-----------|--------------|------------|--------|
| Celebrity type | Actor     | 23,81%       | 18,75%     | 42,56% |
|                | Employee  | 0,00%        | 18,75%     | 18,75% |
|                | Moderator | 23,81%       | 12,50%     | 36,31% |
|                | Musician  | 28,57%       | 18,75%     | 47,32% |
|                | Writer    | 4,76%        | 18,75%     | 23,51% |
|                | Athlete   | 19,05%       | 6,25%      | 25,30% |
|                | Dancer    | 0,00%        | 6,25%      | 6,25%  |

Table 2: Observed percentages in each sample based on the observed frequencies (own processing)

It seems from Table 2 that only employees, writers and dancers act socially responsible on Facebook congruently with their previous non-profit activities. On the other side, actors, moderators, musicians and athletes are incongruent with their social responsible activities on their Facebook profiles. Meanwhile abroad, international actors are well known for their engagement on burning issues, like Emma Watson and women's rights or Leonardo DiCaprio and the environment; Slovakian actors present themselves by social responsible behaviour too little publicly. Their only activity was connected with small, seasonal social responsible campaigns of non-profit organisations (in these cases campaigns like *I am not NORMAL* or *but hate cannot be hidden*). Moderators were often connected with social responsible behaviour resulting from work, but more often they are not connected with any social responsible behaviour on their Facebook profiles. Musicians acted very similarly. They are engaged in charitable concerts or in seasonal social responsible campaigns of non profit organisations (in these cases campaigns like *I want to live in normal country*). Content of celebrities' Facebook post was related with sport activities. Only social responsible behaviour was detected with one campaign *What I gave you, you will give me back*. This campaign was connected with anti-doping agency. Congruence was detected in cases of celebrities, not so well known by adolescents - employees, writers and dancers (Džupina, Hodinková, Chalányová, 2017, p. 9). It seems that congruence of employees is caused by their social responsible behaviour resulting from work (education project of *Digital garage* by Google). Various social topics were connected with writers - they acted publicly socially responsible by their own thoughts and even by publicly financial support of communities. Writers were engaged with issues on books and reading literacy. Considering that books and readers are their main product and audience, social responsible behaviour is not so relevant. At the end, congruent category was represented by dancer. The main problem with this category is, that was represented only by one dancer. This one acts publicly really social responsible. He shares his and also others social responsible thoughts, was engaged long term social responsible activities with non-profit organisation and also act responsibly by his own behaviour. But due to loneliness in this category, it is hard to

generalize. Level of the congruence of celebrities with their non-profit organisations through social network Facebook was detected by number of social responsible posts. Our sample was like population;  $t(184) = 7,467$ ,  $p=.000$ , so we were interested in the most active celebrity category. The most active celebrity category was dancer ( $n=21$ ) as we mentioned earlier by observation. Next most active categories were writers ( $n=20$ ) and employees ( $n=16$ ). The least publicly social responsible celebrity category were athletes ( $n=2$ ). Level of congruence retraced congruence by category of celebrity.

## 7. CONSLUSION

The main objective of our research was to determine a congruence / incongruence of celebrity's Facebook profiles and non-profit organizations in Slovakia through social responsible behaviour. First research question identified that the majority of the celebrity's Facebook profiles were incongruent with non-profit organizations. Possible explanation of the *status quo* is that although Slovakian celebrities are faces of non-profit organisations; their identification with social issues or non-profits is missing or is not consistent with their role of celebrity. This situation can lead to disbeliefability of celebrity and also non-profit (Levy, 1959; Kamins and Gupta, 1994; Kotler, 1997; referenced by Erdogan, 1999, p. 302) and illustrates reasons why perception of concepts celebrity and social advertising is nearly opposite (Kačániová, Bačíková, 2017, p. 9). Second research question was looking for answer of question how celebrities act responsible on their Facebook profiles. We identified that celebrities were not engaged only with non-profits, but also they acted socially responsible by themselves or by work. They identify with social responsible behaviour of someone else or borrow his or her face to company for social responsible marketing purposes. So, we detected congruence in level of social responsibility, not only by the level of presence in non-profit organisations.

Next, we focused on categories of celebrities. We noticed that important employees, writers and dancers are congruent more often than actors, moderators, musicians and athletes. Numbers of social responsible posts followed this lead. Interesting finding of this paper was that Slovakian celebrities jump theme from one burning issue to the other and due to this they cannot become experts in some special field of social responsibility. Other issue is legitimacy of celebrity for formation of opinions others. They are not experts in the field, as we mentioned, but their opinion can be imitated by adolescents and even others. Slovakian celebrities talk quite enough about politics, which is always controversy theme and it is hard to say if they are authorized enough to do it. This may result of previous history of Czecho-Slovakia (Saxonberg, 1999, p. 28) or international status of celebrities in politics (Tsailiki, Frangonikolopoulos, Huliaras, 2011, p. 11). We see limits in the size of our research sample and also from this research, we cannot see attitudes of adolescents to celebrity Facebook posts, but we hope to deliver more results in the future. Sentiment analysis can be elegant, compendious and comparable way of Facebook post's attitudes inspections.

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## ANALYSIS OF COMPANIES OF THE MEDIA SECTOR BASED ON THE EXAMPLE OF COMPANIES QUOTED ON THE WARSAW STOCK EXCHANGE IN POLAND AND THEIR FAIR VALUE

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### **ABSTRACT**

*This paper examines share price of the companies listed on the WIG-MEDIA and their fair value between 2005-2014. Data from 2007 to 2017 were collected from the Stooq.pl (Polish portal of shares). Two hypotheses are tested: (1) value of the shares based on the market price; (2) value of the shares as the fair value of shares.*

**Keywords:** stock exchange, share valuation, fair value, companies, WIG-MEDIA

### **1. INTRODUCTION**

The media market is subject to dynamic changes. Primarily, the consumer and the direction of development of new technologies are changing. The media market is following them. The modern media recipient, in spite of appearances, reads not only branch magazines, but also observes the reality outside the mainstream, that in on Internet portals such as Kwejk, Demotywatory, or reading comments on Onet.pl, and Gazeta.pl websites. These Internet services are the source of the young generation's voice. It is there, where we can observe behaviours of these people, who will take purchasing decisions in 10 years. The young generation thinks in different terms, and will decide about their future in a way different than our one. The area, where changes are the most visible, is the technology. The consumer of the 21st century uses new technologies in full, but subjectively – he or she accepts these solutions, which give him or her something more. Alex Stil, the head of digital EMEA & global head of programmatic, Mindshare Worldwide, speaking of an important role of digital media in our lives, proved that the future belongs to big data. The greatest challenge is the analysis of data – aggregation of information alone is just the tip of the iceberg. To have data, and to make conclusion on their basis are two different issues. That is why the change of the approach towards data, better understanding of them, and analysis at a much deeper level are necessary. Good understanding of the customer's needs and market conditions enables to introduce changes which guarantee success. Media will also change. Apart from the "mythic" passing from off-line to on-line, about which everybody talks about, the change of systems of access dividing the content into the basic and the premium one also awaits us. The process, which has been in progress for a very long time in spite of appearances, will be a great challenge for publishers in the coming years. The offer is being developed, but not only towards the on-line direction – thanks to digitisation of broadcasting, new channels quickly earning new watchers are being created. The challenge for the media market will be also demographic changes. The Polish society – by analogy, like these of the West – is getting old very fast. Media will have to reckon with not only audience outflow, but also with other patterns of consumption because young groups do not copy communication schemes of the older ones. The change of settlement group into broader and older groups is, for sure, the attempt of media's response to this challenge.

### **2. VALUATION OF SHARES**

Shares are the most important group of financial instruments listed on the Warsaw Stock Exchange. In 1991, during the first quotation, the shares were the only financial instrument. At the end of the 90s, the structure of the Warsaw Stock Exchange changed as other financial

instruments, including forward contracts, were introduced to turnover. On the first exchange session, shares of 5 companies were listed. In the subsequent years, there was observed an increase in the number of companies and their market value.

A share is an instrument combining rights of property and non-proprietary character which result from shareholder's participation in a joint-stock company or a limited joint-stock partnership, and the sum of rights and obligations that a shareholder has within the framework of a company or a partnership or a part of a share capital.

When purchasing shares, it is possible to distinguish the rights vesting with a shareholder and group them into property and non-proprietary (corporate) rights. These rights, in principle, are equal. However, it is possible that on the basis of a company's articles of association some shares are assigned with special rights or particular obligations.

The following property rights are vital for the valuation of shares (Borowski, 2013, Bossa.pl):

- right to a dividend (share in a company's profit assigned for division among shareholders),
- right to participation in the division of assets of a company in the case of its liquidation,
- right to subscription of shares of a new stock issue (The Code of Commercial Companies and Partnerships grants the hitherto shareholders a right to taking up of shares on a new stock issue in the case of an increase of a capital by a company).

A share is a part of a company's capital. A person holding shares of a joint-stock company becomes a shareholder of a company who is, in a way, a co-owner of everything that constitutes company's assets (immovables, machines, etc.).

Two basic types of shares can be distinguished: registered and bearer's shares. A fundamental difference concerns the turnover of these shares. Registered shares, contradictory to bearer's shares, are not placed on a public market. Registered shares may be preference shares connected, for instance, with a right to vote (2 votes – 1 share) or dividend.

One of the elements of a fundamental analysis, which is most important, is valuation of shares. When making investment decisions, an investor should know if a company they want to invest in is not underrated or overestimated by a market. By means of valuation it is possible to estimate the risk associated with an investment.

There are 4 approaches of valuation of shares (Copeland, 1997, pp. 65-69; Kufel, 1992, pp.78-89):

1. Accounting approach
2. Liquidation approach
3. Multiplier approach
4. Revenue approach

Re 1. An accounting approach is also known as a method of a net asset value. It consists in estimating a company's value (as for a single share) by means of reducing the value of assets by company's liabilities. Then, the result is divided by the number of issued shares. This method is used rarely as it does not make allowances for market realities and development prospects.

Re 2 A liquidation approach consists in determining the value of income due to the sale of assets in the moment of liquidating a company. This method is used when a company is liquidated or merged with another one.

Re 3 A multiplier approach, aka comparative or indicative, relies on valuation of a company on the basis of shares belonging to other companies that are similar to the one in question. Usually, such comparison refers to companies of the same area of activity in a given sector.

Most common indicators used in this method are:

- price/profit
- price/accounting value
- price/sale

Re 4 Approach based on a revenue model Valuation is made by means of a method of discounted cash flows.

- Model of discounted dividends.

A ratio analysis is most commonly used by investors due to its simplicity. The above-mentioned indicators were used to illustrate this valuation for an analysis. The first one is an indicator: price/profit.

$P/P = \text{price of one share} / \text{net profit for one share}$

Another indicator is the price/company's accounting value ratio. As it was in the previous case, the calculation requires the use of a price of one share and accounting values (assets – liabilities) per one share of a company, where the value is achieved by dividing an accounting value by a number of company's shares (Jajuga, 1996, pp.34-57).

$P/BV = \text{price of one share} / \text{accounting value for one share}$

The last indicator is price/net sales. In order to obtain this measure, it is necessary to hold data about sale per one share (quotient of incomes from sales and a number of issued shares), and a value of one share.

$P/S = \text{price of one share} / \text{net sales for one share}$

All information concerning an accounting value, net profit and sales includes an annual financial statement prepared by companies. One may use quarterly reports of companies to forecast indicators. Apart from the aforementioned indicators, there are many other types of them which may make the financial situation of a company known.

When valuating shares, one should also use the model of discounted dividends. This model is one of the oldest and most commonly used ones. It is dedicated to minority shareholders. In an adverse situation, when valuation is made by a person having control over a company, a decision regarding the pay out of some part of the profit is made by the person themselves. Here, a dividend policy is of no importance for the valuation. There are the following models of discounted dividends:

- constant dividend value model
- constant dividend growth model (by Gordon)
- two-stage model
- H model
- three-stage model

A constant dividend value model, as indicated by its name, assumes that a dividend will be paid out in the same amounts at all times (Pierce, 2004, pp.124-145; Thompson, 2008, pp.45-67; Valea, 2001, pp.88-125):

$P = (D / R)$

D – dividend

R - return rate expected by an investor

Situations arising from this model are encountered very rarely.

Another method is worked out by Gordon. It is one of the easiest and commonly used models. It assumes that a growth rate of a dividend will be stable:

$P = [D_1 / (r - g)], r > g.$

P - share value,



$g$  - dividend growth rate,

$D_1$  - dividend (per share) paid out in the following year,

$r$  - required return rate.

Formula for a growth rate of a dividend:

$$g = ROE \times f$$

ROE – rate of return from equity capital

$f$  – retention rate (quotient of a retained profit and a net profit)

The two-stage model, as its name suggests, consists of two phases: a growth period at a constant speed  $g_0$ , and then at a constant speed  $g$ :

$$P = D(1+g_0) \left[ \frac{1}{r-g_0} - \frac{(1+g_0)^N}{(r-g_0)(1+r)^N} + \frac{(1+g_0)^{N-1}(1+g_1)}{(r-g_1)(1+r)^N} \right]$$

The H model assumes that a growth rate of a dividend will decrease linearly at the beginning (from the level  $g_0$  to  $g$ ), and later on it will increase at a constant growth speed  $g$ :

$$P = \frac{D_0(1+g) + D_0H(g_0-g)}{r-g}$$

$H$  – half of the period when there is a linear decrease in a growth speed of a dividend.

The remaining signs are equal with the previous model by Gordon.

The difference between the three-stage model and the H model is that at the beginning there is an additional regular period in which a dividend rate grows in at a constant speed  $g_0$ , whereas other assumptions are identical as it was in the previous model.

Thus, valuation of shares consists in determining its value to identify underrated or overestimated shares. For that reason, it is necessary to carry out a technical (fundamental) analysis and check if the price of a share corresponds to a company's value.

### 3. FAIR VALUE OF LISTED COMPANIES

Share price of the companies listed on the Stock Exchange should reflect also their fair value (Pierce, 2004, pp. 124-145). The fair value can be defined in several ways. In view of the foregoing, the fair value is a value used repeatedly in accounting, and thus in Article 28 (6) of the Accounting Act of 29.09.1994 as "the amount for which a given asset component could be exchanged, and the liability could be paid on market transaction terms between interested and well-informed, unrelated parties.

In view of whether the price of shares that are quoted on the stock exchange corresponds to their fair value, should be found in the value alone, since, after all, the values may be diverse, like the value of a similar company, producing similar goods and operating in the same industry, will also be diverse for various reasons.

The subject of trade covers minority shares, and the main market participants are retail investors or minority institutional investors, thus the price of shares should reflect the fair value characterizing the liquid minority interest (Borowski, 2013, bossa.pl).

The value presented in this way seems righteous, which is confirmed by the premium paid by the investors who announce calls for subscription for shares and plan in this way the purchase of the controlling interest. Then the premium reflects the difference between the level of liquid minority interest and the level of controlling interest. Sometimes the level takes into account benefits resulting from synergy. An investor purchasing the controlling interest in this way receives premiums that appear after taking over control of a company, in the form of funds, business management and making a number of strategic decisions.

The fair value of the share price should be determined in accordance with the idea of capital market, namely the market participants should have equal access to data, information and all messages concerning a given company. However, the investors are divided into three groups:

- a) People with access to the most closely guarded information that affects the price and the business value, namely those can the company's management board or shareholders,
- b) Institutional investors with blocks of shares with simultaneous access to the company's management board,
- c) Individual investors who have access to public information.

At this point, there should be no differences in particular groups, at least officially, however, it happens that a group that is closest to the company has information which can obviously change its value overnight or distort its value artificially, e.g. other data or informal data, and even fictitious data. Worldwide we can also appreciate companies that treat individual investors seriously, namely provide them data concerning a company and treat them as equal and as strategic investors, with a large impact on a company in the present and in the future. Transactions that are concluded on the Warsaw Stock Exchange relate to transactions between interested parties, namely a purchase or sale order should be submitted. Sometimes there are cases of wrongly submitted orders, but these are marginal orders that do not have a large impact on the transactions conducted on the Warsaw Stock Exchange. Share liquidity is understood as a percentage quantity of shares in a company that are in the possession of minority shareholders. This is, at the same time, free float and the face value of such shares and the value of average daily trade in shares in a given company (Kufel, 1992, pp. 78-89). Thus, we may presume that if during a day a large trade in shares takes place and a greater part of shares remains in the hands of minor shareholders, the share price reflects their fair value. We cannot agree with the fact that at small or minimum trade the value of shares is reduced to its daily minimum and it would be its fair value. Then it is only a change in the share price to a lower one and it does not indicate its fair value, as the trade alone suggests that this is only a pure coincidence. Such an impact can be exerted by large shareholders, as they can, by using one block, decrease the share value, preventing smaller players from raising the price for one reason: the capital of smaller shareholders does not enable them to raise the share price (Veale, 2001, pp. 88-125; Frąckowiak, 1998, pp. 34-42). There is one premise more to determine the fair value of share price. The investors are fond of investing in shares, namely they buy them as in the past they managed to earn on them and they feel that presently the share price is ideal and reflects their fair value and will enable them to obtain fair dividend in the future. Such a purchase or sale of shares can largely overestimate or underestimate the share value of a quoted company. Here the IT industry may serve as an example, namely shares in technological companies at the beginning of the new millennium, when shares in these companies were being purchased without any analysis in technical terms, but looking at their name and value, which was increasing overnight. In view of the foregoing, this led to excessively high business value above its fair value (Thompson, 2008, pp. 45-67). The share price should thus reflect the fair value of a company listed on the Warsaw Stock Exchange. For the value of these companies be fair, the market must make available to all investors information regarding companies listed on the Warsaw Stock Exchange. The shareholders should be treated equally; therefore we cannot distinguish majority shareholders as those who should have information unavailable for minority shareholders. First of all, shares should be liquid securities, therefore they should be in free float and have real-time transferability, namely at any moment and at any time during the office hours of the Warsaw Stock Exchange on a business day (The analysis of 233 recommendations or analytical reports issued by broker's offices in the period from January 2014 to January 2015, concerning 41 companies comprising the WIG20 and mWIG40 indexes of the Warsaw Stock Exchange).

#### 4. WIG-MEDIA AND SHARES IN THE COMPANIES LISTED ON IT

The Market of Digitalisation and mobile devices will power the media and entertainment market in 2014-2018. The global media and entertainment market will be increasing at the rate of 5% per year, achieving the worth of USD 2.2 billion in 2018. Although traditional media will still have the greatest share in revenues, and the television will remain the greatest medium for advertisement, they will be digital media and advertisement on the Internet that will power the growth. The Polish market in the analysed period will be growing at the rate of 3.7% per year, and in 2018, its worth will reach USD 12.6 billion.

Countries of the highest dynamics of development in 2014-2018 are Nigeria, whose annual rate of growth is 16.8%, Kenya (13.5%), India (11.6%), Peru (11.4%), and China (10.9%). On the opposite side, there are Japan, whose projected annual rate of growth is 0.7%, Greece (1.3%), Belgium (1.9%), and Denmark (1.9%). Expenses for entertainment and media in Poland will be growing at the rate of 3.7% per year. This rate is similar to that of the developed countries of the Western Europe.

In the coming years, two main factors will still impact the shape of the entertainment and media market the most: further digitalisation, and growing importance of mobile devices. Segments that will grow the fastest will be Internet advertisement and access to the Internet. Their projected annual rate of growth are 10.7% and 9.0% respectively. The segment of access to the Internet will continue to be responsible for the greatest part of the market, and its importance will increase ever further in the coming years. Currently, this segment is estimated at USD 455 billion, and its worth in 2018 is projected at USD 635 billion. Expenses for mobile access exceed current ones for fixed-line access (USD 238 billion and USD 216 billion respectively). In subsequent years, this difference will be growing due to much higher dynamics of growth of mobile access to the Internet in comparison with the fixed-line one (13% vs. 4.1%).

The value of the Polish media and entertainment market will be USD 12.6 billion in 2018. Access to the Internet will constitute the greatest segment of this market with its share of 30%. Segments of the market related to digital technologies, especially advertisement on the Internet (15.2%), access to the Internet (7.5%), and video games (7.8%), will be developing the fastest. On the opposite side, there are segments related to traditional media, such as the press market (-1.6%), the market of pay-television (-1.2%), or the radio market (-1.0%) [15].

In the projected period of 2014-2018, the Polish advertising market will be growing at an annual rate of 5.8% powered mostly by the growth of the Internet advertisement (an annual rate is over 15%). It is projected that in 2018, the commercial will lose its dominating position in favour of the Internet advertisement.

The WIG-MEDIA index, presented in Figure 1, shows that from 2010 to the third quarter of 2012 the media sector's companies in Poland showed a downward trend in their values. However, since the fourth quarter of 2012, it has been possible to notice a significant upward trend, in which the augmentation and consolidation at the level of 4000 points on the index take place. The values reported on 24.03.2017 reflect the upward trend and confirm it. However, the market values do not reflect their fair value.

*Figure following on the next page*

Figure 1: WIG-MEDIA index in the years 2007 – 2017 (source: stooq.pl)



Therefore, it can be assumed that the Polish media market is very dependent on the global economy. Most of the companies quoted on WIG-MEDIA have a very good financial condition and promises great hope for the rapid and large increases of their values. For that reason, the fair value should be included in the market value, however, the market value differs from it due to some other external factors on the financial market and even speculative factors in the development of the share price of the media companies quoted on the Warsaw Stock Exchange in Poland.

The companies listed in the WIG-MEDIA index are characterized by a good financial condition:

**4FUNMEDIA** - the 4fun Media S.A. Capital Group is a company operating in the television market with special reference to the thematic television market. 4fun Media S.A. is an interactive television platform distributing video content via television, mobile telephony, IPTV platforms, and the Internet.

**AGORA** - The company's activities includes publishing newspapers and magazines, outdoor advertising, various on-line and radio activities, as well as sale of unique book collections with music and movies. A flagship activity of the company is the *Gazeta Wyborcza* newspaper. [in English: Electoral Newspaper] Agora is the publisher of the free daily "Metro" and 14 national glossy magazines.

**ASMGROUP** – Group dedicated to providing comprehensive sales support and outsourcing services. He runs four business lines: merchandising, outsourcing sales, field marketing and marketing research.

ATMGRUPA – The group of companies operating on the movie and television production market. It executes orders of television stations: starting from the idea, finding an appropriate format, through the preparatory period, photography and post-production, and ending in commissioning the ready to broadcast material. The group also performs services of editing, sounds, production, operating, and transport services.

HUBSTYLE – Owner of e-commerce portals. The most important are Nokaut.pl - price comparison, SklepFirmowe.pl - solution to run online stores. The company also sells online advertising.

IMS – The IMS group is an international supplier of specialised services in the scope of sensory marketing in a sale location. It performs services aimed at influencing on attractiveness of sale locations and the growth of promoted assortment sale.

K2INTERNET – The K2 group offers innovative solutions in the scope of marketing, sale, and customer service. The K2 group performs services in two main areas of activity: e-marketing (creation and strategy of communication, e-marketing consulting and usability, development and maintenance of Internet services, e-commerce, Enterprise Content Management, Business Process Management, managed hosting), on-line media (planning and purchase of on-line media, affiliate marketing).

KCI – The group is currently concentrated in two areas: the real estate segment and the media segment built around press titles such as Rzeczpospolita, Parkiet Newspaper, Bloomberg Businessweek, Sukces or Uważam Rze.

KINOPOL – Kino Polska TV S.A. produces and distributes Telewizja Kino Polska television, the winner of the Telekomery Tele Tygodnia 2011 awards [in English: Tele Tydzień magazine's Telekomery Awards of 2011] in the category of The Best Movie Channel. It received the prestigious Hot Bird TV Award two times, and the award of the Polish Film Institute. In 2011, the television offer of the Company was extended with the Kino Polska Muzyka channel presenting watchers only Polish music.

LARQ – Polish holding company active in the area of innovative media, new technologies and infrastructure. Most important investments are: Nextbike Poland (the largest provider and operator of urban bicycle systems in Poland), Synergic (the leading national operator and owner of non-standard outdoor advertising media) and Brand24 (owner of the SaaS content authoring tool).

MEDIACAP – Group providing services in the field of media, marketing, online advertising and IT services as well as market research and public opinion. Subsidiaries are market leaders: creating and implementing advertising strategies, interactive marketing and new media, market research and public opinion, and marketing events.

MUZA – The publishing company - in the offer is primarily fiction, albums, atlases, encyclopedias, lexicons, guides, dictionaries, books for children and youth, tourist guides. The publisher also runs its own Readers Club and online bookstore. Its products sell mainly on the domestic market.

PMPG – A holding company operating on the traditional media and new media market. The Group includes, among others: Agencja Wawter-Reklamowa Wprost, publisher of the weekly "Wprost" and Orle Pióro, publisher of "Tygodnik Do Rzeczy" and "Historia do Rzeczy".

WIRTUALNA – He owns one of the two most popular Polish online portals - Wirtualna Polska. O2 portal and specialized vertical portals, including Money.pl, Biztok (business), Goodprograms (new technologies), Sports (Pudelek), Pudelek (entertainment), abcZdrowia, Parenting.pl (health) And OpenFM Internet radios and PolishStatistics. In addition, the Group operates on the Polish online advertising market, offering its clients a wide range of advertising products.

## 5. ANALYSIS ANALYSIS AND VALUATION OF THE MEDIA SECTOR COMPANIES QUOTED ON THE WARSAW STOCK EXCHANGE (WSE) IN POLAND

In the media sector, three companies, the values of which approach to their maximum prices on 23.03.2017, can be recorded, and they are ASMGROUP, IMS and LARQ. Some companies were overvalued by even 90%. These companies are AGORA, KCI and PMPG. However, flagship companies such as ASMGORUP, IMS and LARQ remain with the best results at the forefront, as it is shown in table 1-2.

TABLE 1: Companies listed on the WIG-MEDIA in Poland as of 23.03.2017 (prepared by the author on the basis of the financial data of the WIG-MEDIA companies)

| Name      | Average rating | rating  |
|-----------|----------------|---------|
| 4FUNMEDIA | 4.0/5.0        | A       |
| AGORA     | 3.0/5.0        | AAA     |
| ASMGROUP  | 5.0/5.0        | AA+     |
| ATMGRUPA  | 3.5/5.0        | AA+     |
| HUBSTYLE  | 5.0/5.0        | CCC-    |
| IMS       | 4.0/5.0        | AAA     |
| K2INTERNT | 4.0/5.0        | BBB     |
| KCI       | 3.5/5.0        | AAA     |
| KINOPOL   | 4.0/5.0        | A       |
| LARQ      | 4.0/5.0        | AAA     |
| MEDIACAP  | 5.0/5.0        | AA+     |
| MUZA      | 2.5/5.0        | BB+     |
| PMPG      | 2.5/5.0        | CCC+    |
| WIRTUALNA | No data        | No data |

TABLE 2: Companies listed on the WIG-MEDIA in Poland as of 23.03.2017 (prepared by the author on the basis of the financial data of the WIG-MEDIA companies)

| Name      | Current price PLN | Maximum price PLN from the beginning of the stock exchange quotation |
|-----------|-------------------|----------------------------------------------------------------------|
| 4FUNMEDIA | 5.20              | 21.06                                                                |
| AGORA     | 15.52             | 107.70                                                               |
| ASMGROUP  | 5.50              | 5.50                                                                 |
| ATMGRUPA  | 4.61              | 9.38                                                                 |
| HUBSTYLE  | 1.90              | 12.15                                                                |
| IMS       | 3.49              | 3.49                                                                 |
| K2INTERNT | 13.50             | 22.90                                                                |
| KCI       | 0.70              | 85.37                                                                |
| KINOPOL   | 13.40             | 25.97                                                                |
| LARQ      | 14.00             | 14.00                                                                |
| MEDIACAP  | 2.79              | 3.32                                                                 |
| MUZA      | 3.82              | 19.30                                                                |
| PMPG      | 4.76              | 250.80                                                               |
| WIRTUALNA | 55.75             | 57.65                                                                |

In table , the most important ratios presenting financial condition of the media sector's companies were presented. Within the fourteen examined companies, the generated profit per share was reported in twelve companies, and these were 4FUNMEDIA, AGORA, SAMGROUP, ATMGRUPA, IMS, K2INTERNET, KINOPOL, LARQ, MEDIACAP, MUZA, PMPG and WIRTUALNA and in two companies, a loss per share was reported, and these are HUBSTYLE and KCI, however in WIRTUALNA the value could not be determined due to the lack of data. It shows that the flagship media companies prosper properly on the financial market and are able to record higher or lower profits.

The price to the operating earnings shows the losses of the company at the negative, and this state of affairs was reported in three stock exchange quoted companies, and they were HUBESTYLE and KCI. However, 4FUNMEDIA, AGORA, ASMGROUP, ATMGRUPA, IMS, K2INTERNET, KINOPOL generated a high positive ratio (a double-digit value) which shows the company's profit.

The P/BV index informs how the company's own capital is valued by the market at a given moment. A general interpretation of the index consists in the fact that the P/BV indices below 1 mean a low price of a company, whereas a value over 3 that a company is overrated. The number of companies of a low value below 1.0 amounts to 9. Thus, these companies are attractive for investors, whereas the value of 3.0 is exceeded solely by two companies, which means that they are overrated.

The remaining 8 enterprises are also worth recommendation and attention . In view of the foregoing, we should note that from the above financial data we can calculate fair values of particular companies listed on the WIG-MEDIA.

The value of the P/P index is expressed in the way that when the value of the index is lower, then the price for the purchased company's shares is theoretically lower too, which means that the enterprise is more attractive.

*TABLE 3: Financial ratios of the companies listed on the WIG-MEDIA as of 23.03.2017  
(prepared by the author on the basis of the financial data of the WIG-MEDIA companies)*

| <b>Name</b> | <b>Price/Profit</b> | <b>P/OE (price/ operating earnings)</b> | <b>Price/BookValue</b> |
|-------------|---------------------|-----------------------------------------|------------------------|
| 4FUNMEDIA   | 0.56                | 13.96                                   | 0.71                   |
| AGORA       | 0.62                | 44.35                                   | 0.66                   |
| ASMGROUP    | 1.87                | 29.97                                   | 3.63                   |
| ATMGRUPA    | 2.24                | 18.29                                   | 1.74                   |
| HUBSTYLE    | 1.79                | -9.10                                   | 2.64                   |
| IMS         | 2.60                | 16.31                                   | 7.15                   |
| K2INTERNT   | 0.36                | 45.64                                   | 1.32                   |
| KCI         | 0.43                | -1.62                                   | 0.13                   |
| KINOPOL     | 2.33                | 14.46                                   | 4.00                   |
| LARQ        | 13.85               | 3.21                                    | 1.31                   |
| MEDIACAP    | 0.75                | 7.35                                    | 2.25                   |
| MUZA        | 0.34                | 7.52                                    | 0.45                   |
| PMPG        | 0.95                | 6.27                                    | 1.59                   |
| WIRTUALNA   | 0.00                | 0.00                                    | 0.00                   |

It is used in order to demonstrate cyclic profits and losses of the analyzed companies (the income is much more stable than the company's profit). Therefore, it is evident that most companies (10) have the index close to the value of 2.0 - this stands for the company's attractiveness (Parvi, 52-60, 2014, Parvi, 2015, pp. 83-88).

The price to profit demonstrate that seven companies operate exemplary on the market and have a value of more than 1.0, and these are ASMGROUP, ATMGRUPA, HUBSTYLE, IMS, KINOPOL and LARQ. Some companies differ significantly from the average values, and these are AGORA, MUZA, K2INTERNET and PMPG. Other companies are below the thresholds and show the negative values, but they do not differ that much from the thresholds, and these are KCI, and HUBSTYLE.



According to the obtained values, it is clear that only HUBSTYLEA and KCI showed a loss, which was confirmed by the previous ratios included in table 3. Other companies have shown a substantial profit which was generated in the fourth quarters of 2016, and these were 4FUNMEDIA, AGORA, ASMGROUP, ATMGRUPA, IMS, K2INTERNET, KINOPOL, LARQ, MEDIACAP, MUZA, PMPG and WIRTUALNA.

TABLE 4: Technical assessment of companies listed on the WIG-MEDIA as of 31.12.2016  
(prepared by the author on the basis of the financial data of the WIG-MEDIA companies)

| Name      | Net profit (net loss)<br>in thousands | Profit per<br>share | Book value per<br>share | EBITDA per<br>share |
|-----------|---------------------------------------|---------------------|-------------------------|---------------------|
| 4FUNMEDIA | 1091                                  | 0.265               | 7.206                   | 2050                |
| AGORA     | 10164                                 | 0.213               | 23.017                  | 49129               |
| ASMGROUP  | 863                                   | 0.015               | 1.571                   | 2045                |
| ATMGRUPA  | 6723                                  | 0.080               | 2.647                   | 13365               |
| HUBSTYLE  | -434                                  | -0.024              | 0.714                   | -275                |
| IMS       | 1102                                  | 0.033               | 0.489                   | 2231                |
| K2INTERNT | 1727                                  | 0.695               | 10.238                  | 3424                |
| KCI       | -2870                                 | -0.042              | 5.273                   | 351                 |
| KINOPOL   | 2520                                  | 0.127               | 3.352                   | 10410               |
| LARQ      | 1310                                  | 0.179               | 2.308                   | 4777                |
| MEDIACAP  | 445                                   | 0.024               | 1.009                   | 1571                |
| MUZA      | 1690                                  | 0.603               | 8.521                   | 737                 |
| PMPG      | 1420                                  | 0.137               | 2.886                   | 1451                |
| WIRTUALNA | 23355                                 | 0.814               | 13.679                  | 38427               |

According the book value per share, it is possible to deduce that some companies are overvalued, and they are AGORA, K2INTERNET and WIRTUALNA, and in the case of the HUBSTYLE company, they are undervalued.

However, it is important not to follow this opinion because the values are only the book values, and the calculation of them is purely mathematical and financial. In the case of using the economic attitude and interpretation, it would occur that the companies do not have the fair value (table 6).

Price to earnings and price to shares express the value in PLN and it is a value characterized by the results of the companies which affect these values (Parvi R., 2014, pp. 262-267; Parvi R., 2014, pp. 169-177). Similarly, price to book value of a company ranges from PLN 0.714 (HUBSTYLE) to PLN 23.017 (AGORA). Comparing these values to the maximum values reached by the companies, we should note that the value of PLN 23.017 PLN as maximum (AGORA) and of PLN 13.679 (WIRTUALNA) were values reached by the companies during their quotations on the market over the last few years (2015-2017).

Generally, the value of the index P/OE is a useful tool for determining an absolute share value referred to the operating profits (table 3). Using the operating profit instead of a net profit (the C/Z index) allows for rejecting single events. Moreover, a net profit is easier to handle. Fewer companies incur losses at the level of an operating profit rather than a net value, which allows for a broader use of P/OE. An operating profit helps to determine the efficiency of an enterprise's activity on the market regardless of a financial situation. It does not depend on a structure of financing, i.e. a relation of foreign and own capitals. An operating profit stands for the profitability of an enterprise. It is clearly visible that these values are added in the case of each company, and even 9 companies have two-digit vales, which means that these companies

have a very good financial situation (Parvi, 33-36, 2014; Parvi, 2015, pp. 177-184, Parvi. 2229-229, 2016).

*TABLE 5: Values of the companies listed on the WIG-MEDIA as of 23.03.2017 (prepared by the author on the basis of the financial data of the WIG-MEDIA companies)*

| <b>Name</b> | <b>Present value</b> | <b>Maximum value</b> |
|-------------|----------------------|----------------------|
| 4FUNMEDIA   | 5.20                 | 21.06                |
| AGORA       | 15.52                | 107.70               |
| ASMGROUP    | 5.50                 | 5.50                 |
| ATMGRUPA    | 4.61                 | 9.38                 |
| HUBSTYLE    | 1.90                 | 12.15                |
| IMS         | 3.49                 | 3.49                 |
| K2INTERNT   | 13.50                | 22.90                |
| KCI         | 0.70                 | 85.37                |
| KINOPOL     | 13.40                | 25.97                |
| LARQ        | 14.00                | 14.00                |
| MEDIACAP    | 2.79                 | 3.32                 |
| MUZA        | 3.82                 | 19.30                |
| PMPG        | 4.76                 | 250.80               |
| WIRTUALNA   | 55.75                | 57.65                |

From table 6, it can be concluded that the fair value is significantly higher than the current share price of the companies listed on the WIG-MEDIA. A particular "pearl" in the index may be a well prospering MUZA that is largely undervalued.

*TABLE 6: Values of the companies listed on the WIG-MEDIA as of 23.03.2017 (prepared by the author on the basis of the financial data of the WIG-MEDIA companies)*

| <b>Name</b> | <b>Deviation from the fair value in PLN</b> | <b>Fair value</b> |
|-------------|---------------------------------------------|-------------------|
| 4FUNMEDIA   | 15.80                                       | 21.00             |
| AGORA       | 64.48                                       | 80.00             |
| ASMGROUP    | 0.00                                        | 5.50              |
| ATMGRUPA    | 4.39                                        | 9.00              |
| HUBSTYLE    | 3.10                                        | 5.00              |
| IMS         | 0.00                                        | 3.49              |
| K2INTERNT   | 4.50                                        | 18.00             |
| KCI         | 29.30                                       | 30.00             |
| KINOPOL     | 6.60                                        | 20.00             |
| LARQ        | 0.00                                        | 14.00             |
| MEDIACAP    | 0.53                                        | 3.32              |
| MUZA        | 6.18                                        | 10.00             |
| PMPG        | 35.24                                       | 40.00             |
| WIRTUALNA   | 1.90                                        | 57.65             |

It should be noted that fair values of particular companies listed in the WIG-MEDIA index can be calculated on the basis of the above-mentioned data and financial data (Parvi, 2015, pp. 51-67; Parvi, 2015, pp. 82-85, Parvi 109-114, 2015).

The Table 6 shows that the fair value is much higher than the current value of the share price of the companies listed in WIG-MEDIA. Particular jewels in the index may be thriving companies such as: ATMGRUPA, KINOPOL and MEDIACAP which are greatly underrated.

## 6. CONCLUSION

The share price of the media sector's companies quoted on the Warsaw Stock Exchange in Poland is significantly underestimated by the current financial situation in the world, especially when companies' values are so unstable. Indeed, media companies should show higher values, at least a fair one because the Polish media market is developing splendidly, and it promises even faster development. Currently, digital technologies and access to them for every citizen of the EU are developing very fast. In Poland, the media market is estimated at USD 15.2 billion in 2018, so it is a good omen for investors who do not know, in which sector they should invest their funds.

Media companies are earning significant amounts of money not only on commercials and radio advertisement, but also on Internet one, which increases their inflows from this activity by over 10%. Flagship media companies achieve enormous profits, which was proved in examination of ratios in last years and a net profit in the third quarter of 2014. Such example can be WIRTUALNA.

The fair value of the media sector's companies quoted on the Warsaw Stock Exchange in Poland should be reached within two years, that is up to 2019, because it is right estimation of further fast development of the Polish media sector.

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## FUNDING HEALTH SYSTEM IN CROATIA

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### ABSTRACT

*The health system has an aim to improve the health of the population and preserve it. However, there is the problem of ways of financing the health system. The financing of the health system is an important determinant of health, and there are three basic methods of financing it: Bismarck model, Beveridge model and the market model. Bismarck, works on the principle of solidarity and reciprocity, or on the basis of contributions paid by the active population. Beveridge model is a model in which health system is financed from taxes paid by all citizens, while market model represents financing of the health system through premiums. This paper will show the functioning of health systems in selected countries, as well as basic, frequently used, models of financing the health care system in the world. The work will explain ways of financing the health system in the example of the Croatian Institute for Health Insurance and will make a comparison of the health systems on selected countries and the Croatian.*

**Keywords:** *health system, financing, Croatian Institute for Health Insurance*

### 1. INTRODUCTION

The health system should have an aim to improve the health of the population and to preserve it, to help people develop and function smoothly. The problem that is always present is how to finance the health sector. This research paper will show the system of health care financing in Germany, Italy, the UK and the United States, and the Republic of Croatia and present the way health care system of the Republic of Croatia is funded. The financing of the health care system is a complex issue that is central to the needs of the functioning of the health system. Basic methods of financing, today commonly used in the world, are formed in the shape of the three models; Bismarck, Beveridge model and market model. Bismarck, works on the principle of solidarity and reciprocity, or on the basis of contributions paid by the active population. Beveridge model is a model in which health care is financed from taxes paid by all citizens, while market model represents the financing of the health sector through premiums. The goal was to demonstrate the functioning of health systems in selected countries, as well as basic, the most commonly used, models for financing the health care system in the world. The aim is to explain the ways of financing the health system in the example of the Croatian Institute for Health Insurance and make a comparison of health systems in the world and Croatia.

### 2. THE HEALTH SYSTEM IN THE WORLD

#### 2.1. Germany

Germany uses Bismarck model of financing health care, which is based on the principle of subsidiarity, and the health care system, it can be said, largely autonomous from the state. Approximately 80 % of medical costs is covered by the public sector, and 20 % from private insurance companies, while hospitals are usually under the direction of local or regional authorities. In Germany, most of the population, about 74 % has mandatory health insurance, a small proportion of insured persons in Germany is legally excluded from the system, all of them about 6 %. In the third group of the insured is only about 18 %, and those are mostly business

people with higher incomes, who can choose between compulsory and private insurance.<sup>1</sup> Voluntary membership in social health insurance is different in Germany, and 14 % of the total population is a voluntary member or insured over hospital funds. A large number of the insured has the right to choose the Sick Fund, although some groups of insured persons, such as persons who are engaged in agriculture, crafts, professions such as miners and sailors, do not have the right to choose the sick fund since there are health insurance funds which are precisely designed for them. Mentioned health insurance funds are distributed according to a specific geographic area, according to the level of employment and on the basis of the employer.

Germany:

- 7 groups of geographical areas which are further divided into lower groups,
- 17 regional,
- 12 replacement,
- 287 funds based on the basis of company employees,
- 24 Fund Association,
- 13 agricultural funds,
- 1 worker
- 1 Navy Fund.<sup>2</sup>

Germany distinguishes obligatory, belonging to public corporations, and private health funds. During the conclusion of the contract of compulsory health insurance, a contract is signed for one year. On the other hand, residents of Germany have the choice of 52 private health insurance companies, which are mostly reserved for people with high monthly income. With mandatory health insurance funds are distributed based on the principle of solidarity, a private insurance is based on the principles of savings accounts. According to Markovic and Vukic<sup>3</sup> increase in the cost of the health sector in most countries of this financing model is: the lack of adequate planning of health care spending, the lack of the budget of hospital capacities and the entire pharmaceutical sector.

## 2.2. ITALY

Italians state that the social system must operate redistributive. While the history of the Catholic Church had a great impact, so he developed a bad influence on state social area, which withdrew weak development of the voluntary sector compared to other countries that will be covered in this paper. After World War II they begin to use Beveridge model of financing the health care system. However, at the end of the 70s, The national health service takes over and provides health care using primary and secondary health care, and the funds are distributed among local, regional and national authorities. Primary care refers to the private doctors who receive a salary according to the number of their patients, and since the end of the 70's an increasing number of voluntary organizations is being developed. Under the secondary health care the impact of public-private mix is noticed, and is reflected in the hospitals where they differ the ones that are under the authority of local health authorities, the ones that are under the authority of the public sector and those who provide services under contracts. This way of functioning of the health system in Italy has led to financial problems for several reasons, among them the financial irresponsibility of the local health authorities have spent more than what they had been rescheduled, leading to reforms in late 1993.

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<sup>1</sup>Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 185.

<sup>2</sup>Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 185.

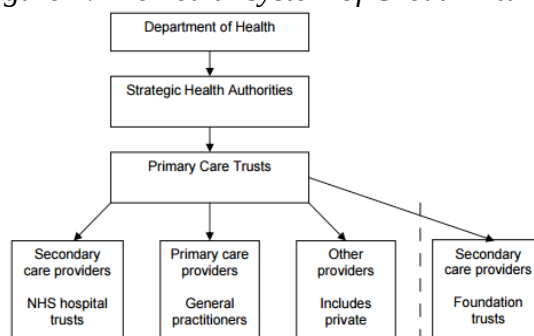
<sup>3</sup>Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 196.

The reform initiates closely tracking spending, leads to a change of the law in hospitals and reduces the use of work practices of doctors in public and private the health care system. However, the last reform is not fully implemented.

### 2.3. GREAT BRITAIN

Great Britain used Beveridgean model of financing health care. The main role in the health system of Great Britain, so-called. NHS organizations (Eng. National Health Service), the Ministry of Health in charge of the affairs of allocation of resources and the adoption of the law.

Figure 1. The health system of Great Britain



Source: Thomson J. (2007), Methods of financing health care, *Fifteenth International Conference of Social Security Actuaries and Statisticians*, Helsinki, Finland, page. 4.

Strategic Health Authorities (SHA) play the role of mediator between those who contracted health care and those who provide it in the form of health services, currently there are about 10thA large role in the health system of Great Britain has financing through funds. The general practitioners agreed to provide health services to the fund, but also perform a variety of services if they go beyond the boundaries of regular services and thus inherently provides some additional income. This paragraph recalls the health system of Italy where doctors just do the same thing, and the work and the public and the private system of health care in order to earn higher income by working in two places. Primary Care Trusts play an important role in the health system of Great Britain and the main body for contracting health services. Through Primary Care Trusts over 80 % of the total budget of the National Health Service of Great Britain was financed. In October 2006 across the UK, there were over 152 fund and each is covered by a specific geographical area. The main functions of these funds are providing access to doctors and other health care contracting services (dental, home care, etc.).<sup>4</sup>

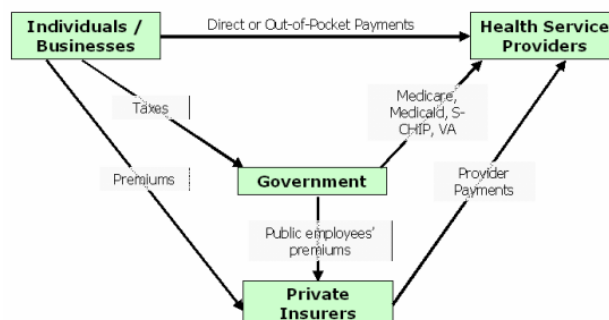
### 2.4. UNITED STATES OF AMERICA

The market model of financing health care is used in the USA. The movement of funds in the health care of America is carried out in two basic directions: the money collected comes to the competent institution and the competent institutions perform the distribution of funding health care providers. Individuals, as well as their companies, pay prescribed taxes on income (Eng. Taxes). In addition there are special tax paid by individuals or employees and their employers, for specific health programs, for example. Medicare.

<sup>4</sup> Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 185.

Companies usually pay all or most of the health insurance premiums and other employees only a small part of the premium. In the market of individual insurance employees themselves pay the entire amount of premium (Eng. Premiums) insurance.<sup>5</sup>

Figure 2. The financing of the health system in the U.S



Source: Kao-Ping Chua (2006) overview of the U.S. Health Care System, AMSA Jack Rutledge Fellow, page. 4.

In the US, private doctors charge their services directly, using the method of direct billing services. By this method of payment is organized whole primary health care with the emergency services and hospital outpatient clinics. Public health institutions that implement preventive health care are funded from local budgets. Hospitals are organized as state institutions, as well as institutions of philanthropic organizations or voluntary agencies and health insurance as a private for-profit institutions (Škrbić, 1978:125).<sup>6</sup> In the United States there has also been a trend that doctors who work in hospitals, work in private practices as well, in order to maximize their income. In USA prevention attaches special attention. The proper prevention can reduce the number of affected people by making the insured to pay attention to their health and if they notice symptoms of certain diseases immediately begin to remediate in order not to develop into something more dangerous to health that will require medical care and visits to hospitals and doctors, and therefore the cost. Several savings that can be achieved if adequate prevention is applied are listed below.

Center for Disease Control and Prevention (2011) in the United States highlights the importance of prevention in several forms:

- Each prevented infection with HIV means savings of \$ 350,000;
- Reduce the prevalence of the risk of high blood pressure by 5 % would save \$ 25 billion over a period of five years;
- Every dollar invested in outpatient education corresponds to savings of hospital costs 2-3 USD,
- For every dollar invested in the prevention of diabetes among women, saves \$ 1.86;
- Medical costs reduced by approximately \$ 3.27 for every dollar invested in health promotion in the workplace.<sup>7</sup>

## 2.5. THE HEALTH SYSTEM IN THE REPUBLIC OF CROATIA

The health system since the founding of the Croatian state moves through changes, so it came up today, better organized, more centralized, better funded and more efficient system in relation

<sup>5</sup> Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 186.

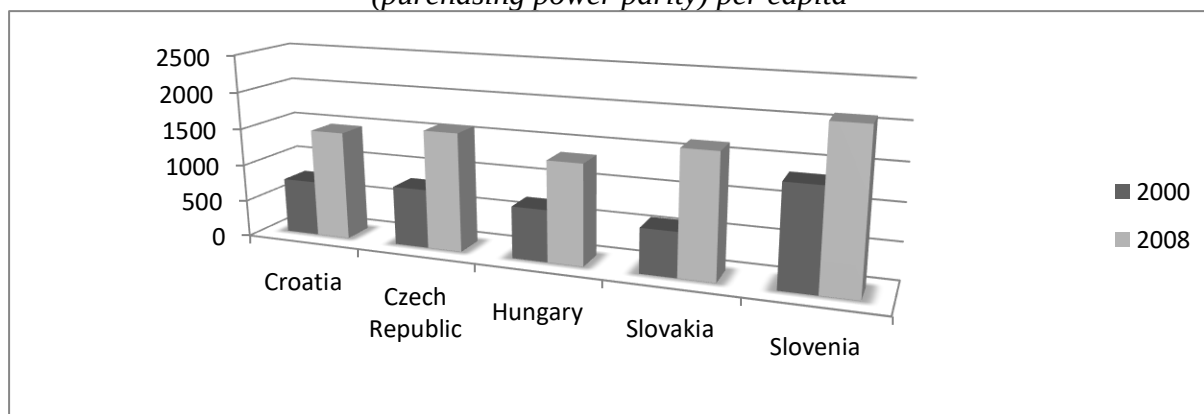
<sup>6</sup> Marković, B., Vukić, S. (2009) Modeli organizacije i financiranje zdravstva u odabranim zemljama. *Ekonomski Vjesnik / Econviews : Review of contemporary business, entrepreneurship and economic issues*, Vol. XXII, No. 1., str. 186.

<sup>7</sup> Dukić, N., Živković, I. T., Živković, S. (2015) Ekonomsko vrednovanje na strani ponude i potražnje – ključ alokacije resursa u javnom zdravstvu. *Ekonomski pregled*, 66(2), str. 182.



to the very beginning. It can be said that the standard of health care in the Republic of Croatia is satisfactory, but visible to the higher quality of health services in the areas of cities and in areas of major sites, and on the other hand is seen as limited standard on islands or remote areas of the city. The Ministry of Health (MoH) in Croatia has the role of manager of the health care system with wide powers. This includes management of legislation in the field of health care, budgeting, monitoring health status and health needs, education of health care professionals and overseeing the process of reform of the health system in Croatia. In 2012, the Croatian Government adopted the National Strategy for the Development of Health from 2012 to 2020, which is a document that shows which direction should develop health of the Republic of Croatia in the mentioned period. Since the European Union has strict laws concerning the financing of projects in the health sector, the adoption of the National Strategy for Health was a big and important step. The national strategy includes plans that should help to build more efficient health care system, but also help in terms of its financing, since there are many sources from which it is funded health care system. The Croatian health system according to the characteristics it possesses, is closest to Bismarck model of financing the health care system, although uses a combination of Bismarck and Beveridge model of financing the health care system. It is based on the principle of solidarity employed people from their income separate part that is used in the financing of health care of the entire population. Since it is a model of compulsory social health insurance, there are contributions that vary depending on the country where is it paid. In Croatia, the contribution rate is 13 %, and the rights of insured persons mostly include everything, including most of the cost of treatment and medicines that are needed in the treatment process. The problem faced by the Republic of Croatia's spending on health, since the health care consumes a large part of the gross domestic product. To the consumption of the Croatian on health in the period from 2000 to 2008 in relation to the Czech Republic, Hungary, Slovakia and Slovenia.

*Chart 1. Spending on health care 2000th to 2008th PPP  
(purchasing power parity) per capita*



Source: Kovač, N. (2013) Financing health care - the situation in Croatia. *Economic News*, Year. XXVI, Br.2/2013, page 555.

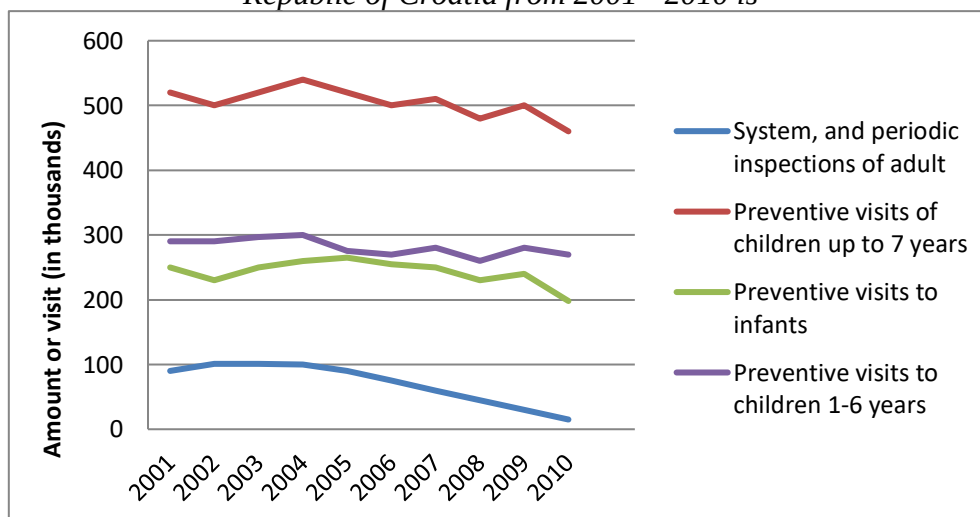
The chart first shows that in the range of 2000 to 2008, per capita consumption has increased, however, to certain policies should affect the rationalization of the health system and the gradual reduction of public expenditure on health services. Therefore, it is important to conclude that the issue of liquidity of the health system and related problems in the system were significantly lower when you achieve a better macroeconomic performance of the Croatian economy.<sup>8</sup> The fact that the Croatian Health spent more than countries with similar levels of

<sup>8</sup> Kovač, N. (2013) *Financiranje zdravstva – situacija u Hrvatskoj. Ekonomski vjesnik*, God. XXVI, Br.2., str. 555.

income, with the lack of any apparent effect on the health of the population, suggesting that there is scope for improving cost efficiency in spending, and through reallocation in two directions.<sup>9</sup> The first direction shows that a lot more attention should be given to the so-called public health programs that encourage prevention and health pro-active behavior. Croatia and its people face the problem of the typical health problems of older companies that have medium income, and is faced with chronic diseases related to lifestyle that lead. A large number of people die very young, killed in accidents or unable to act in time to disease, or at such time as decided to react but too late. In order to reduce the number of such situations it is necessary to educate the population as well as health care providers, to become aware of the problem to the public, encourage the use of prevention programs that can save someone's life.

An excellent example of the positive steps that Croatia has made was increasing taxes on tobacco products, ban their advertising and prohibition of smoking in certain public places. In support of the implementation of this direction and go the following data shown in Figure 3. Although Croatia has already implemented some prevention programs, which will be discussed later in this paper, it is not enough and there is still much room for improvement. Figure 3 clearly shows a continuing decline in the use of services of systematic, periodic inspection and preventive visits and review of the activities of general medical practice and health care of infants and young children in the Republic of Croatia in the period 2000 - 2010.

*Figure 3. Number of systematic, periodic inspection and preventive visits and review the activities of general / family medicine and health care of infants and young children in the Republic of Croatia from 2001 - 2010 is*



Source: National Health Development Strategy 2012th to 2020th year. The Croatian Government, the Ministry of Health of the Republic of Croatia, September 2012, page 36.

The national preventive health programs are focused on the early detection of various diseases and / or early detection of complications of certain diseases in order to ensure a higher quality of life of the individual and the extension of life expectancy.

Key prevention programs in Croatia are:

- Preventive activities at the level of primary health care,
- Prevention and early detection of breast cancer,
- A national program for early detection of colon cancer,

<sup>9</sup> *Financiranje javnog sektora, reforma zdravstva i mirovinska reforma u Hrvatskoj*. [online] Dostupno na: <http://hrcak.srce.hr/file/47060> [01. rujna .2015.]

- A national program for early detection of cervical cancer,
- A program of compulsory vaccination in Croatia,
- Croatian national program for prevention of HIV / AIDS 2011 - 2015,
- The national program for control of antibiotic resistance in the period of 2009 - 2014,
- National Preparedness Plan for Influenza Pandemic,
- Combating tuberculosis and the TB laboratory at the required level biosafety,
- System for the prevention and treatment of addictions and mental health in the county institutes for public health,
- Program to promote breastfeeding in Croatia,
- A program of protection against domestic violence,
- Injury prevention in children,
- Prevention of suicide among children and young people,
- A program of psychosocial support to the children's oncology department,
- Prevention of overweight,
- A national program of health care for persons with diabetes,
- National Programme for Roma.<sup>10</sup>

Another direction requires strengthening the role of primary care. Not only that primary care can reduce unnecessary expenditure applying more expensive secondary and tertiary care, but also to contribute to the implementation of prevention programs.<sup>11</sup> It is necessary to invest in equipment, hospital, clinic, provide paramedical personnel in case of need. In addition to the public, it is possible to get, more recently, the services of the private health sector. A constant problem is the financing of the health system as it creates huge costs incurred by citizens in a growing area. Additional insurance plays an important role in the health system of the Republic of Croatia. Users supplementary insurance, which today can be arranged even in the bank, used benefits such as lower drug prices, free review, a certain part of free searches and the like. Mihaljek<sup>12</sup> conducted a study in 2006 in which he stated several health risks that can be prevented in Croatia, are very high. Unfortunately, the survey today certainly would not be much different from the following information, since prevention is still a topic that does not get enough attention. According to Mihaljek first risk is obesity. He states that nearly a quarter of adults are obese, which is twice the EU average. Another risk is smoking, which is recorded Prevalence of smoking among women and students (even 19 % of boys and girls aged 13-15 years). The third risk is the consumption of alcohol, where Croatia is heading 25 % above the EU average, which implies the fact that the mortality rate from diseases caused by excessive consumption of alcohol is very high. The fourth risk is the prevalence of physical inactivity which is very high. According to the World Health Organization, in 2003 47 % of Croatian men and 51 % of women were physically active enough. What is needed is to create a deeper awareness of prevention and how it can be helpful, both for users of insurance and for insurance providers. Additionally, Croatia is also struggling with the problem of the emigration of young doctors in other countries of the European Union, leading to labor shortages in hospitals. Because of the adverse conditions young people are looking for "a better tomorrow" in developed countries, leading to a reduction of young working population and more elderly population will not have a replacement when it goes into retirement. Kurjakov writes about the correlation of health and poverty, and that poverty is one of the most influential factors for ill

<sup>10</sup> Nacionalna strategija razvoja zdravstva 2012. – 2020. Godine. Vlada Republike Hrvatske, Ministarstvo zdravlja Republike Hrvatske, rujan 2012, str. 41

<sup>11</sup> *Financiranje javnog sektora, reforma zdravstva i mirovinska reforma u Hrvatskoj*. [online] Dostupno na: <http://hrcak.srce.hr/file/47060> [01. rujna .2015.]

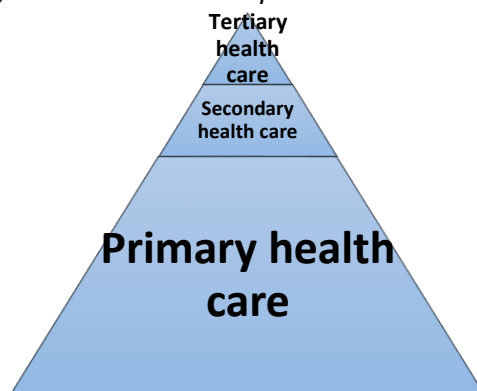
<sup>12</sup> Mihaljek, D. (2007) *Zdravstvena politika i reforma u Hrvatskoj: kako da se počnemo baviti uzrocima, a ne simptomima problema?* [online] Zagreb: Institut za javne financije. Dostupno na: <http://www.ijf.hr/newsletter/31.pdf> [12. kolovoza .2015.]

health, and ill health in a vicious circle can lead to poverty. He says he proved that education is the best way to interrupt this circuit. The disease reduces the ability to acquire new knowledge and quality of life, has a negative impact on productivity and depletes family supply. The poor are more exposed to risk factors of the environment and less ready to fight them, and since they are less informed about the benefits of healthy living, and that they are less accessible quality health care, are at greater risk of contracting the disease and damage. Analyzing the image of health Ropac<sup>13</sup>, from 2012, has led to interesting results. After the completion of image analysis of health in counties and selecting public health problems are determined by the priorities of the county:

- a) injury: Zagrebačka county, Primorsko-goranska county
- b) alcoholism: Varaždinska county, Bjelovarsko-bilogorska county, Krapinsko-zagorska county
- c) mental health: Dubrovačko-neretvanska county, Vukovarsko-srijemska county, Osječko-baranjska county, Primorsko-goranska county
- d) inadequate care for the elderly (assistance and care at home): Dubrovačko-neretvanska county, Vukovarsko-srijemska county, Bjelovarsko-bilogorska county, Primorsko-goranska county
- e) unemployment: Vukovarsko-srijemska county, Bjelovarsko-bilogorska county, Krapinsko-zagorska county, City of Zagreb

Many continental European countries, as well as Croatia, use the model of social security, in which funding for health care - but also for pensions, unemployment and other social risks - comes mainly from compulsory contributions paid by employees and employers.<sup>14</sup>

Figure 4. The pyramidal structure of the Croatian Health System



Source: Gorjanski, D. (2009) *Is Croatian health system - the system ?*. Osijek Matica Croatian branch of Osijek, page 155.

On Figure 4 pyramidal structure of the Croatian health system can be seen. The shape of the pyramid was chosen to show the difference between the frequency of use of health care, not as tertiary protection of the most important, or maybe it is a kind of protection is better than another, and so on. As can be seen in Figure, primary health care is the most common when using health care, followed by the secondary health care, and at the end of tertiary health care.

Health care at the primary level is provided through the activities:

- General / family medicine,
- Health care, pre-school children,

<sup>13</sup> Puntarić, D., Ropac, D., Savičević, A., J. (2015) *Javno zdravstvo*. Zagreb: Medicinska naklada, str. 49.

<sup>14</sup> Mihaljek, D. (2007) *Zdravstvena politika i reforma u Hrvatskoj: kako da se počnemo baviti uzrocima, a ne simptomima problema?* [online] Zagreb: Institut za javne financije. Dostupno na: <http://www.ijf.hr/newsletter/31.pdf> [12. kolovoza 2015.]

- Women's Health,
- Nursing health care,
- Home care patients,
- Dental health care (polyvalent)
- Sanitary-epidemiological health care,
- Preventive and educational measures for health care of school children and students,
- Laboratory Diagnostics,
- pharmacy,
- Immediate medical attention;

Health care at secondary level includes

- Specialist-consultative health care and
- Hospital care;

Health care at the tertiary level includes:

- The performance of the most complex forms of health care from specialist-consultative and hospital activities.<sup>15</sup>

### 3. FUNDING OF HEALTH CARE

Although the main areas of consideration of the health care system should be primarily focused on the treatment of people, it is now increasingly focused on the financing of the health system. "How many people, so many whims," says an old saying. Consequently, how many different countries, so many different needs for different systems of funding depending on the economic, social, demographic situation observed country. Throughout history and health reform developed the three most important models that have left an impact on many countries of the world, and are used today. The remainder of this paper will further explain the three most widely used systems of financing health care, and they are Bismarck, Beveridge model and market model. On Figure 5, a brief overview of the characteristics of the model of health care financing can be seen.

*Figure 5. The characteristics of the different models of health care funding*

| Model     | Coverage  | Financing         | Kontrol  | Status          |
|-----------|-----------|-------------------|----------|-----------------|
| Beveridge | universal | tax               | public   | social services |
| Bismarck  | universal | social insurance  | combined | social law      |
| Market    | partial   | private insurance | private  | insured risks   |

Source: Kovač, N. (2013) Financing health care - the situation in Croatia. Economic News, Year. XXVI, Number. 2, page. 553.

#### 3.1. Bismarck model

Bismarck, is based on compulsory, universal social insurance and is characteristic for most countries of continental Europe, and it was first introduced in 1883 in Prussia (now Germany), according to the Chancellor Otto Von Bismarck.<sup>16</sup>

Bismarck model works on the basis of two principles, and they are as follows:

- The principle of solidarity
- The principle of reciprocity.

<sup>15</sup> Hrvatski zavod za zdravstveno osiguranje – Opis zdravstvenog sustava. [online] Dostupno na: <http://www.hzzo.hr/zdravstveni-sustav-rh/opis-zdravstvenog-sustava/> [12. kolovoza 2015.]

<sup>16</sup> Kovač, N. (2013) *Financiranje zdravstva – situacija u Hrvatskoj*. Ekonomski vjesnik, God. XXVI, Br.2, str. 553.

The system is financed through special taxes or contributions paid by the active population. All funds collected in the Health Insurance Fund and will be used to further protect the population.

Advantages of Bismarck model can be noticed through the following items:

- Achieved a high level of service,
- Increase customer satisfaction,
- Independence.

The main disadvantage is the possibility of the rise of a large number of unemployed, which would overburden the system of pension payments (reductions in the number of people who collect funds, and increased the number of users). In line with the increase in the scope of health insurance, there is also the problem of moral hazard when users use excessive medical services, although there is no objective need for them. Over time, increases the tax burden on the population to cover the costs of excessive use of health services. Consequently appears the inequality in funding because the direct payments affect people with lower incomes.

### 3.2. Beveridge model

Beveridge model was created in the UK after World War II. (1948) according to Lord William Beveridge. This is a model in which health care is financed from taxes paid by all citizens. This includes direct taxes paid by individuals and businesses, and indirect taxes from the sale of goods and services. The state determines how much money each individual citizen has to pay, and after money is collected money, state determines the amount that belongs to health.<sup>17</sup>

Advantages of the Beveridge model can be viewed through the following items:

- Wider access to health services,
- Fair distribution,
- An easy and efficient way to manage the large cost control.

However, there are also shortcomings of this model of financing health care, and can be viewed through the role of politicians in making budget. It is often in the background as his political power is not enough to ensure greater budgetary funds. In accordance with the growing costs of financing health care services, there is a need for private funding. Beveridge model is mostly used for high levels of efficiency, quality and cost control, ease of operation and wide availability to users.

### 3.3. Market model

The market model puts the emphasis on the market, private insurance and insured risks.<sup>18</sup> The system is based on the collection of premiums according to which individuals provide health care for a certain period. As this is a private funding, it can be divided into mandatory and voluntary.

The types of insurance in the market model:

- Compulsory private health insurance,
- Voluntary private health insurance,
- Personal account medical savings
- Direct payment of health care.<sup>19</sup>

Model of compulsory private insurance came to life only in the Netherlands, whereas the voluntary private health insurance is the most used in the United States. For personal medical savings account contributions for individuals to pay a certain percentage in order to gain access

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<sup>17</sup> Kovač, N. (2013) Financiranje zdravstva – situacija u Hrvatskoj. *Ekonomski vjesnik*, God. XXVI, Br.2, str. 553.

<sup>18</sup> Kovač, N. (2013) Financiranje zdravstva – situacija u Hrvatskoj. *Ekonomski vjesnik*, God. XXVI, Br.2, str. 553.

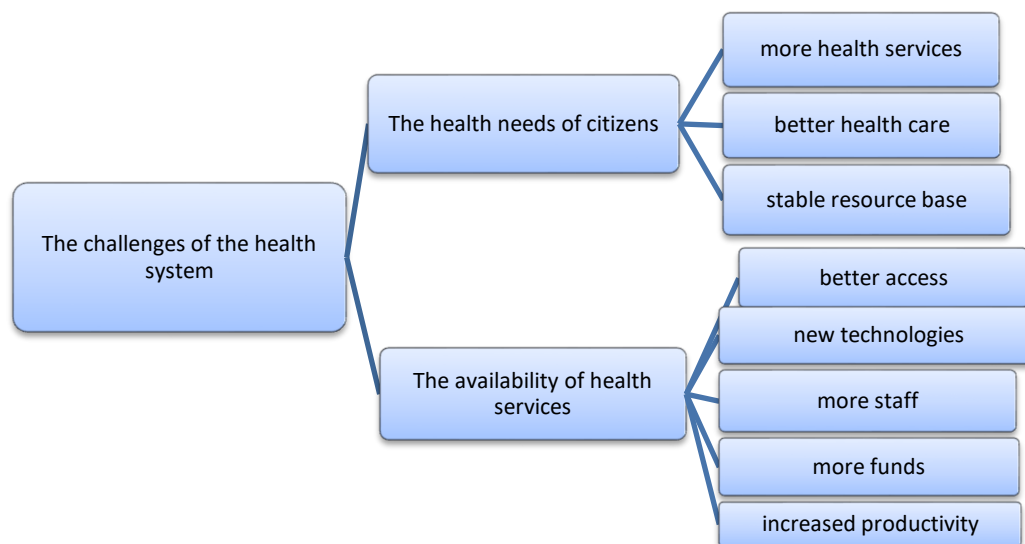
<sup>19</sup> Kovač, N. (2013) Financiranje zdravstva – situacija u Hrvatskoj. *Ekonomski vjesnik*, God. XXVI, Br.2, str. 554.

to a greater number of services if they need them. The biggest drawback is the injustice of the system and administration. Direct payment of health care for a certain amount leads to immediate medical examination in a very short period of time.

#### 4. COMPARISON OF FINANCING HEALTH SYSTEM IN CROATIA AND THE WORLD

As the opinions change from day to day, probably the best solution is to combine the models by taking positive characteristics from each one, or those that correspond to individual countries, and would be rejected by some who do not favor the situation.

Figure 6. The challenges of modern health care system



Source: *Models and structure of health care system* [online] Available on: <http://www.zzzjlsz.hr/wp-content/uploads/2014/10/Modeli-i-struktura-zdravstvenih-sustava.pdf> (30th August 2015.)

As seen in Figure 6, which shows the challenges of the health system, it faces the problem of harmonizing the needs of citizens and availability of health services. The health needs of the citizens include more health services, better health care and a stable resource base, and a stable base of medical and nursing staff that need to be available. On the other hand the availability of health services requires better approaches, use of new technologies, more trained staff, more resources and increased efficiency. It is necessary to harmonize the two aforementioned sides to the health care system benefited and provided adequate protection measures and adequate health care, or to the health needs of citizens were satisfied.

Croatia used a combination of two models of financing the health system, namely a combination of Bismarck model and the Beveridge model. Bismarck model of financing health care system is based on the principle of solidarity of people employed. Busy people separate part of their own income. That is the model of compulsory social health insurance, however, contributions occur. The amount of the contribution varies depending on the country. For the Croatian, the contribution rate is 13 %. Supplementary health insurance offered to the insured, the amount of 70 Kuna per month, greatly reduces the cost of the insured during doctors visits and offers a number of benefits and free services that can be used. The question is whether this system is most effective for the Republic of Croatia?

When analyzing the Croatian health care led to the identification of five areas of strategic problems in the Croatian health care, and they are:

1. Poor connection and lacking continuity in health care
2. Uneven or unknown quality of health care
3. Insufficient efficiency and effectiveness in the health system
4. Poor or uneven access to health care
5. relatively weak health indicators.<sup>20</sup>

Among them the one that applies to the method of financing health care is the lack of efficiency and effectiveness in the health system. It can be said that there is a lot of space for improvement; to improve efficiency and effectiveness, in the Croatian health care. Health expenditures are very large and continuously growing. A potential problem is the lack of transparency in the financing of health care. It is necessary to plan and analyze the current situation in order to adequately manage new changes and currently problematic areas. Expenditure on medicines are disproportionately high and often unfair because there is no functional process of health technology assessment is not a sufficient number of high-quality clinical guidelines. Payment deadlines are too long.<sup>21</sup> There is much room for improvement in order to provide better services to policyholders, the people who provide health services, and the way in which health system operates.

#### **4.1. Comparison of natural indicators monthly average in 2014 with months of 2015**

Since the establishment of the hospital from 1942 to the present, persistently monitor the development of all areas of medicine, create their own standards, introducing new procedures for the treatment of which are in our country and around the world, accepted and implemented in regular use. University Hospital Center Zagreb is the central and for many medical procedures a single hospital corporation in the Republic of Croatia. For the treatment and care of patients daily care 4,024 health workers. There are 84 health assistants, 716 employees for technical support and 363 administrative employees.<sup>22</sup> The most important natural indicators are shown in the following charts (Clinical Hospital Centre Zagreb).

*Chart following on the next page*

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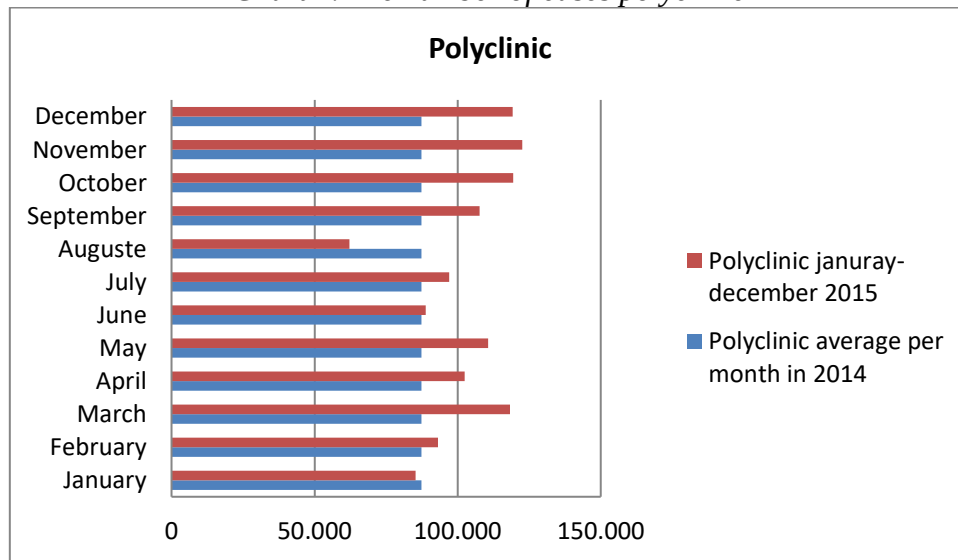
<sup>20</sup> Nacionalna strategija razvoja zdravstva 2012. – 2020. Godine. Vlada Republike Hrvatske, Ministarstvo zdravstva Republike Hrvatske, rujan 2012, str. 62.

<sup>21</sup> Nacionalna strategija razvoja zdravstva 2012. – 2020. Godine. Vlada Republike Hrvatske, Ministarstvo zdravstva Republike Hrvatske, rujan 2012, str. 64.

<sup>22</sup> Klinički bolnički centar Zagreb [online]. Dostupno na: [http://www.kbc-zagreb.hr/o\\_nama](http://www.kbc-zagreb.hr/o_nama) [9.lipnja 2016. ]



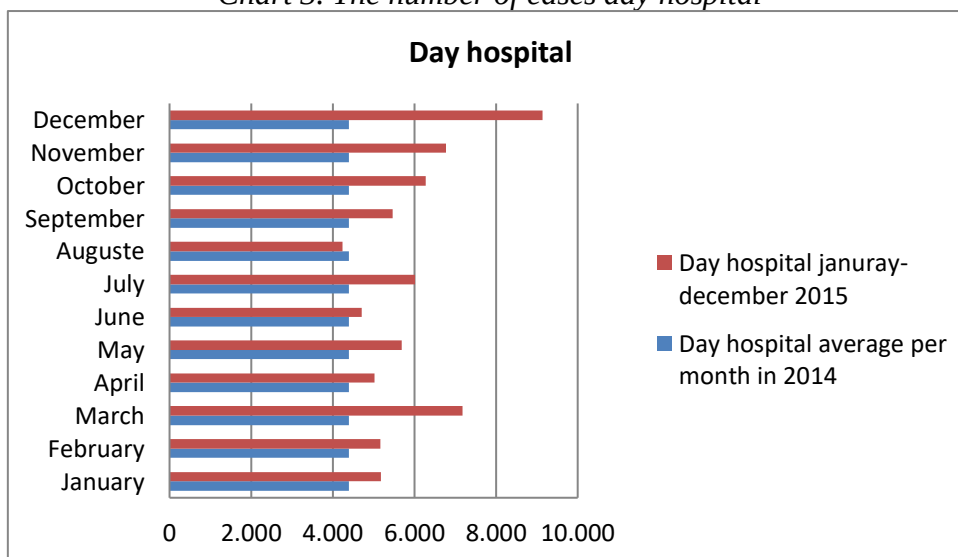
Chart 2. The number of cases polyclinic



Source: Personal research

The trends of increasing or decreasing the number of cases clinics vary widely through the first three quarters, while in the fourth quarter best results are shown. If each month individually compared with the average monthly 2014, the best result in each case reached in November (122,536) slightly weaker in October (119,435) and December (119,132). However, in August, is extremely small number of cases with regard to the year 2014 and other months of 2015 and amounted to only 62,205 cases. Number of cases of clinic should be increased to 140,000 cases per month, which would ultimately lead to a greater realization of monthly income in the amount of 13 %.

Chart 3. The number of cases day hospital

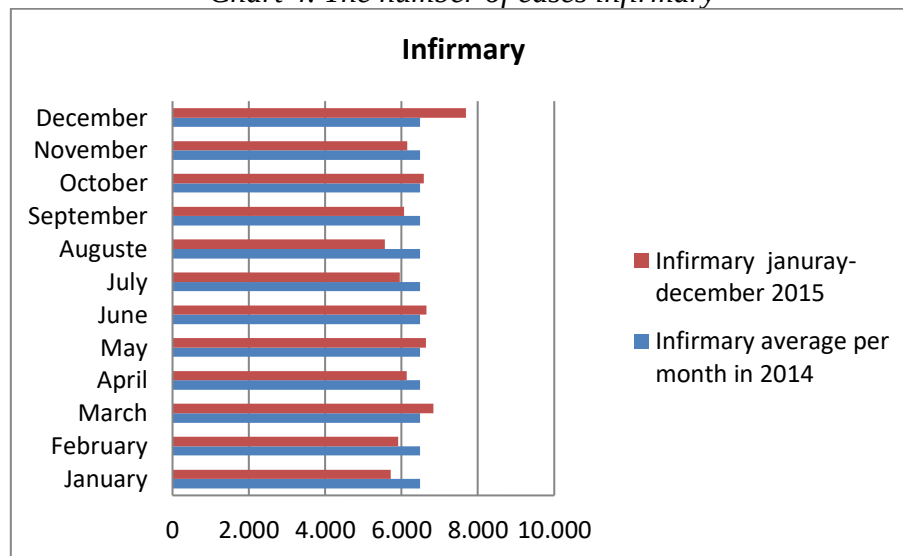


Source: Personal research

The analysis of the number of cases on an outpatient basis are best in March, May, July, October and November compared to the monthly average in 2014, with the exception of December, which again significantly stands out from the number of cases of all the other months of 2015 and 2014. August recorded negative results.

Moreover, August also has the worst results after considering all the months of 2015. The number of cases of daily hospital that would increase income in the amount of 8 % should be more than 10,000 cases per month.

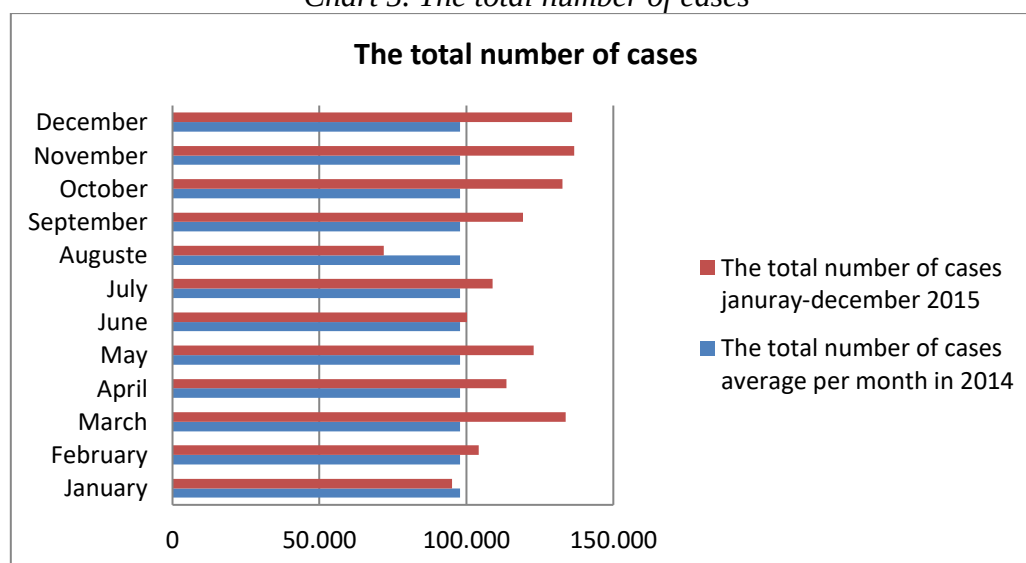
Chart 4. The number of cases infirmary



Source: Personal research

Number of inpatient cases recorded the highest growth compared to 2014 in December in which is (7681) while the number of inpatient cases was not significantly higher only in March, but in May and June compared to the year 2014. In parallel with these four months other months 2015 recorded a negative trend in relation to the number of cases of inpatient 2014. August recorded the highest decline at just 5,557 cases. The number of cases in the infirmary should increase up to 9,000 cases per month in order to raise the monthly income of 17 %.

Chart 5. The total number of cases

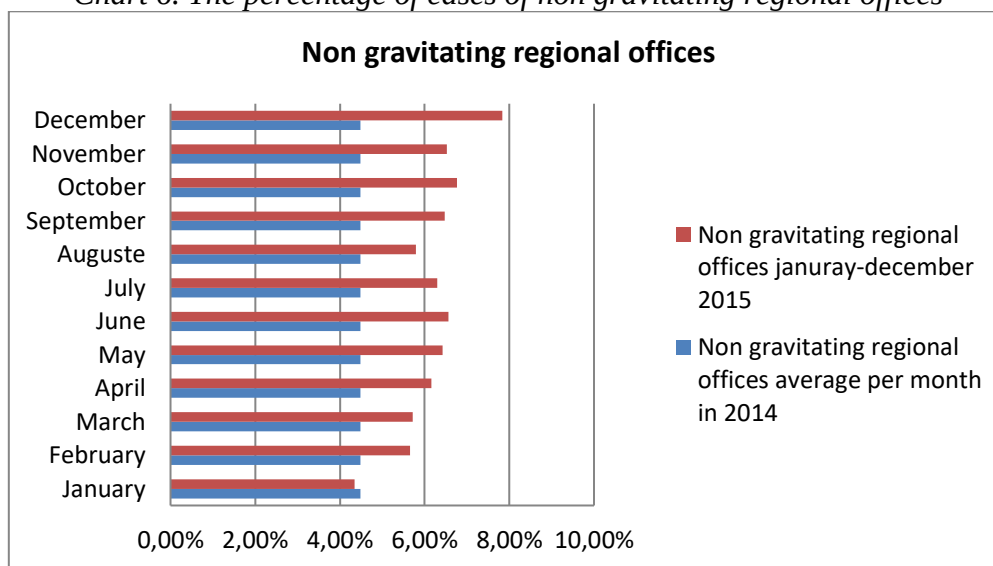


Source: Personal research

Chart No 5, in the analysis of the total number of cases, and with regard to the previous individual analysis of each parameter, the obvious is above-average growth in March, October, November and December. If compared with a monthly average of 2014, the result is positive.

In previous analyzes ,completed in August , the most negative results by the number of cases in hospital, clinic and day hospital are recorded. Total number of cases per month should increase up to 158,000 cases that would ultimately increase revenue monthly to 38 %, which would lead to the positive operating of Clinical Hospital Centre Zagreb and that should be management's main target.

*Chart 6. The percentage of cases of non gravitating regional offices*

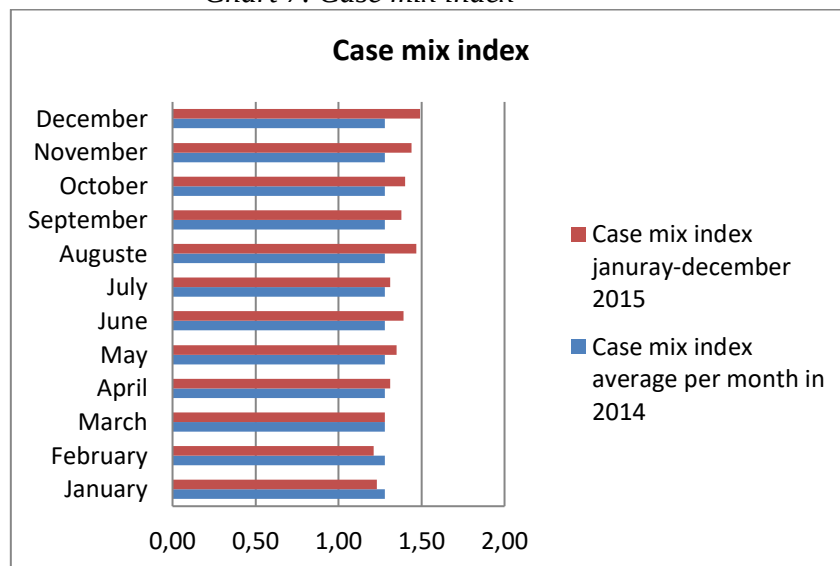


Source: Personal research

Comparing trends percentage of cases of regional offices per month in 2014 to 2015 is noticeable trend of increasing cases from February to September 2015, which is a negative phenomenon due to the percentage of cases of regional offices should be as small as possible. In the first quarter of 2015. The percentage has regularly been below 6 % in January, even 4.34%. In the second quarter going to the negative trend of increasing to 6.56% in June, but in the third quarter again comes to a decline in August, which recorded 5.80%, while in September again rising to 6.48%. Overall, in the first quarter trends were significantly better in the second quarter and third quarter. Compared to last year, in the second quarter and September there is a negative trend of increase in April so the percentage of cases is approximately 6.16%, 6.43% in May, in June, 6.56% in September and 6.48% in December reaches its highest increase at 7.83%, while last year's monthly average was 4.48% . Lowering number of cases of regional offices would reduce costs on a monthly basis in the amount of 3%.

*Chart following on the next page*

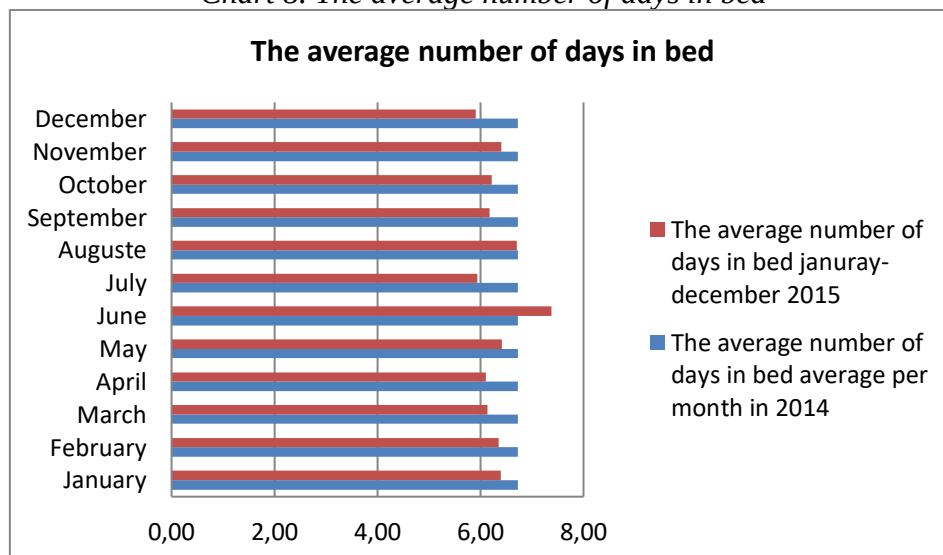
Chart 7. Case mix index



Source: Personal research

In the first quarter of 2015, notes the very negative trend of relatively low case mix index compared to the year 2014. However, compared to the proportional increase in case mix index for all three months of the second quarter results in July are not at a satisfactory level and significantly decreased. The positive trend continues in August, so that the value of case mix index in August will receive 1.47 while in September again fall on 1,38. In last quarter there is again increasing and in December recorded the highest amount of 1.49. It should be noted that the value of case mix index in August and December, significantly higher than the monthly average in 2015.

Chart 8. The average number of days in bed

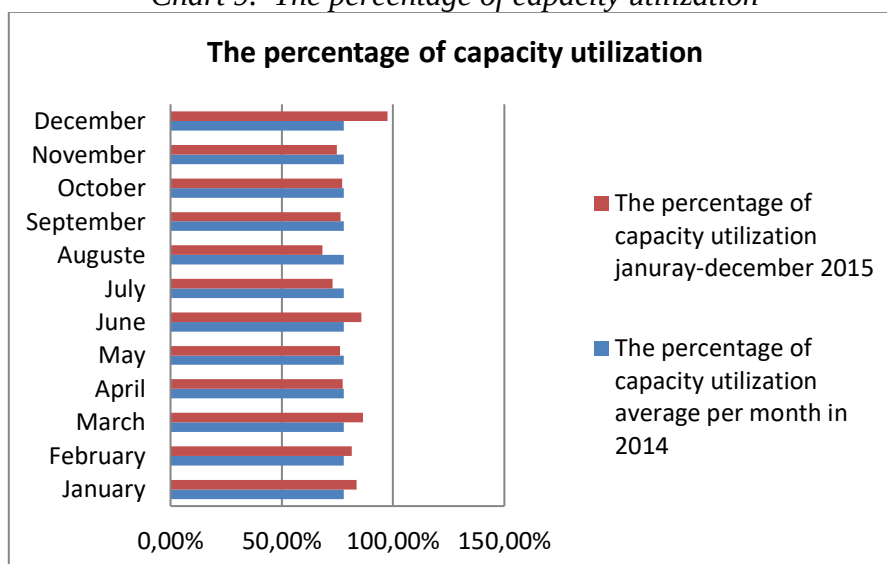


Source: Personal research

The relative downward trend of the average number of days in bed spread throughout all months of the first, second, third and fourth quarter of 2015 compared to the average monthly 2014. Rebound from these trends occurs in June which can be connected with the growing number of cases in the infirmary in the second quarter of 2015. With the exception of June, by comparison with the year 2014 the average number of days in bed declines.

The negative trend of increasing the average number of days lying in June, is also present in August. However, the average number of days in bed in August can not be associated with an increase in the number of cases in the hospital given that it also recorded a negative trend, and the number of cases is significantly decreased in August. The hospital should reduce the average number of days in bed at 4.5 days, which would thereby increase efficiency, reduce costs for the individual patient and increase patient turnover per bed, which would ultimately contribute to better business success of hospitals for 9 %.

Chart 9. The percentage of capacity utilization

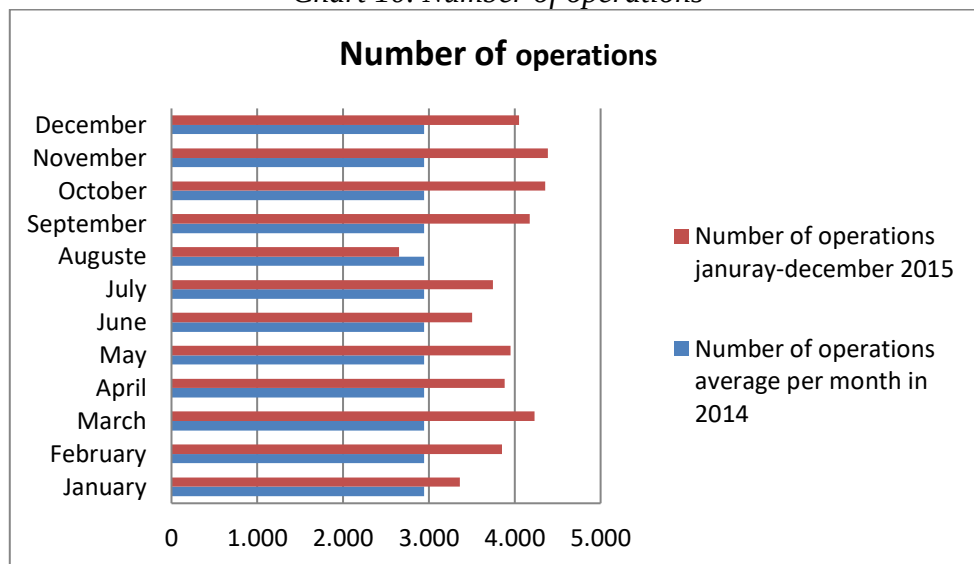


Source: Personal research

By individual comparison with each month of the biggest difference is obtained in relation to the year 2014 in December, which is the percentage of capacity utilization result of the largest number of cases at the KBC in that month. Also, a negative difference of 15 % compared to June also predicts the beginning of the negative trend. As predicted, the negative trend continued in July and August in which the percentage of utilization falls below 70 %. In this month's rate of capacity utilization at the lowest level in relation to all the months of 2015 and on average per month in 2014 is particularly noticeable difference compared with January, March, June and December 2015. To increase the income rate of capacity utilization should have the amount of 100 % with which the hospital would use its full capacity.

Chart following on the next page

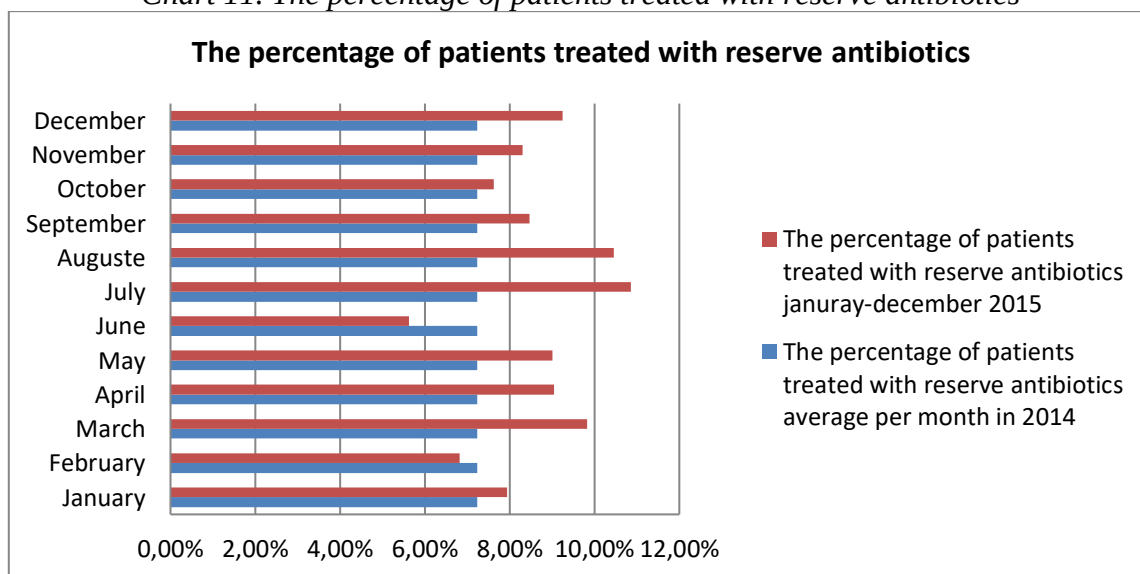
Chart 10. Number of operations



Source: Personal research

The number of operations in 2015 compared to the monthly average in 2014 increased significantly. The highest growth was recorded in November, when it stood at 4,385 for surgery or 48.94%, the number of operations increased but average per month in 2014, slightly less was reached in October, when the number of operations was 4,355 or 47.92% more than the monthly average in 2014. Other months in 2015 largely stagnated around 3800 operation which is also significantly better than compared to a monthly average of 2014 as with all other parameters, and in the analysis of the number of operations, August is completed with much smaller operation than the previous months of 2015. The negative difference reaches up to 1,000 operations less depending on the month to which it is compared to 2015, while compared to the monthly average in 2014 amounted to 300 operations less.

Chart 11. The percentage of patients treated with reserve antibiotics

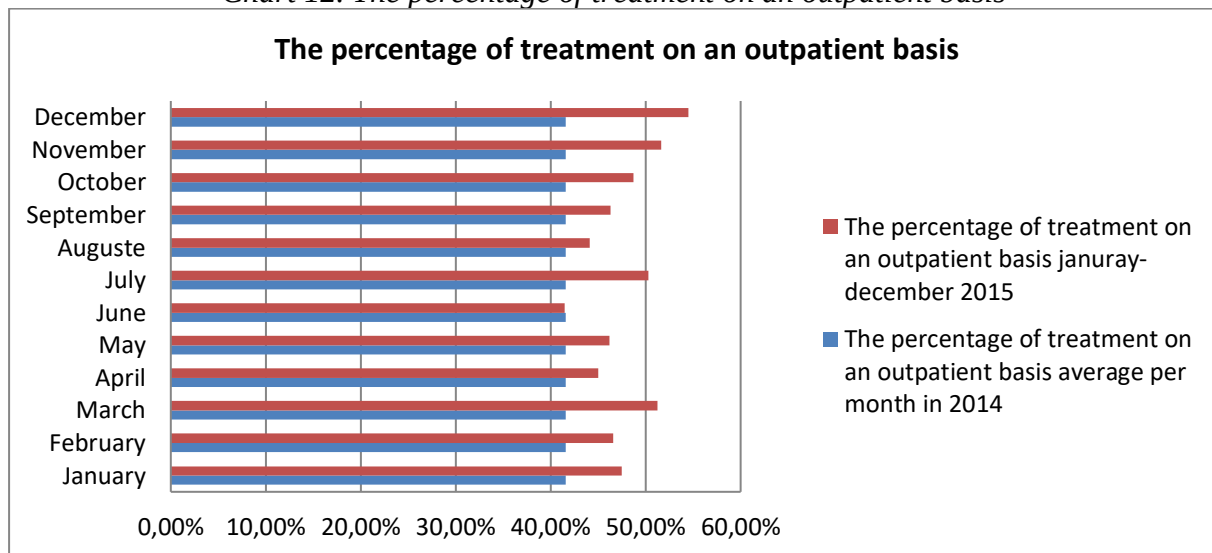


Source: Personal research

In January, February, June, July, August and October, the percentage of patients treated with reserve antibiotics is not in satisfactory parameters of 8 % - 10 %. Negative results were obtained in July is even greater if one takes into account the fact that through all three quarters

of 2015, with the exception of the January, February and June percentages were within a satisfactory framework. While average per month in 2014 the percentage of patients treated with reserve antibiotic was not satisfactory parameters and amounted to 7.23%. The parameter is set by CIHI and if within acceptable limits, generate income 700,000 kn for each month that are located in these parameters.

*Chart 12. The percentage of treatment on an outpatient basis*

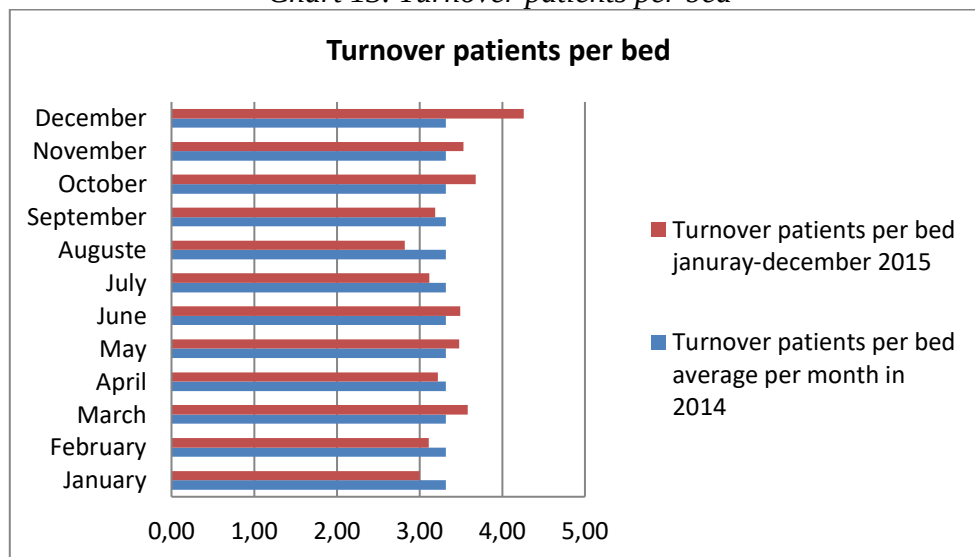


Source: Personal research

In every month of 2015 except June and August, the percentage of treatment on an outpatient basis is limited to the set standards according to which it should be greater than 45 %. However, December slightly deviates from the restrictions with slightly more than 54 %. By comparison with the average month in 2014 noted the positive trend of increasing default limit of 45 %. In August comes back to the negative changes, including the percentage of treatment on an outpatient basis falls below 45 %, which is not in accordance with the specified standards, but it is also more than it was a monthly average of 2014 parameter set by CIHI and if it is in acceptable limits, generate income 700,000 kn for each month that is in these parameters.

*Chart following on the next page*

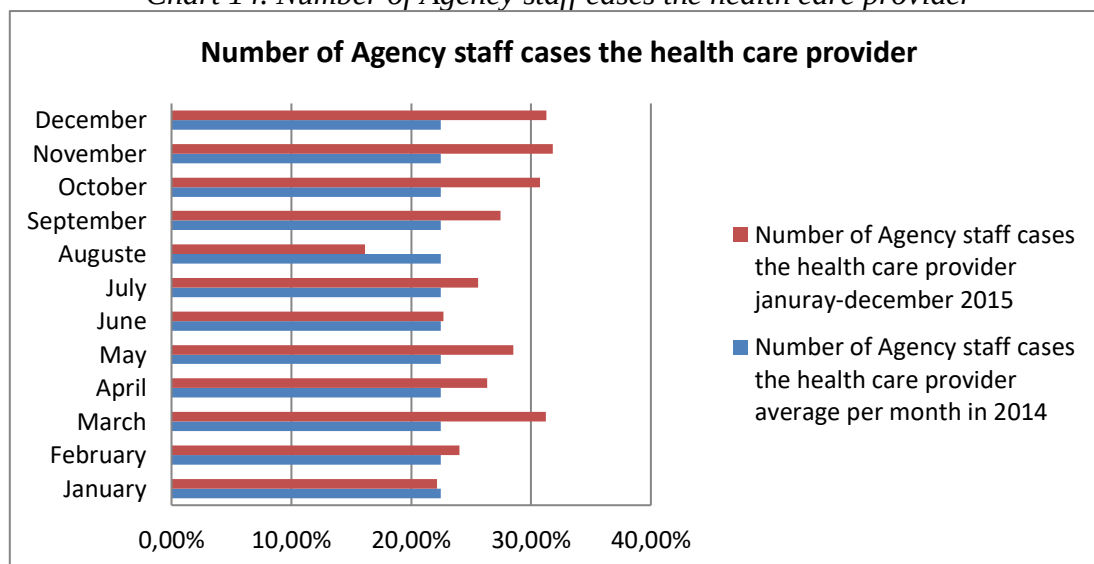
Chart 13. Turnover patients per bed



Source: Personal research

As a result of the large number of cases within the parameters of day hospitals, dispensaries and clinics, parameter turnover of patients per bed through all the months of 2015 recorded results which are much higher than the standards and slightly higher than the monthly average in 2014. In particular, in December, given the above-average number of cases, and achieved the highest turnover of patients per bed. However, comparing the January, February, April, July, August and September, regardless of the positive results, the looming negative trend compared to the average monthly 2014. The parameter is set by CIHI and if within acceptable limits, generate income from 700,000 kn each month contained in these parameters.

Chart 14. Number of Agency staff cases the health care provider



Source: Personal research

By comparing the number of cases by the Agency health workers in 2015 compared to the monthly average in 2014 notes that the Agency parameter number of cases per health care provider in most months of coming out of the set standards. Only in January and June of parameter reserves within the specified standards, while in July again climbs to 25 %, which is 3% more than the previous month, which is done by default standards. In August, the number



of cases the Agency by a health care professional most fell of all months compared to the year 2014 reached just over 15 % which is far less than the set standards that are set at the level of 21 % - 22 %. In September, there is an increase of 11 % compared to August and continues to the number of cases by the Agency mental health worker is not within the specified norms. The last quarter recorded the highest growth in specifically related to the previous months except March and is still the number of cases by the Agency mental health worker is not within the specified norms.

## 5. CONCLUSION

The purpose of the health care system is to serve its citizens in order to have a better quality of life. In order to be available to everyone and function properly, it is necessary to design and implement a system that suits the conditions in which the country, which it applies, is located. There are three most used models to be used in financing the health care system, and they are the Beveridge model, Bismarck, and the market model. All three models are used around the world, and are often used in combination. Beveridge model has universal coverage, financing is done through taxes and control the public, while the status of social services. The second model, Bismarck, has universal coverage, financing is done via social security benefits of the combined control and has the status of social rights. Third, market model, with the partial coverage, the financing is done through private insurance, while the status of insured risks. Croatia uses a combination of two models of financing the health system, a combination of Bismarck model and the Beveridge model. Bismarck model of financing health care system based on the principle of solidarity of people employed. Busy people separate part of their income that will continue to be used to finance health care for the entire population of the country. The health system is financed from different sources. All employed citizens and all employers are required to contribute to health insurance in Croatia. In addition, insured persons have the option of selecting additional insurance and the price of 70 Kuna per month, offers a number of free services as well as favorable service in case of major examinations, certain medications, etc..

According to the size of the share of public health expenditure in total consumption of health Croatia is one of the leading countries between transition countries. Croatia has a large expenditure on health, which increases every year, and causes an increase in expenditure may be required in different parts of health system..

There is a lot of room for improvement in Croatian health care, in order to provide better services to policyholders, that the Croatian health system is satisfied with the services provided by, the people who provide health services, and the way in which it operates.

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## SPACE WAR – A TECHNOLOGICAL AND MILITARY REALITY

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### **ABSTRACT**

*During the 2<sup>nd</sup> world war major powers realized that space can be a new battlefield as a lot of space exploration programs were carried out and thus with no intentions to further extend the war a Committee on the Peaceful Uses of Outer Space was created .A Treaty was created which claimed that outer space is the common heritage of mankind, not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. Space has gone from a realm of science fiction, to a virtual sanctuary where useful technology could be placed without fear, to a contested operational domain in ways that we haven't had to think about in the past. The last time the most powerful nations on the planet faced off was 70 years ago and the next great conflict as outer space - a domain that was unreachable to the militaries of 1945 which is now a technologic and military reality. All the major powers are in the quest of fuel which has left not even the space untouched. With the increasing presence of nations in space for energy needs, the conflict is about to arise. A lot has changed in the last 40 years, leaving existing legislation in dire need of updates that incorporate concerns such as property rights and the activities of commercial corporations This paper focuses on Technological advancement, space exploration , Future of Arms and Ammunition , laws on the following and various other aspects that could lead to a space war among the nations in the quest for the new energy, all the major powers has much to lose if the potential for conflicts in the space escalates further.*

**Keywords:** *Energy, Space explorations, Technology, Treaties*

### **1. INTRODUCTION**

Space has much to offer than just defense and civil purposes .It has abundance of resources, even bigger than our supply on earth, and a supply that could sustain earth for next few decades. With depletion of resources on earth, to sustain the human needs in the coming future, scientists are planning to drill the near earth objects in the outer space. The technology for the same is ready and hence space exploration isn't a thing of the future. It's now; and it's happening.

Space race began as a competition during the World War II between two super powers i.e. United States and the former Soviet Union and further escalated into a level which was more than a mere competition. This began with the former Soviet Unions' launch of the first artificial satellite "Sputnik-1" followed by the first human in space "Yuri- Gagarin".

The U.S soon understood it is no more the control of land, sea and air that could help them be the supreme power and noticed space as a new domain to command form. It was no later that the super powers had realized the extreme potentials and began the quest for exploring a land beyond earth. The first era of the space age was one of experimentation and discovery. Journey into space allowed them to take the first tentative steps toward operating in space while enlarging their knowledge of the universe. We are now on the threshold of a new era of the space age, devoted to mastering operations in this unexplored ground. The role for space, Space-based technology is revolutionizing major aspects of commercial and social activity and will continue to do so as the capacity and capabilities of satellites increase through emerging technologies. Space enters homes, business, schools, hospitals and government offices through its applications for transportation, health, environment, telecommunications, education, commerce, agriculture and energy. Much like highways and airways, water lines and electric

grids, services supplied from space are already an important part of the global infrastructures. Space-related capabilities help national leaders to implement their foreign policy and, when necessary, to use military power in ways never done before. Because of space capabilities, a nation is better able to sustain and extend deterrence to its allies and friends in our highly complex international environment. In the coming period, nations will conduct operations to, from, in and through space in support of their interests both on the earth and as well as space. In terms of the national capabilities in the aforesaid dimensions, a nation must have the capabilities to defend its space assets against hostile acts and to negate the use of space against its own interests. Intelligence collected from space remains essential for security within the borders and beyond.

Mastering near-earth space operations is still in its early stages. As mastery over operating in space is achieved, the value of activity in space will grow. Commercial space activity will become increasingly important to the global economy. Civil activity will involve more nations, international consortia and non-state actors. Defense and intelligence activities in space will become increasingly important to the pursuit of one's national security interests. Ignoring this issue would be a disservice to the nation in terms of its security and interests (Commission to assess United State National Security Space Management and Organisation, 2001). Conflict in space is not inevitable, and embracing strong international cooperation can reduce the threat of the same. However, the political reality is that asymmetric powers will pursue their own self interests, which increases the risk of armed conflict in space.

It is important to be prepared for unexpected events. Crucial to this preparedness understands how the rules of international armed conflict will be applied in space. International humanitarian law has been developed for land, sea, and air operations, and addresses specific differences of each of these environments. Space is drastically a different environment, and the law will have to be adapted to address specific issues relating to the same (Blount, 2011-12).

The Outer Space Treaty that entered into force in 1967 provides that "States parties to the treaty shall bear international responsibility for national activities in space". The implementing Space Liability Convention sets forth an absolute liability regime for damage caused by space objects on earth and to aircraft, and a regime based on fault for damage caused in outer space" (DESAUSSURE). Space tools are fundamental to meet the challenges of humanity and sustainable development and the overarching space security environment in its broader sense caters for global space governance. The space industry and actors have changed drastically in the last 40 years, leaving existing legislation in dire need of updates that incorporate concerns such as property rights and the activities of commercial corporations. (United Nations Office of Outer Space)

In the following paper we discuss the future aspects leading the major powers to conflict in the newly emerged domain which is space. This growing domain makes all the nations look forward to set up their base and satellites there. With the essential availability of resources and technology one can easily get dominance over the fourth dimension of war i.e. outer space. Explorations are happening and going to increase in the next few decades with this the presence of countries will also increase, thus with space being a busy hub we need proper peace treaties to curb the coming nuisance and have peaceful use of outer space. But it doesn't look like so. We further discuss the technological advancement for space exploration and militarization and weaponization of the space and what nations already have ached in it. The last war fought between the nations was 70 years ago and now if there is going to be any then it is surely in space, for space and from space. This paper is an attempt to further justify the growing importance and implications in this arena.

## 2. SPACE AS A DOMAIN

Geography has always played an important role in fighting a war and the rivalry between the world powers is already shaping the geopolitics of the 21st century. Control of the high ground has always been helpful in war, but with the changing times controlling the high ground means with better radar coverage, better intelligence gathering capability and better communications. In a battle field of highest mountains and adverse terrains, resupplying of ground forces becomes extremely difficult, making air superiority even more decisive than usual. The limits of normal tactical radios at high altitude have become obvious to American forces operating in Afghanistan; in the Himalayas, the problems would be even worse due to the fact that the peaks are higher and the valleys deeper, making it too easy for a ground unit, or even an aircraft, to move into a communications dead zone. In Afghanistan, the U.S has, to some extent got around this problem by using relay stations based on the ground, on aircraft and on drones, but even these relatively simple solutions have shown their limits. Relay stations cannot be everywhere; they are not responsive to quick changes in plans, and their placement can sometimes show the enemy where the U.S plans to send its troops. In this era of technology weapons of the best efficiency should be supported by space power, satellite navigation systems, space based reconnaissance and early warning systems. In case of a conflict or a situation like war, the side with the best array of surviving space assets would have a considerable advantage. If the fight is in the Indian Ocean, China would be more dependent on its space assets than India, which, thanks to geography, would find it easier to use UAVs and reconnaissance aircraft. (Dinerman, 2011) Weapons and warfare are likely to spread wherever humans go. And states will ultimately do whatever they believe to be in their self-interest. ((Retd), 2013) With success of space explorations on moon and other celestial bodies the powers of Earth have another reason to hunt the space in search of precious metals and future fuels.

Examples of the evolution of sea and air power reveal a striking pattern leading towards the weaponization of space and eventually in its exploitation ((Retd), 2013). The fact, however, that rivalries now extend into the Earth's orbit, simply shows how important space power has become to any 21st century conflict (Dinerman, 2011). By treaty, outer space is a weapon-free zone. In the future that might not be the case in defense establishment, including the Department of Defense as well as intelligence agencies, is building a centre to plan for war in space. Space, once was a "virtual sanctuary," but now is considered to be a contested operational domain in ways that we haven't had to think about in the past. (Weisberger, 2015)

## 3. TECHNOLOGICAL ADVANCEMENT

While venturing out into space, humanity expected to find a plethora of nothingness, a void of silence. Instead we have found that space offers an abundance of resources, even bigger than our supply on Earth, a supply that could well be used to augment power generation demands for the next millennium. (Stauffer, 2009-2010). "Asteroids are excellent potential sources of highly valuable resources and minerals," said Representative Bill Posey, a Member of the House Science, Space and Technology Committee. Our knowledge of asteroids – their number, location, and composition – has been increasing at a tremendous rate and space technology has advanced to the point where the private sector is now able to begin planning such expeditions (David, 2014). We've identified some, 150 million asteroids ranging in size from several meters to hundreds of kilometers across the orbit. (Stone, 2015) Though asteroids and Earth grew from the same starting materials, the latter's relatively strong gravity pulled all heavy siderophilic (iron-loving) elements into its core during its molten youth more than four billion years ago (Toronto, 2009). This left its crust depleted of such valuable elements until a rain of asteroid impacts re-infused the depleted crust with metals like gold, cobalt, iron, manganese, nickel, osmium, palladium, platinum, rhenium, rhodium, and [some flow from core to surface does occur, e.g. at the Bushveld Igneous Complex, a rich source of platinum-group metals].

Today, these metals are mined from Earth's crust, and they are essential for economic and technological progress but are in scarce. Hence, the geologic history of Earth may very well set the stage for a future of asteroid mining. (McDonough2, 2009)

Every frontier expansion and gold rush in history relied on a local source of energy and transportation as a backbone. Space will be no different. Conventionally, rockets were used to push astronauts into orbit and again used for space travel. But to travel huge distances such as from Earth to nearby planets, asteroids or even a nearby galaxy by liquid fuel which is what we use right now; is not going to suffice. Before mining precious metals, Planetary Resources intends to produce fuel in space from carbonaceous chondrites rich in water that can be broken down into highly efficient LOX/H<sub>2</sub> rocket fuel (Planetary Resources) hence using asteroids as gas station in space so that space shuttle does not have to carry unnecessary fuel from earth and they can refuel whenever they want from an asteroid. Researchers and other brains are hard at work contemplating the challenges of deep space travel and dreaming of technologies to meet those challenges. Some of them have already come up with a number of ideas such as, super precise atomic power instruments for navigation, solar sales to power spacecraft and laser relays for long-distance communication. All of this is in the early stages of development and maybe ready for testing in the next few years according to NASA. (NASA)

Helium-3 (He3) is gas that has the potential to be used as a fuel in a nuclear fusion power plant. There is very little Helium-3 available on the Earth. Although there is thought to be a significant supply on the Moon. Several governments have subsequently signaled their intention to go to the Moon to mine helium-3 as a fuel supply. Such plans may come to fruition within the next two to three decades and trigger a new Space Race. As reported in an Artemis Project paper, about 25 tones of helium-3 or a fully-loaded Space Shuttle cargo bay's worth, could power the United States for a year. This means that helium-3 has a potential economic value in the order of \$3Bn a tone, making it the only thing remotely economically viable to consider mining from the Moon given current and likely-near-future space travel technologies and capabilities.

Several of the largest governments on the planet have on various occasions made announcements that they are either actively considering or would like to go to the Moon to mine Helium-3. No wonder, it is would not surprise if a serious interest is being taken in lunar Helium-3. In 2006 Nikolai Sevastyanov, head of the Russian Space Corporation Energia, was reported to have said that Russia is planning to mine lunar Helium-3, with a permanent Moon base to be established by 2015 and industrial-scale helium-3 production to commence by 2020. American also has plans from the early 90's to "establish a permanent base on one of the Moon's poles by 2024", with Helium-3 signaled as one of the reasons behind this mission, are also sadly likely to come to nothing (Christopher Barnatt, 2014).

The 2010 CRS report discussed the potential uses for helium-3, including national security, medicine, and scientific research. The report also stated that there is currently a helium-3 shortage and that if we had more of it, we would be able to use it more widely and certainly find new uses (Dana A. Shea, 2010). The above noted, China's Lunar Exploration Program is proceeding apace, and is being led by a scientist with a strong belief in potential Helium-3 lunar mining.

In December 2013, China managed to land a Robot Lander on the Moon, so successfully completing Stage-3 of its Lunar Exploration Program. By the end of 2017, the fifth and final stage of the current program has the intention of sending a robotic craft to the Moon that will return lunar rocks to the Earth. If all goes well, a manned program may follow in the 2020s, so laying the potential foundation for China to mine for helium-3 on the Moon in the 2030s or beyond. (Barnatt, 2014)

In the words of H.G. Wells,

"There is no way back into the past. The choice is the Universe – or Nothing." (H.G.Wells)

#### 4. MILITARIZATION AND WEAPONIZATION OF SPACE

Some proponents of weapons in space consider that placing in orbit and using weapons is unavoidable; since every medium – air, land and sea has seen military conflict, it is asserted that it will be no different for space. Sooner or later, space will be weaponized. It is, therefore, important to take the lead in this process in order to gain military advantage. (Faculty of INSTITUTE OF AIR AND SPACE LAW, 2005)

The modern space age began in the early twentieth century with technological developments in rocket and missile science. The former Soviet Union launched Sputnik, the world's first man-made satellite, in 1957, and transformed the dream of space exploration into reality. With Gagarin's flight, human beings became space travelers and man soon walked on the Moon. This was done with the help of satellites. The satellite industry is the largest sector of commercial space activities today. There are 1071 operational satellites in orbit around the Earth, 50 percent of which were launched by the United States. Half of 1071 satellites are in Low-Earth Orbit, just a few hundred kilometers above the surface. Some of the most notable of these include the International Space Station, the Hubble Space Telescope, and many Earth observation satellites. About a twentieth is in Medium-Earth Orbit, around 20,000 kilometers up, which are generally global positioning satellites used for navigation. A handful of them are in elliptical orbits, where their orbit brings them closer and further to the Earth. The rest are in geostationary orbit, at an altitude of almost 36,000 kilometers. Orbiting satellites, for example, facilitate communication between distant points on Earth. However, space has also become an important military tool. Satellites have become the eyes, ears and nerves of today's military forces. This is true to such a degree that if the satellites of a space power were to be destroyed, its military capability would be reduced dramatically. Right now, NASA's Lunar Reconnaissance Orbiter and Lunar Atmosphere and Dust Environment Explorer are in lunar orbit. Further still, there's 1 spacecraft around Mercury, 1 at Venus, 3 visiting Mars and 1 orbiting Saturn. There's a handful of spacecraft orbiting the Sun, although they are leading or trailing the Earth in its orbit. And a few spacecraft are on trajectories to take them out of the Solar System entirely. NASA's Voyager spacecraft, exited the Sun's heliosphere in 2013, and entered the interstellar medium. Starting with Sputnik's lonely journey over 50 years ago, it is amazing to consider just how many satellites we've already launched into space in just a few decades. With more launches all the time, space is becoming a busy place (Cain, 2013). As far as our knowledge is concerned there are no weapons in space, but many weapons are presently guided by satellite from space. Drones are in the first wave of satellite guided robots now drastically changing the way war is fought and perceived. P.W. Singer (Brookings Institute and author of *Wired for War*) tells us that war fighting is undergoing a revolution. Unmanned aerial vehicles (UAVs) now do targeted killings half a world away from "chair pilots" manipulating joysticks staring into computer screens. (Urner, 2011) Autonomous quadcopters - the four propeller flying craft commonly called drones—are faster flexible. Sue little power and can get into and out of tight spaces. But they work only with an atmosphere to propel through. Now, the Swamp Works team at NASA's Kennedy Space Center in Florida is developing a drone like robot that works in dark, low-or no-atmosphere environments, and can recharge itself by returning to its Lander mother ship (Lewin, 2015). NASA's Kennedy Space Center shows that the agency is working on ways to explore other planets and asteroids using robots that can fly to places its rovers can't reach. (Murphy, 2015)

Another path leading to gradual space weaponization could result from the development of Earth-based ASAT weapons by the United States, China, Russia, or some other States, like North Korea, for example. Any nation that has space assets will be faced with the threat of survivability of its satellites and might consider deploying weapons in orbital space as an effective counter measure or deterrent (Watts, 2001).

In ASAT test, a satellite fitted with radar/optical-seeker and orbit-maneuvering rockets. After the spacecraft is launched into its initial orbit it would then fly closer to its target space craft. Once the spacecraft reaches within certain range of the target satellite, it would then fly along with the satellite. After the ground control initiates the attack, the ASAT spacecraft is able to temporarily disable the target satellite by blocking its communications with other satellites/ground and capturing the satellite using its robotic arm, or to destroy the target physically.

Modern life is completely dependent on communication networks through satellites. Any disruption of communication channels would bring life to a standstill. The ASAT capability raises the fear of massive communication disruption thereby the ability of nations to fight a war and win without blood-shed. Commander of the Joint Functional Component Command for Space, US Air Force, Lt. Gen. John “Jay” Raymond rightly said at a House hearing that “we are quickly approaching the point where every satellite in every orbit can be threatened.”

All the nations who reside in space through satellites perceive now a huge threat from the countries possessing ASAT capability. The evolving scenario is such that a war can be fought *in space, for space, and from space* through space militarization and weaponization.

There is a thin line between militarization and weaponization. Militarization is the build up to a state of conflict and broadly encloses any activity that furthers this objective. Weaponization, by contrast, means actively evolving or establishing a weapon. More importantly, military activities in space can have significant and lasting impact on the commercial satellite market which is on the rise. Currently, there are about 175-200 low earth orbit commercial satellites in operation with US\$120bn of market investment. Hence, the ASAT tests beget the threat to any asset in the space, and more so to satellites that the modern nation-state banks on heavily. (Maria Amravatiwala, February'2016)

Weaponization of space would only worsen the debris problem and could jeopardize the possibility of further space explorations and severely impair both civilian and military uses, including communications systems. In addition, even a small number of “hits” in the lower orbits could create sufficient debris to cause a cascade of further collisions and fragmentation. Eventually, this accumulation of debris could interfere with the Sun light (since) Sun’s rays reflect off the dust) and lead to serious damage to Earth’s environment as a result of a permanent light pollution (Faculty of INSTITUTE OF AIR AND SPACE LAW, 2005). About 65% of the catalogued objects, however, originate from break-ups in orbit – more than 240 explosions – as well as fewer than 10 known collisions. Scientists estimate the total number of space debris objects in orbit to be around 29 000 for sizes larger than 10 cm, 670 000 larger than 1 cm, and more than 170 million larger than 1 mm. Any of these objects can cause harm to an operational satellite. For example, a collision with a 10 cm object would entail a catastrophic fragmentation of a typical satellite, a 1 cm object will most likely disable a spacecraft and penetrate the International Space Station shields, and a 1 mm object could destroy subsystems. Scientists generally agree that, for typical satellites, a collision with an energy-to-mass ratio exceeding 40 J/g would be catastrophic.

In 2007 the Chinese military decided to test their anti-satellite technology on one of their dead weather satellites. This test successfully exploded the dead satellite, and created over *two thousand* new pieces of space debris, which, at the time, increased our space junk tally by 25%. We had another spike in the space debris population after a dead, but intact, Russian spacecraft managed to collide with a not-dead privately owned satellite – that produced another 2000+ large pieces of debris (Scudder, 2016).





Picture credits: (Asian Scientists)

The potential vulnerability of the space weapons is addressed by Bruce DeBlois, editor of *Beyond the Paths of Heaven: The Emergence of Space Power Thought*, who claims that such arms could become “sitting ducks in orbit”, thus giving the United States a new weakness, not a new strength. Satellites are already becoming a weak “center of gravity” in US military planning since they are vulnerable to electronic jamming, orbiting debris and electromagnetic pulse. Some observers call this space-based dependence of the US as its Achilles Heel. (Faculty of INSTITUTE OF AIR AND SPACE LAW, 2005)

## 5. LEGAL BOUNDARIES

ON DECEMBER 13, 1958 shortly after the launching of the first artificial satellite, the General Assembly in resolution 1348 (XIII) established 18-member Ad Hoc Committee on the Peaceful Uses of Outer Space (COPUOS), is established to discuss the scientific and legal aspects of the exploration and use of outer space, to consider the activities and resources of the United Nations, the specialized agencies and other international bodies relating to the peaceful uses of outer space, organizational arrangements to facilitate international cooperation in this field within the framework of the United Nations and legal problems which might arise in programs to explore outer space. A number of fundamental principles guide the conduct of space activities, including the notion of space as the province of all humankind, the freedom of exploration and use of outer space by all states without discrimination. The United Nations has been involved in space activities ever since the very beginning of the space age (Space law). The existing legal structure concerning outer space has a number of additional elements. The Partial Test-Ban Treaty entered into force in 1963 and prohibits nuclear tests and explosions in the atmosphere or in outer space. The Astronaut Rescue Agreement was reached in 1968. The Convention on Registration of Objects Launched into Outer Space entered into force in 1976, which complemented the 1972 Convention on International Liability for Damage Caused by Space Objects. In December 1979, the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies was signed and entered into force.

The OST, which entered into force in 1967, prohibits the testing of weapons. Stationing of weapons of mass destruction (including nuclear weapons), holding of military maneuvers or the establishment of military bases in space. However, the OST does not cover the transit of nuclear weapons *through* space or nuclear weapons launched from Earth into space in order to destroy incoming missiles (such as some of the American or Soviet missile defense systems originally permitted under the 1972 Anti-Ballistic Missile Treaty). Nor does the OST address other weapons (such as anti-satellite weapons or ASAT) or the placement of conventional weapons in space. Article 51 of the United Nations Charter, which relates to the right of self-defense, can be invoked in outer space. One might argue that using outer space for deterrent and defensive purposes serves the cause of peace and that only when it is used for offensive activities that it goes against the idea of peaceful use. However, the distinctions between

'offensive and defensive' actions, 'active and passive' weapons, and 'aggression and self-defense' becomes more and more blurred. When attempting to differentiate between permitted and prohibited activities in outer space, it is essential to have an operational definition of the boundary between airspace (where certain activities are allowed) and outer space (where comparable activities are banned, restricted or otherwise regulated). Similar to the question of defining peaceful uses, the demarcation of airspace from outer space has been left to several interpretations. While stating that outer space should be used exclusively for peaceful purposes, the OST fails to define the boundaries of the area to be kept free from military uses (the boundary between the airspace and outer space). In practical terms, below an altitude of approximately 69 miles (about 110km), sustained orbit is practically impossible. Above an altitude of approximately 53–62 miles (about 85–100km) aerodynamic lift is largely non-existent. However, there are aircrafts that have flown higher than 62 miles and there are satellites and other spacecrafts that pass through orbits lower than 69 miles. (Wolf, 2003) Notwithstanding the fact that the definition problem has been on the agenda of COPOUS and its legal and scientific and Technical Subcommittees since 1959, there have been no concrete results in regards to the demarcation of outer space. (Faculty of INSTITUTE OF AIR AND SPACE LAW, 2005) Leading to a different chapter of OST, in 2015, President Obama signed a historic piece of legislation into law that recognizes the right of U.S. citizens to own asteroid resources they obtain and encourages the commercial exploration and utilization of resources from asteroids. (Planetary Resources) The OST prohibits any claim in the outer space and reserves it as a common heritage of mankind, but loop hole in the law it that no one party whether, Private or Public, can claim a territory in space but can collect the resources and bring back to earth as a scientific research program. Commercialization of space is not recommended as it will be the same as that of the other three dimensions. Everything was a common heritage and we humans used it, militarized it and almost destroyed the natural heritage which we were inhibited in.

## 6. ANALYSIS AND CONCLUSION

Space is the emerging fourth dimension of war after air, water and land. All the major powers have taken it as an opportunity to explore and dominate it via their presence there. This is the era where, geographically speaking, space is out of the Earth but with technological advancement it's just a click away from a closed room in Washington DC. It is the logical extension of space on earth and vice versa. A conflict in space can lead to a war on Earth or say a conflict in South China Sea can lead to a massive destruction in the outer space.

When we say outer space it does not mean that space as a whole is under threat but just the orbits where the satellites and exploration program are carried out. The competition in space is not isolated nor it is detached from Earth but it has its equal repercussions on the land.

Energy crisis on Earth has led the scientist to start the quest for new fuels for which space is being explored. With the space exploration at its heights various precious metals and resources are also found in asteroids and on the lunar surface. Thus, the countries in this quest are exploring all the hidden dark corners up there for mere economic profit. With the increasing presence of various nations in the near earth orbits, the rationales of conflicts have emerged even more. The assets in the space have become more vulnerable. There is no security module present there which can make sure no damage is caused to the asset of the nation. The nation takes their rivalry out by hindering each other's projects. A single scratch in space can cause trillions for its mending. Nations who owns the technology for an ASAT can easily destroy a satellite of any other nation. In 2007, China proved its ASAT capability and entered into the league with U.S, Russia, Japan who own this technology and other countries like India which have the capability but haven't yet made a decision to acquire it. (Maria Amravatiwala, February'2016) Another thing to worry about is all the human-made space objects which are

nearly 5000 launches since the start of the space age. And the life of a man-made object is uncertain as it can be hit by any random flying object in the outer space including debris of the dead satellites. It is the need of the hour that a proper legal framework should be established so that the countries can govern their role in the most controversial area, i.e. an area without man-made border, termed as outer space. The outer space treaty fails to define the boundary of area which is to be kept free from militarization. The OST is still unclear on its terms of exactly defining the outer space, i.e. whether it is just limited to the moon and the celestial bodies, and other significant undiscovered places beyond the earth in what they define as "Outer space". The weapons can be kept in space, in the air or on the ground and can be aimed at the any of the three dimensions. For further any demarcation it will be essential to delimit airspace (where use of certain weapons would still be allowed) from outer space (where use of weapons would not be allowed). An agreed definition would eliminate the significant "grey area" that has permitted the militarization of space and might one day permit its weaponization. (Faculty of INSTITUTE OF AIR AND SPACE LAW, 2005) Insecurity leads to a war. And till the nations collectively decide some security model to protect each countries presence in the outer space, the world will be at the verge of a constant threat. Increase in presence of the nations without proper legal boundaries and demarcations will lead to severe consequences in the future. Thus security is a big issue. Till the nations do not feel safe they will keep on militarizing and weaponizing the outer space claiming it is for their self defense which will in return pose a threat to other nations present there. Hence war in space is much prone to reality than just a myth as it was 70 years ago.

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## LABOUR MARKET POLICY AND ASSOCIATION WITH PRODUCTIVITY

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### ABSTRACT

*The paper deals with the issue of labour market policy and association with productivity. We focus our empirical analysis on the association between labour productivity growth and active as well as passive labour market policies for 20 EU Member States over the 2004-2013 period. Our econometric results based on the panel regression estimates suggest that expenditures for active and passive labour market policies positively relate to labour productivity growth (however, some estimates were statistically insignificant). Since from a theoretical perspective such association regarding expenditures for passive labour market policies may be doubtful, we additionally tested some hypothesis. We conclude, that countries with higher GDP per capita have higher expenditures for passive labour market policies. We have also examined potential detrimental effect of passive labour market policies and found negative correlation between variables expenditures for passive labour market policies and average annual hours actually worked per worker.*

**Keywords:** *EU, labour market, labour market policy, productivity*

### 1. INTRODUCTION

Labour market policies are financial and practical policies that can help people in disadvantaged groups in the labour market to move from inactivity and unemployment into employment or to find better fitting jobs. They are varied and include job searching mechanisms, activation interventions and income supports (unemployment benefits). A set of these policies are grouped together as "measures" or activation policies and include training, employment incentives, supported employment and rehabilitation, direct job creation, start-up incentives (EC, 2016). The main objective of an effective activation policy for jobseekers and other disadvantaged groups of the population is to bring more people into the labour force and into jobs. Such approach in particular requires that people have the motivation and incentives to seek employment; increasing their employability and helping them to find suitable employment; expanding employment opportunities for jobseekers and people outside the labour force and managing the implementation of activation policy through efficient labour market institutions (OECD, 2015). On the other hand, the growth rate of the economy is the rate at which the gross domestic product (GDP) is increasing. One reason that causes GDP to grow over time is that the available amount of resources in the economy changes. The principal resources are capital and labour. The labour force, consisting of people that either are working or are looking for a job, grows over time and therefore provides one source of increased production. The capital stock, on the other hand, including buildings and machines, also grows over time, and thus provides another source of increased production. Part of the increase in GDP is therefore attributed to increases in the availability of factors of production.

Another part of the increase in GDP is attributed to the efficiency of factors of production. Efficiency improvements are called productivity increases. This means that over time the same factors of production can produce more output. Increases in productivity are the result of changes in knowledge, meaning that people learn through experiences and therefore they can perform familiar task better (Dornbusch, Fischer and Startz, 1998). Labour productivity is the key to increasing output per hour of labour and rising living standards. In order to grow there

also have to be established an incentive system created by firms, markets, property rights and money. Labour market policies can influence productivity through their impact on employment. Besides that, labour market policies can also have effects on individual productivity growth (see, for example Bassanini and Venn, 2008). In this paper, we firstly introduce literature review, followed by methodology, results and discussion. At the end is the written conclusion.

## 2. LITERATURE REVIEW

We have established that increases in productivity are due to improved technology and a more able work force. Growth of labour productivity besides the growth of the supply of labour are usually the main factors reported in the literature that make potential GDP grow (see, for example Barro and Sala-i-Martin, 2004; Parkin, 2010). Growth of the labour supply is due to changes in average hours per worker, changes in employment-population ratio and working-age population growth. Whereas growth of labour productivity is due to physical capital growth, human capital growth (education and training, job experiences) and technological advances. As the amount of capital per worker increases, labour productivity also increases. Production methods that use large amounts of capital per worker are much more productive than production processes that use hand tools. Importance of the accumulation of capital is huge as it has added incredibly to labour productivity of our economy. Human capital, on the other hand, the accumulated skills and knowledge of workers they have built up through education and training programmes, is the most fundamental source of labour productivity growth. With higher education and training, workers are much more productive and therefore earn much higher wages (Mishkin, 2012). The accumulation of physical capital and human capital have made a large contribution to labour productivity growth. But technological change has made an even greater contribution. Technological advance comes from formal research and development programmes (increased resources to research and development), from informal trial and error, and it involves discovering new ways of getting more out of our resources (Parkin, 2010).

Dolenc and Laporšek (2013) in their paper investigate flexicurity policies and their association with productivity in the European Union. They pointed out, that the level of implementation of flexicurity policies across EU Member States is very different, whereas the least successful are new Member States, especially with regard to active labour market and lifelong learning programmes. Based on the econometrics estimates, they found out that active labour market policies and participation in lifelong learning programmes have statistically significant positive association with labour and total factor productivity growth, whereas rigid employment protection and high expenditures for passive labour market policies negatively relate to productivity growth. Jung and Kuester (2015) in their paper examine optimal labour market policy in recessions. They derived a model for the US economy under certain assumptions and they found out that hiring subsidies and layoff taxes should rise considerably and persistently in recessions, whereas the optimal variation in unemployment benefits in contrast is quantitatively small and short-lived. New macroeconomic evidence from OECD countries regarding regulation, institutions and productivity can be found in paper written by Egert (2016). The paper examines the drivers of country level multifactor productivity with emphasis on product and labour market policies and the quality of institutions. They found out that anticompetitive product market regulations reduce multifactor productivity levels and that higher innovation intensity and greater openness result in higher multifactor productivity. Among all, they also show that cross country multifactor productivity variations can be explained by cross country variation in labour market regulations, barriers to trade, investment and institutions. OECD (2007b) in its work investigates the impact of labour market policies on productivity. OECD (2007b) reports that labour market policies can increase productivity

by encouraging training, enabling the movement of resources into emerging, high productivity activities, improving the quality of job matches and increasing the spread of technological change. Main findings of OECD study are among others that employment growth tends to be associated with lower average measured labour productivity growth, which does not mean that higher employment causes productivity of individual workers or fall; that labour market reforms can have a sizeable impact on productivity levels and growth rates through multiple channels; reforms that reduce the generosity of unemployment benefits are likely to reduce the aggregate level of measured productivity (OECD, 2007b).

### 3. METHODOLOGY

In our empirical analysis we estimated the relationship between government expenditures for active labour market policies, government expenditures for passive labour market policies and labour productivity. We used panel regression analysis to estimate the above mentioned relations. Empirical analysis was performed on the sample of 20 EU countries over the 2004-2013 period. EU countries included in the sample were: Austria (AT), Belgium (BE), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Hungary (HU), Ireland (IE), Italy (IT), Luxembourg (LU), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Slovak Republic (SK), Slovenia (SI), Spain (ES), Sweden (SE). Data needed for empirical analysis were obtained from the OECD.Stat Database (2017). The specification of the basic regression function was the following:

$$LP_{i,t} = \alpha_0 + \Pi \begin{bmatrix} \ln ALMP_{i,t} \\ \ln PLMP_{i,t} \end{bmatrix} + \Phi \begin{bmatrix} \ln TUnionD_{i,t} \\ \ln GDPpc_{i,t} \\ \ln LTUR_{i,t} \end{bmatrix} + \varepsilon_{i,t}$$

$LP_{i,t}$  denotes labour productivity (GDP per hour worked, in USD PPP),  $ALMP$  denotes government expenditures for active labour market policies in country  $i$  at time  $t$ , whereas  $PLMP$  refers to government expenditures for passive labour market policies (both in % of gross domestic product GDP). To control for labour market situation we included trade union density ( $TUnionD$ ) and long-term unemployment rate ( $LTUR$ ). As a control variable of macroeconomic environment we use gross domestic product per capita in USD PPP ( $GDPpc$ ).  $\Pi$  and  $\Phi$  are vectors of regression coefficients, the association of labour productivity growth measure with explanatory variables and control variables.

The above regression function was re-estimated by including year dummies (vector  $\Psi$ ) in order to control for effects that may influence all countries in a given year in the same way (for example, economic shocks).

$$LP_{i,t} = \alpha_0 + \Pi \begin{bmatrix} \ln ALMP_{i,t} \\ \ln PLMP_{i,t} \end{bmatrix} + \Phi \begin{bmatrix} \ln TUnionD_{i,t} \\ \ln GDPpc_{i,t} \\ \ln LTUR_{i,t} \end{bmatrix} + \Psi \begin{bmatrix} Year2004 \\ \vdots \\ Year2013 \end{bmatrix} + \varepsilon_{i,t}$$

Across model specifications we also estimated the relations between labour productivity growth and labour market policies using fixed and random effects. In the fixed effects model, the individual-specific effect is a random variable that is allowed to be correlated with the explanatory variables, whereas in the random effects model, the individual-specific effect is a random variable that is uncorrelated with the explanatory variables (Schmidheiny, 2016). By using both, fixed and random effects models, we tried to avoid biases that could arise from

different estimation methodologies. Robust standard errors were used to control for heteroskedasticity and autocorrelation (see, for example Dolenc and Laporšek, 2013; Wooldridge, 2010).

#### 4. RESULTS AND DISCUSSION

Active labour market programmes includes all social expenditure (other than education) which is aimed at the improvement of the beneficiaries' prospect of finding gainful employment or to otherwise increase their earnings capacity. This category includes spending on public employment services and administration, labour market training, special programmes for youth when in transition from school to work, labour market programmes to provide or promote employment for unemployed and other persons (excluding young and disabled persons) and special programmes for the disabled (OECD, 2007a). Despite the relevance of active labour market policies, the government expenditures for active labour market policies are still low. Taking into account our sample of 20 EU countries in the year 2008 and dividing them into two groups, one being western EU countries and the other being eastern EU countries, the average expenditures for active labour market policies for the group of western EU countries were 0,7 % of GDP in the year 2008, whereas for the group of eastern EU countries the percentage was even lower, that is 0,2 % of GDP. The difference between the two groups of countries is statistically significant at 5 % significance level. Figure 1 depicts the expenditures for ALMPs and labour productivity. It can be seen, that countries with higher expenditures for ALMPs record higher levels of labour productivity per hour worked, whereas countries with lower expenditures for ALMPs record lower levels of labour productivity per hour worked, suggesting that ALMPs might stimulate productivity.

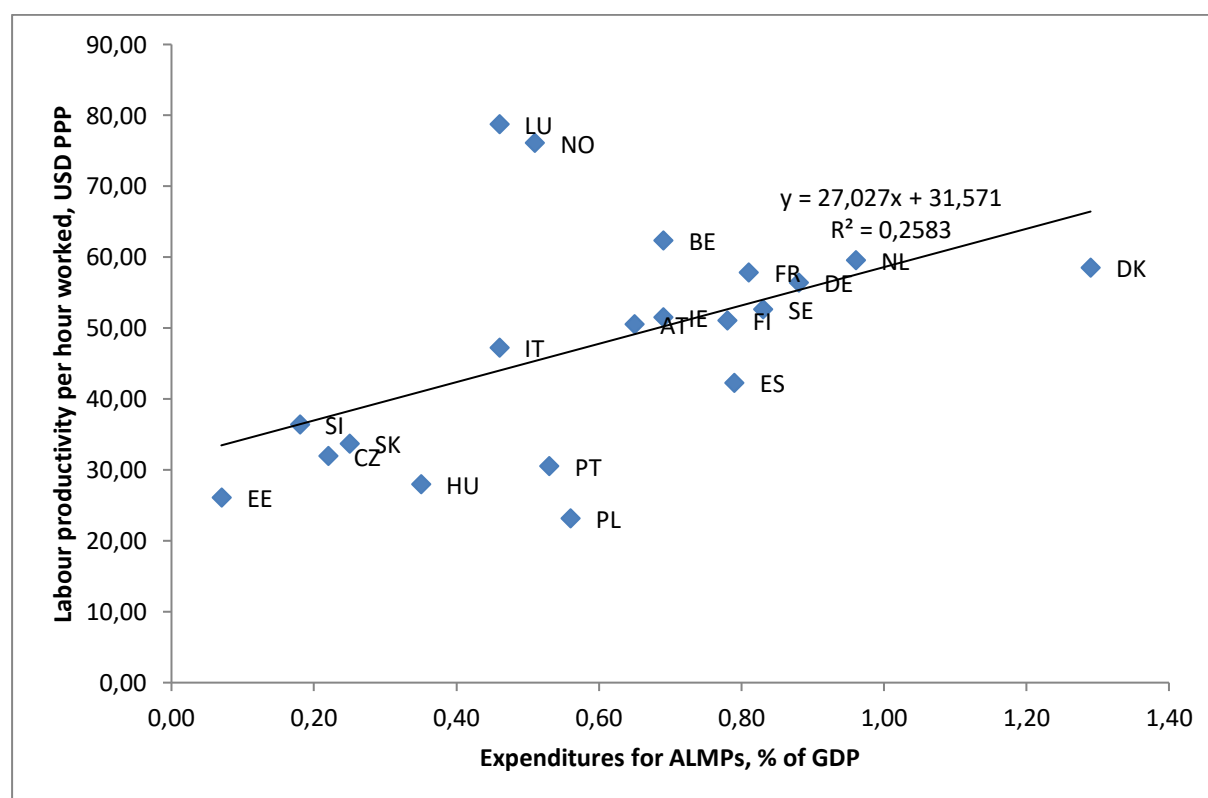


Figure 1: Expenditures for ALMPs (% of GDP) and labour productivity per hour worked USD PPP, 2008 (Source: own)



On the other hand, passive or income maintenance programmes in the context of labour market programmes consist of unemployment compensation programmes and programmes for early retirement for labour market reasons (OECD, 2007a). Figure 2 depicts the expenditures for PLMPs and labour productivity.

The expenditures for passive labour market policies are generous in Nordic countries, as well as in Spain, Belgium and Germany. This conclusion is very similar also when taking into account the expenditures for active labour market policies. On the other hand, expenditures for passive labour market policies are low in eastern EU countries. The relation between passive labour market policies and labour productivity per hour worked again suggests, that countries that record higher expenditures for PLMPs record higher productivity levels and vice versa. From a theoretical perspective such association may be doubtful as such association may be the consequence of reverse causality: richer countries that achieve higher productivity levels can afford higher expenditures for PLMPs. We have additionally tested the hypothesis that countries with higher GDP per capita have higher expenditures for PLMPs. Within our sample, the EU countries with high GDP per capita allocated on average 1,1 % of GDP for expenditures for PLMPs in the year 2008, whereas the EU countries within our sample with low GDP per capita allocated only 0,3 % of GDP for expenditures for PLMPs in the year 2008. The difference between the two groups of countries is statistically significant at 5 % significance level. Therefore, we can conclude, that countries with higher GDP per capita have higher expenditures for PLMPs.

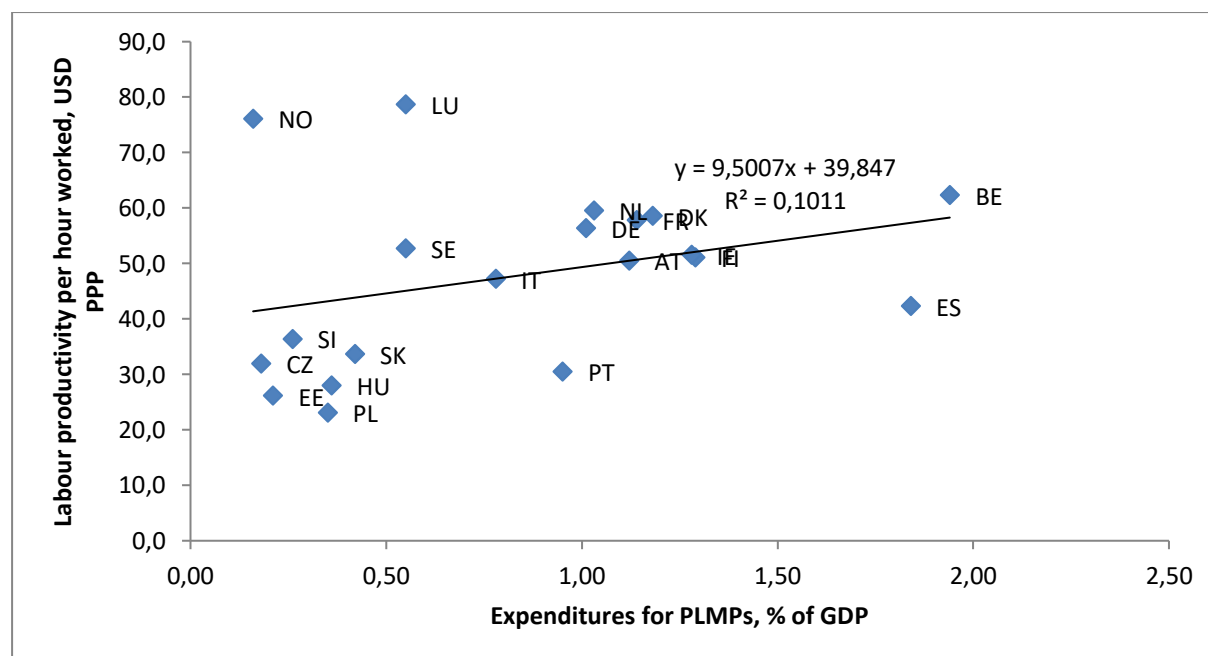


Figure 2: Expenditures for PLMPs (% of GDP) and labour productivity per hour worked USD PPP, 2008 (Source: own)

In the next step, we performed panel regression analysis and analysed relations between labour productivity and both active and passive labour market policies. Analysis was conducted on the panel of 20 EU countries during 2004-2013 period. Table 1 summarizes the estimation results.

Table 1: Estimation results of panel regression analysis (Source: authors' calculations)

|                              | Labour productivity growth |              |
|------------------------------|----------------------------|--------------|
| Model                        | 1                          | 2            |
| Fixed (within group) effects |                            |              |
| Constant                     | -1,79 (1,60)               | -2,09 (1,80) |
| lnALMP                       | 0,02 (0,01)                | 0,02 (0,01)  |
| lnPLMP                       | 0,04* (0,01)               | 0,04* (0,01) |
| lnTUnionD                    | -0,15* (0,07)              | -0,06 (0,07) |
| lnGDPpc                      | 0,56* (0,14)               | 0,56* (0,15) |
| lnLTUR                       | 0,08* (0,02)               | 0,06* (0,03) |
| Random effects GLS           |                            |              |
| Constant                     | -4,59* (0,83)              | -4,21 (0,87) |
| lnALMP                       | 0,03 (0,02)                | 0,03 (0,02)  |
| lnPLMP                       | 0,06* (0,01)               | 0,05 (0,01)  |
| lnTUnionD                    | -0,04 (0,04)               | 0,02 (0,03)  |
| lnGDPpc                      | 0,79* (0,08)               | 0,74 (0,08)  |
| lnLTUR                       | 0,08* (0,03)               | 0,06 (0,03)  |
| Year dummies                 | No                         | Yes          |
| Hausman test                 | 15,03*                     | 10,33        |
| No. of obs.                  | 200                        | 200          |

\*significant at 5%; robust standard errors in parentheses

Table 1 shows the estimation results of the panel regression analysis, whereas the first two columns examine the association between active and passive labour market policies and labour productivity growth. The obtained estimations somehow confirm our previously presented empirical studies and are similar across both model specifications and both fixed and random effects, confirming the robustness of our results. On overall, regression estimates suggest a positive association between both active as well as passive labour market policies and labour productivity growth. According to the estimation results, the association is statistically significant only for passive labour market policies.

This result might be doubtful from a theoretical perspective, as we mentioned earlier, and may be a consequence of reverse causality meaning that richer countries that achieve high productivity levels can afford higher expenditures for passive labour market policies (see, for example Dolenc and Laporšek, 2013). We empirically tested the hypothesis (see the results above) and we can conclude that the difference between the two groups of countries is statistically significant at 5 % significance level. Therefore, we can conclude, that countries with higher GDP per capita have higher expenditures for PLMPs. Other studies (see, for example OECD, 2007b; Južnik Rotar, 2015) also examine potential detrimental effect of passive labour market policies evident in reducing work effort, lowering motivation for job search and therefore causing loss of human capital. To examine the issue, we have additionally tested the hypothesis that expenditures for passive labour market policies negatively effect average annual hours actually worked per worker. The correlation coefficient is negative, which indicates a negative direction of connectivity between variables expenditures for passive labour market policies and average annual hours actually worked per worker. Pearson correlation coefficient is -0,29, which means that the connection is weak. The correlation coefficient is not statistically significant ( $0,05 < 0,202$ ).

## 5. CONCLUSION

The paper deals with the issue of labour market policy and association with productivity. Labour market policies can influence productivity through their impact on employment. In our empirical analysis we estimated the relationship between government expenditures for active labour market policies, government expenditures for passive labour market policies and labour productivity. For estimates, panel regression analysis was used. We found out, that active as well as passive labour market policies are positively related to labour productivity growth (though some estimates were statistically insignificant). We have additionally tested some hypothesis in order to gain a clearer picture about passive labour market policies, since negative effects reported in the literature about passive labour market policies are more common than positive effects. We found out negative correlation between variables expenditures for passive labour market policies and average annual hours actually worked per worker, which somehow confirms not effective use of public funds on passive labour market policies. This suggests that passive labour market policies (mostly unemployment benefits) should require active job search and that unemployed person is well informed about the coordination between tax and benefit system. The latter should be transparent and it should give the unemployed person a clear signal, that it is better to work and that benefits are greater if working.

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## INTERRELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT AND OPERATIONAL PERFORMANCE

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### ABSTRACT

*This paper aims to discover the organizational operational performance to determine potential gaps in implementing knowledge management in process, technology or knowledge workers. A specific case study of ANZ (Australia and New Zealand Banking) group is analysed to unveil its existing knowledge management system and the gap to excel. The banking industry is thriving to complete not merely domestically but globally nowadays. Several published research into banking systems reveals that a strategically set up knowledge management system can deliver proven results (Cham et al, 2016). However, the operational performance from the implementation of knowledge management is under surveyed (Tseng & Lee, 2014). The research method in this paper employs qualitative approach in terms of case study to obtain in-depth understanding. ANZ group is an ASX listed banking company lasts more than 175 years. Currently ANZ is estimated a market capitalisation over \$88 billion and positioned as one of the 'big four' major banks in Australia where has a relative monopoly banking industry. The operations of ANZ Australia and New Zealand include Products & Marketing, Retail Distribution and Corporate & Commercial Banking. A total number of 48,000 employees in ANZ are from 28 countries across Asia in addition to Australia and New Zealand (ANZ, 2014). The research findings conclude that while ANZ expects to become a global banking brand, the well-designed organizational learning and effective knowledge management implementation resulting in better operational performance can realize this goal. It is evident that ANZ has largely invested in research and development, but the Value Added Intellectual Capital (VAIC<sup>TM</sup>) ranking is not yet impressive (Joshi, Cahill & Sidhu 2010). One proposed strategy is to enhance knowledge management systems and engage with domain experts at ANZ and better in line with its organisational goals so that their intellectual capital and capitalise on its extensive global presence can be enhanced and realized. In doing so, developing and harvesting knowledge at ANZ through KM strategies would attract more talented knowledge workers. The bankers then not only can gather more collective knowledge but also fine-tune their products and services according to customer need more efficiently and increase success rate (Sahrawat 2008). Being the market leader in knowledge management can provide competitive advantage to ANZ in Australian banking industry regarded to have reached its 'natural equilibrium' (Cohen et al. 2007; Shih, Chang & Lin 2010). Given the fact of not all customers are price sensitive in banking (Worthington & Welch 2011), knowledge of specific region, diversified culture and customer behaviour is suggested to design the products and strategies which can lead ANZ into the bank of Asia-Pacific (Cohen et al. 2007; Shih, Chang & Lin 2010). Therefore, it is vital ever more for ANZ to develop a more personalized solution to its customer and delivered by well-trained knowledge workers who have proper knowledge of customer and appropriate strategies to fulfil its knowledge management strategy (Sahrawat 2008; Valenzuela et al. 2013).*

**Keywords:** Knowledge Management, Operational Performance, Banking Industry

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*Full paper is not available upon Authors' request*

## MACROECONOMIC EFFECTS OF WORKERS' REMITTANCES: EVIDENCE FROM THE WESTERN BALKAN COUNTRIES

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### ABSTRACT

*Workers' remittances have been in the focus of researchers and policy makers for years due to their magnitude and positive impact on a micro and a macro level. However, the interest in this topic has resurged recently as a result of the upward trend of migrant remittances and especially of the striking increase of remittance inflows to the developing countries. Workers' remittances are an extremely important source of external financing for most of the Western Balkan countries. During the latest global financial crisis, they helped these countries to maintain their foreign exchange reserves stable and to decrease their current account deficits. This study aims to investigate the macroeconomic effects of remittances sent to the Western Balkan countries, especially in times of financial shocks, such as the latest global economic and financial crisis 2008/2009. To achieve this objective, we estimate a model with fixed effects of period using panel quarterly data on migrant remittances per capita as a dependent variable and gross domestic product (GDP) per capita, gross monthly wages, unemployment rates, consumer price indices' and total imports of goods as explanatory variables for four Western Balkan countries (Macedonia, Croatia, Serbia and Albania) over the period 2007-2015..*

**Keywords:** *Migration, workers' remittances, macroeconomic effects, panel data, the Western Balkan countries*

### 1. INTRODUCTION

Migrant remittances have been in the focus of researchers and policy makers for years due to their magnitude and positive impact on a micro and a macro level. However, the interest in this topic has resurged recently as a result of the upward trend of migrant remittances in the last decade and especially of the striking increase of remittance inflows to the developing countries, which have reached the amount of US Dollar 441 billion in 2015 (World Bank, 2017) thus becoming the second largest source of external capital flows behind foreign direct investment. Remittances are an extremely important source of external financing for the Western Balkan countries. During the latest global financial crisis, they helped these countries to maintain their foreign exchange reserves stable and to decrease their current account deficits. The trends of migrant remittances inflows to the Western Balkan countries in the period 2007-2016 are depicted in Figure 1. Among the analysed countries, in the last ten years Serbia has recorded the highest annual average amount of remittance inflows (US Dollar 3,814.39 million), followed by Bosnia and Herzegovina with an average annual amount of US Dollar 2,079.28 million and US Dollar 2,046.59 million in Croatia. It should be noted that these figures are official figures, and the World Bank suggests that remittances sent through informal channels could add at least 50% to the official estimate.

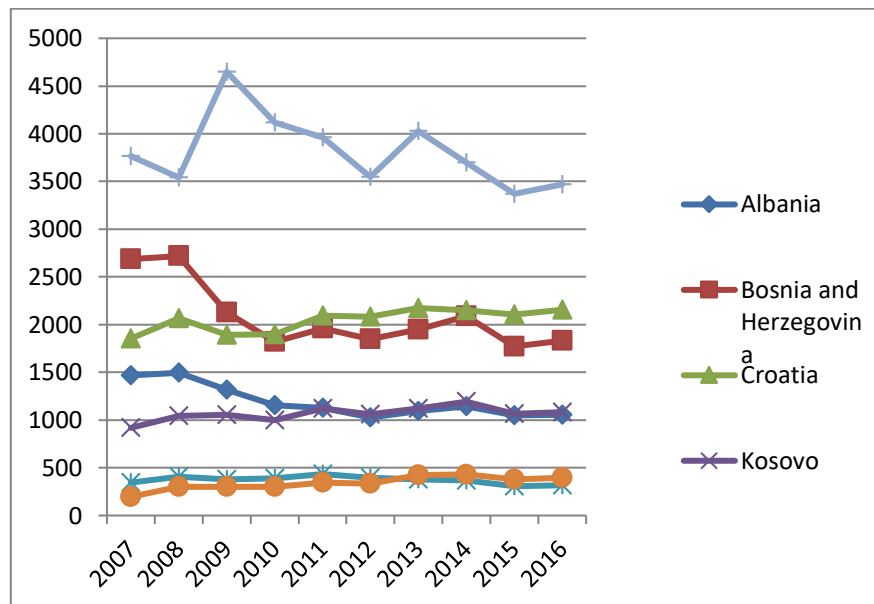


Figure 1: Migrant remittance inflows to the Western Balkan countries in million of US dollars, 2007-2016

(Source: <http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues>)

In the same period the inward remittances per capita in the Western Balkan countries have remained stable, with Montenegro and Kosovo recording the highest amounts of remittances per capita in 2016 (USD 635.69 and USD 611.91, respectively), and Macedonia with the lowest remittances per capita (USD 152.37).

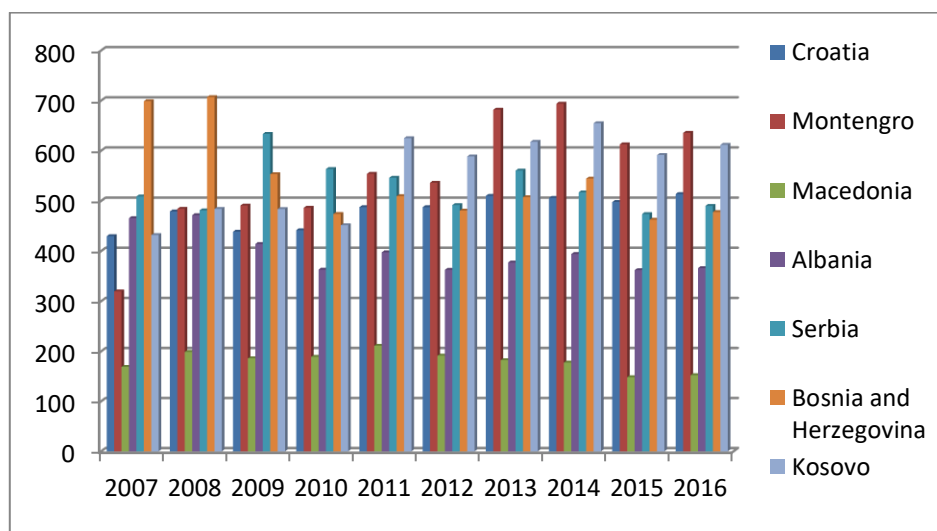


Figure 2: Per capita remittance inflows in US Dollars in the Western Balkan countries, 2007-2016

Source: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database) and <http://econ.worldbank.org/>

Regarding the share of remittances in GDP (Figure 3), particularly high are remittances as a share of GDP in Kosovo (16.7%) and Bosnia-Herzegovina (11.1%). They are somewhat less important for Croatia and Macedonia (4.3 % of GDP and 3.0 % of GDP, respectively), which are more similar to the CEE region in this regard.

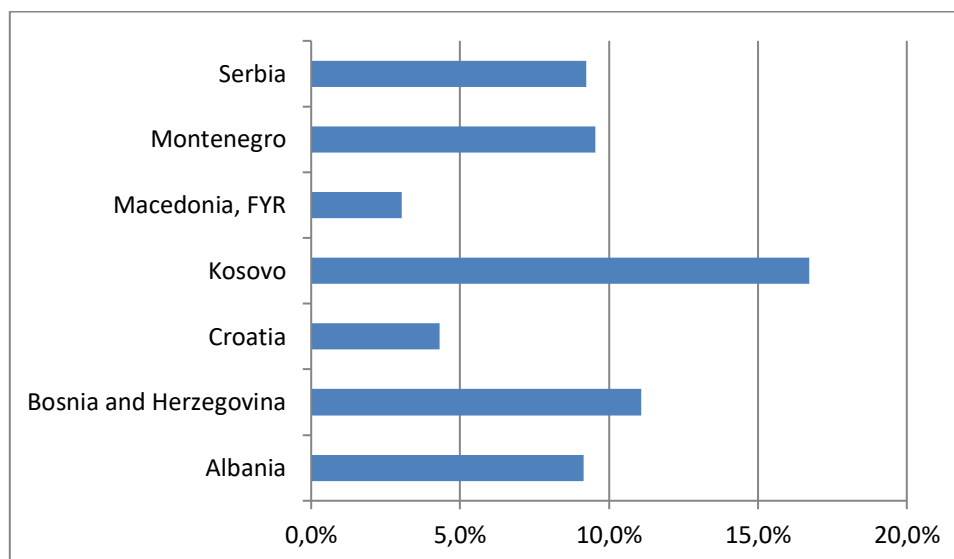


Figure 3: Share of total remittance inflows in GDP (in %) in the Western Balkan countries in 2015.

Source: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database) and <http://econ.worldbank.org>

## 2. LITERATURE REVIEW

In the economic literature as well as in the empirical research there is no consensus on the issue whether or not remittances are a stabilizing or a destabilizing factor of the home economies. According to Ratha (2003) migrants may increase remittances in times of economic hardship. Rapoport and Docquier (2005) find that migrants' remittances are motivated by altruism and as such are expected to move countercyclical to the GDP in the recipient country. However, since the decision to remit money is influenced not only by altruism, but by a number of determinants, it is conceivable that remittances may be procyclical or even acyclical with the GDP in some of the recipient countries (Sayan, 2006). When they are countercyclical with the business cycle of the recipient country, they serve as a macroeconomic stabilizer. On the other hand when they are procyclical they may act as a destabilizing effect by amplifying cyclical fluctuations in GDP (Sayan and Tekin-Koru, 2007).

Nsiah and Fayissa (2011) examined the relationship between economic growth and remittances using panel data of 64 countries in the period 1987–2007 and found that there is a positive relationship between remittances and economic growth. Rao and Hassan (2012) found that the direct effects of remittances on growth are insignificant, but positive. Using panel estimation methods and annual data over the period 1995–2011, Zizi (2014) found that remittances have significant and positive on both absolute and relative GDP growth the analyzed ten Central and Eastern European countries. Salahuddin and Gow (2015) investigated the relationship between migrant remittances and economic growth using panel data for the period 1977–2012 for some of the largest recipient countries of foreign remittances in the world (Bangladesh, India, Pakistan and the Philippines). The obtained results indicated a highly significant long-run positive relationship between remittance and economic growth in these countries, and an insignificant positive association between them in the short run. On the other hand, Chami et al. (2008) found that migrant remittances have negative impact on growth. “The results suggest, moreover, that remittances may be reducing economic growth in many countries. When endogeneity is controlled for, the effect of remittances becomes negative and significant regardless of whether investment is excluded.” (Chami et al., 2008, p. 64 and p. 65)



The purpose of our paper is to investigate whether remittances sent to the Western Balkan countries have a stabilizing or destabilizing effect on their economies, especially in time of financial shocks, such as the latest global economic and financial crisis 2008/2009. To achieve this objective, we estimate a model with fixed effects of cross sections using the panel quarterly data on migrant remittances per capita as a dependent variable and GDP per capita, gross monthly wages, unemployment rates, consumer price indices, trade balances and total imports of goods as explanatory variables for four Western Balkan countries (Macedonia, Croatia, Albania and Serbia) in the period 2007-2015 (144 observations). Data for all variables were obtained from Eurostat statistical database. Bosnia and Herzegovina, Montenegro and Kosovo are not included in the sample due to missing actual quarterly observations.

### 3. METHODOLOGY AND DATA

The selection of explanatory variables is based on previous empirical studies on the macroeconomic determinants of remittances (Schiopu, I. and Siegfried, N., 2006; Vargas-Silva and Huang, 2005; Schrooten, 2005). These studies usually focus on the number of workers, wage rates and economic situation in host country, economic situation in country of origin, the exchange rates and relative interest rate between the sending and receiving country and political risk and facilities to transfer funds (i.e. institutions). Data for all explanatory variables are obtained from one source, the Eurostat database and for the dependent variable from the World Bank database which makes the obtained results reliable and comparable.

GDP per capita (further in text GDP) is taken as a proxy for the state of the economic activity in the migrants' home countries. A number of empirical studies (e.g. El-Sakka and McNabb, 1999; De la Brière et al., 2002) suggest that remittances have a negative correlation with the previous month's GDP. Lower economic activity in periods of shocks, may increase the need for remittances to be sent, which may induce current migrants to send money or cause migration in the first place. This finding can be interpreted as evidence of counter cyclical behaviour of remittances. On the other hand, Aydaş et al. (2004) argue that remittance flows tend to increase following respectively the rise of the GDP per capita and the growth rate of the home country (procyclical behaviour).

The unemployment rate (UNRATE) and monthly gross wages in (WAGES) are taken as proxies for the labour market situation in the home country. The higher unemployment rate in the home country can be expected to increase the incentives for migration which may consequently cause increase of remittances. "The level of development of the households' community also plays an important role here. While bad economic situation and high unemployment may be a cause for migration, the household's community needs to have a certain level of development for investment by the household to be effective. Consequently it is possible fewer remittances are sent to underdeveloped countries." (Hagen-Zanker and Siegel, 2007, p.7). Lower gross wages in the home country can be expected to increase the incentives to remit money home, and consequently negative sign is expected for this explanatory variable. However, as Cox, Eser and Jimenez (1998) demonstrate, income may have a different effect at different points of the income distribution. The motive may even change at different points of the income distribution. The impact of inflation (proxied by consumer price index - CPI) on migrant remittances is also ambiguous. Higher inflation rates would cause remittance inflows to decline suggesting that inflation acts as a proxy for macroeconomic instability and risks and therefore discourages the inflow of remittances. Since high inflation rate affects negatively the purchasing power of the migrant families in the home country, remittances may increase in order to compensate for the loss of purchasing power which is in line with the altruism motive for remitting money.

According to Loser et al. (2006), remittance inflows to a migrant’s home country are expected to encourage the domestic demand for tradable goods. The inflow of remittances has a positive effect on import of goods. As income of households increase as a result of remittance inflows, so thus the demand for goods imported from abroad.

After explaining the expected signs of the explanatory variables that enter our model of remittance inflows per capita, we first test for the presence of unit roots in the macroeconomic time series using Phillips-Perron test and find that all the series are stationary except the unemployment rate and CPI which are integrated of order one. The values of the test as well as the p-values are presented in Table 1. The choice of model, that is whether to include an intercept or time trend, is based on the approach of Doldado et.al. (1990). Under this approach, one starts with the least restrictive of plausible models (the test equation includes both the trend and intercept) and then introduces restrictions until the null hypothesis of a unit root is rejected (if at all).

Table 1: Unit root test of the series

|         | Level                          |         | First difference               |         |
|---------|--------------------------------|---------|--------------------------------|---------|
|         | Phillips-Perron unit root test | P value | Phillips-Perron unit root test | P value |
| REMITPC | 47.5877                        | 0.0000  | /                              | /       |
| GDP     | 45.1057                        | 0.0000  | /                              | /       |
| IMPORT  | 35.6426                        | 0.0000  | /                              | /       |
| CPI     | 11.0280                        | 0.2001  | 55.1168                        | 0.0000  |
| UNRATE  | 3.62053                        | 0.8896  | 102.326                        | 0.0000  |
| WAGES   | 30.9407                        | 0.0001  | /                              | /       |

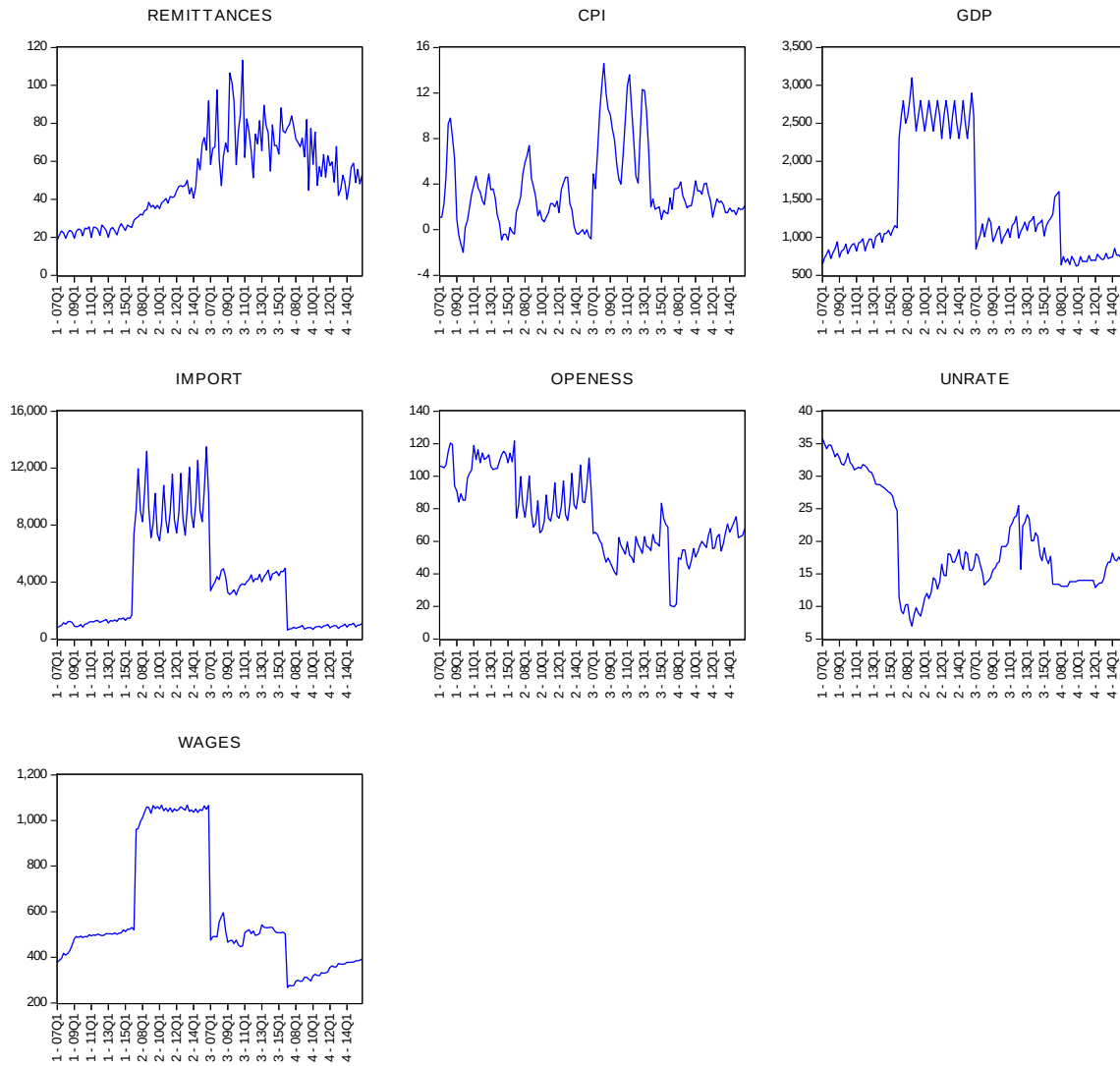
*Source: Author’s own calculations*

All the results are obtained for test equations in which we included only the individual intercepts.

A graph of the series is shown in Figure 4. We can notice that GDP, import and wages move in similar way in time.

*Figure following on the next page*

Figure 4: Graph of the series



Source: Author's own calculations

The next step is to test if there is a cointegration among the variables applying procedure for panel data. Since we are working with panel data we use Pedroni cointegration test between remittances per capita, GDP, import, consumer price index, unemployment rate for all the countries subject to interest. The results of testing for cointegration are given in Table 2. Five out of eight statistics show that there is no cointegration among these variables.

Table 2: Pedroni cointegration test

|                     | <u>Statistic</u> | <u>Prob.</u> | <u>Weighted<br/>Statistic</u> | <u>Prob.</u> |
|---------------------|------------------|--------------|-------------------------------|--------------|
| Panel v-Statistic   | -1.432096        | 0.9239       | -2.118427                     | 0.9829       |
| Panel rho-Statistic | -1.551275        | 0.0604       | -1.072827                     | 0.1417       |
| Panel PP-Statistic  | -5.145874        | 0.0000       | -6.857001                     | 0.0000       |
| Panel ADF-Statistic | -1.543149        | 0.0614       | -4.451390                     | 0.0000       |

Source: Author's own calculations

#### 4. MODEL AND RESULTS

The estimated OLS regression equation with remittances as a dependent variable is shown in Table 3.

*Table 3: Estimated regression*

|                                                   |             |                              |             |          |
|---------------------------------------------------|-------------|------------------------------|-------------|----------|
| Dependent Variable: REMITTANCES                   |             |                              |             |          |
| Method: Panel EGLS (Period weights)               |             |                              |             |          |
| Sample (adjusted): 2007Q2 2015Q4                  |             |                              |             |          |
| Periods included: 35                              |             |                              |             |          |
| Cross-sections included: 4                        |             |                              |             |          |
| Total panel (balanced) observations: 140          |             |                              |             |          |
| Linear estimation after one-step weighting matrix |             |                              |             |          |
| Variable                                          | Coefficient | Std. Error                   | t-Statistic | Prob.    |
| C                                                 | 18.66111    | 5.831578                     | 3.200011    | 0.0018   |
| IMPORT                                            | 0.001816    | 0.000693                     | 2.621705    | 0.0101   |
| GDP(-1)                                           | 0.008999    | 0.004018                     | 2.239508    | 0.0274   |
| D(UNRATE)                                         | -0.781113   | 0.407827                     | -1.915306   | 0.0583   |
| REMITTANCES(-1)                                   | 0.809347    | 0.051632                     | 15.67541    | 0.0000   |
| D(CPI)                                            | 0.414086    | 0.445433                     | 0.929625    | 0.3548   |
| WAGES                                             | -0.047126   | 0.016070                     | -2.932512   | 0.0042   |
|                                                   |             | <i>Effects Specification</i> |             |          |
| <i>Period fixed (dummy variables)</i>             |             |                              |             |          |
| Weighted Statistics                               |             |                              |             |          |
| R-squared                                         | 0.926144    | Mean dependent var           |             | 72.60349 |
| Adjusted R-squared                                | 0.896303    | S.D. dependent var           |             | 53.01647 |
| S.E. of regression                                | 10.61636    | Sum squared resid            |             | 11158.00 |
| F-statistic                                       | 31.03610    | Durbin-Watson stat           |             | 2.558480 |
| Prob(F-statistic)                                 | 0.000000    |                              |             |          |
| Unweighted Statistics                             |             |                              |             |          |
| R-squared                                         | 0.832550    | Mean dependent var           |             | 50.69058 |
| Sum squared resid                                 | 11566.97    | Durbin-Watson stat           |             | 2.583686 |

*Source: Author's own calculations*

As we can see from Table 4, all the variables except CPI are statistically significant. The above obtained estimates are in favour of the evidence that remittance inflows to the analysed four Western Balkan countries exhibit slightly procyclical variations. Namely, in periods when GDP in the sample countries is growing, the remittance inflows to these countries are also increasing.

#### 5. CONSLUSION

Contrary to the theoretically plausible counter-cyclical argument of remittance flows to emerging market economies, our econometric analysis has shown that migrant remittance flows to Western Balkan countries are positively correlated with GDP. However this correlation is not economically significant, implying that remittances could not cushion large fluctuations in the output of Western Balkan countries in times of recession or economic downturn. These findings have important policy implications. First, due to the procyclical behaviour, remittances cannot be a substitute for good economic policies and structural reforms. Second, given the

important economic benefits of remittances to the Western Balkan countries and the fact that they are far more stable source of external financing, unlike FDI, policy makers in these countries should refocus from motivating the foreign investors to maximizing the developmental impact of remittances by offering more investment opportunities to emigrants, especially to those ones who wish to return to their home countries and start their own business.

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## OPTIMAL ORDERING QUANTITIES WITH STOCHASTIC DEMAND UNDER DETERIORATION AND AMELIORATION

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### ABSTRACT

*Both deteriorating and ameliorating goods are commonly used in recent years, which increase the likelihood of waste and holding costs respectively. Especially, high deteriorating goods incur waste and changes in material supply and demand; nevertheless, ameliorating goods increase holding costs while adding value over time. These topics follow the conditions of once ordering and single goods with stochastic demands that can be served in the newsvendor problem. In this study, newsvendor problem models are used to derive the optimal solutions such that the expected profits are maximized.*

**Keywords:** Deterioration; Amelioration; Newsvendor

### 1. INTRODUCTION

Taiwan encounters many natural disasters such as Typhoons. These disasters cause drastic changes in the economic landscape, such as changes in material supply and demand resulting in rapid price fluctuation. As a result, consumers disapprove of the increase in prices and suppliers are strained due to the increase in demand and limited supply. Items such as eggs and meat have a limited-shelf life with high deterioration rate, the longer these items are not sold, increases the likelihood of waste and losses. Chung and Tsai (2001) considered inventory systems for deteriorating items with shortages and a linear trend in demand-taking account of time value. Hsu (2012) studied optimal ordering policy for fast deteriorating Items. Tripathi and Mishra (2014) derived a deterministic inventory model for deteriorating items with inventory dependent demand rate and developed an order level inventory model with single warehouse where shortages are allowed and it is completely backlogged. Chen and Teng (2015) established a supplier–retailer–customer supply chain model in which: (a) the retailer receives an up-stream trade credit from the supplier while grants a down-stream trade credit to customers, (b) the deterioration rate is non-decreasing over time and near 100 percent particularly close to its expiration date, and (c) discounted cash flow analysis is adopted for calculating all relevant factors revenue and costs. Sarkar and Saren (2016) described a deteriorating production process which randomly shifts to out-of-control state from in-control state. In case of full inspection policy, expected total cost together within section cost results higher inventory cost. Therefore, product inspection policy is better to use for reducing inspection costs. Being faced with high deterioration rate, how can businesses manage their inventory in order to remain competitive, but minimize losses due to goods that deteriorate over time?

In recent years, many businesses have shifted their focus to ameliorating goods such as wine and antiques. The value of these goods increase over time adding value to original purchases, however, such goods have increased holding costs as well. It is also worth exploring the effects of inflation on the sale of these goods due to the long sale period. Mondal et al. (2003) studied an inventory system of ameliorating items for price dependent demand rate. Moon and Giri (2005) incorporated the ameliorating/deteriorating items of stored items into inventory model.

They developed that models with time-varying demand pattern over a finite planning horizon, taking into account the effects of inflation and time value of money. Wee et al. (2008) developed an optimal replenishment inventory strategy to consider both ameliorating and deteriorating effects taking account of time value of money and finite planning horizon.

The above topics follow the conditions of once ordering and single goods with stochastic demands that can be served in the newsvendor problem. Research on the newsvendor problem has received much attention in the past. Most of the research has focused on problems resulting from the tradeoff between ordering too much or too little, but there has been little research on goods of amelioration and deterioration. Businesses must appropriately manage ordering due to the uncertainty of customer demand when order goods of amelioration or deterioration before the special festival or natural disasters. In this study, the retailer orders the products and then sells to the customers. The retailer has to consider the uncertainty in customers' need. Newsvendor problem model is used to derive an optimal solution such that the expected profit is maximized.

## 2. NOTATIONS

The following notations are used in our analysis:

|            |                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| $E\pi_d$   | the expected profit for the supplier in the deterioration case                                                                                       |
| $E\pi_a$   | the expected profit for the supplier in the amelioration case                                                                                        |
| $Q$        | the ordering quantity; decision variable                                                                                                             |
| $Q^*$      | the optimal ordering quantity for the supplier considering limited production quantity                                                               |
| $p_1$      | the lower bound of the selling price per unit                                                                                                        |
| $p_2$      | the upper bound of selling price per unit                                                                                                            |
| $pd(Q)$    | the selling price per unit with considering ordering quantity under the deterioration case ; which is a function of ordering quantity                |
| $k$        | the number of sold-out period (month), that is the number of time period which all the items are sold out; decision variable                         |
| $pa(Q, k)$ | the selling price per unit with considering ordering quantity in the amelioration case; which is a function of ordering quantity and sold-out period |
| $\theta$   | the constant deterioration rate                                                                                                                      |
| $\lambda$  | ameliorating rate                                                                                                                                    |
| $\alpha$   | interest rate per period                                                                                                                             |
| $c_p$      | the wholesale price per unit; $c_p < pd(Q)$                                                                                                          |
| $h$        | the holding cost per unit per period (month)                                                                                                         |
| $s$        | the salvage value per unit $s < c_p$                                                                                                                 |
| $r$        | the shortage cost per unit; represents costs of lost goodwill                                                                                        |
| $x$        | the random demand with the PDF (Probability Density Function), $f(x)$ , and CDF (Cumulative Distribution Function), $F(x)$                           |

## 3. MODELING AND ASSUMPTIONS

In this section, two models are formulated to obtain the expected profit. Throughout this study, single order is assumed. The retailer orders a batch of the products,  $Q$ , and sells to the customers. The customers' demand is stochastic. The unit price of the product is  $c_p$ . Two cases are



discussed: (i) When the items are deteriorating with deteriorating rate and short sale period. (ii) When the items are ameliorating (no deteriorating) with long sale period.

(i) Deterioration

Deteriorating inventory was originally studied by Ghare and Schrader (1963). Items such as eggs and meat have a limited-shelf life with fast deterioration rate, the longer these items are not sold, increases the likelihood of waste and losses. These products will deteriorate expeditiously with time resulting in fast decreasing utility or price from the original one. Moreover, the customer demand declines when the product is close to its expiration date. The loss of profit is caused by deterioration and declining demand. (Hsu, 2012)

In this case, the net present value is not considered due to the short selling period, while the deterioration is considered. It is assumed that the unit selling price is  $pd(Q)$ , which  $pd(Q)$  depends on  $Q$ , the constant deterioration rate is  $\theta$ . If the ordering quantity is  $Q$ , then the last quantity of good items in the selling period can be assumed as  $(1-\theta)Q$ , and the defective items are discarded. When the sale quantity is less than the batch  $(1-\theta)Q$ , the leftover is sold with the unit salvage value  $s$ . When the demand is more than the batch,  $(1-\theta)Q$ , the shortage occurs. In here, shortage backordered is not allowed and the shortage unit cost is  $r$ . With the uncertainty in the customers' demand to be  $x$ , the retailer will order an optimal batch of the products,  $Q^*$ , according to its optimal expected profit. If the retailer manages the ordering batch of the products (that is, limited ordering quantity) for marketing and business purposes, then the consumers' perceived value and purchase decisions are usually influenced by the effect of scarcity. Furthermore, the unit selling price,  $pd(Q)$ , of the limited quantity products can be increased, where  $pd(Q)$  is a decreasing function of  $Q$ . However, the customers' demand will decrease due to the higher selling price simultaneously. Thus, in this study the random demand depends on ordering batch,  $Q$ , of the products. That means the PDF,  $f(x)$ , of the random demand  $x$  is a function of  $Q$ . The suppliers' expected profit function  $E\pi d$  is given as follows:

$E\pi d$  = the expected profit of less demand-deterioration cost + the expected profit of excess demand

$$E\pi d(Q) = \int_0^{(1-\theta)Q} \left\{ [pd(Q) - c_p]x - (c_p - s)((1-\theta)Q - x) \right\} f(x) dx - c_p \theta Q + \int_{(1-\theta)Q}^{Bd(Q)} \left\{ [pd(Q) - c_p](1-\theta)Q - (x - (1-\theta)Q)r \right\} f(x) dx, \quad (1)$$

where

$$pd(Q) = \frac{p_2 - p_1}{Q^{0.1}} + p_1, \quad p_2 > p_1 > 0, \quad Q \geq 1. \quad (2)$$

Which denotes  $p_1 < p(Q) < p_2$ , a decreasing function of  $Q$ , and means that the unit selling price influenced by limited ordering quantity due to critical period (e.g. natural disaster, festival). The random demand uniformly distributed over the range 0 and  $B(Q)$  for the retailer is assumed, where

$$Bd(Q) = \frac{bp_1}{pd(Q)}, \quad (3)$$

is a function of  $Q$  with positive constant  $b$  ( $b$  is the upper bound of the selling quantity). This means that a higher selling price would decrease the demand.

Thus, the PDF of the supplier's demand is

$$fd(x) = \frac{1}{Bd(Q)}. \quad (4)$$

Our problem can be formulated as:

$$\text{Max: } E\pi d(Q). \quad (5)$$

**Example 1.** Given  $p_2=50$ ,  $p_1=30$ ,  $c_p=20$ ,  $b=1000$ ,  $s=5$ ,  $\theta=0.1$  and  $r=2$ , then

$$E\pi d(Q) = (-0.02Q^2 + 72Q^{1.1} + 251.2Q^{1.2} - 0.13Q^{2.1} - 0.28Q^{2.2} - 0.27Q^{2.3} - 0.09Q^{2.4} \\ + 267.6Q^{1.3} + 79.2Q^{1.4} - 6000Q^{0.3} - 9000Q^{0.4}) / (Q^{0.2}(2 + 3Q^{0.1})^2).$$

$$E\pi d'(Q) = 0.5 * (-0.16Q^2 + 259Q^{1.1} - 1.2Q^{2.1} - 3.5Q^{2.2} - 5.3Q^{2.3} \\ - 3.9Q^{2.4} - 240Q^{0.3} - 3600Q^{0.4} + 2383Q^{1.3} - 1.2Q^{2.5} \\ + 1307Q^{1.2} + 1825Q^{1.4} + 475Q^{1.5}) / (Q^{1.2}(2 + 3Q^{0.1})^3).$$

$$E\pi d''(Q) = (2160Q^{1.3} - 26Q^{1.1} - 1.8Q^{2.6} + 5940Q^{0.5} - 156Q^{1.2} \\ - 350Q^{1.3} - 350Q^{1.2} - 131Q^{1.5} - 4.6Q^{2.2} - 1.2Q^{2.1} \\ - 11Q^{2.4} - 9.5Q^{2.3} - 0.12Q^2 - 6.9Q^{2.5} + 7200Q^{0.4}) / (Q^{2.2}(2 + 3Q^{0.1})^4).$$

Figure 3 shows that  $E\pi d''(Q)$  are negative as  $Q > 50$ . That means that  $E\pi d''(Q) < 0$ , leads to the concavity of  $E\pi d(Q)$  as  $Q > 40$ . The concavity of  $E\pi d(Q)$  is also illustrated in Figure 1, which reaches the maximum in the interval  $[300, 500]$ . Figure 2 presents the shape of  $E\pi d'(Q)$ , which means the root of  $E\pi d'(Q) = 0$  is located in the interval  $[360, 440]$ . Set  $E\pi d'(Q)$  equals to zero, using Software Maple 8,  $Q^* = 432.1$  is derived, the optimal selling price per unit  $pd(Q^*) = \$40.9$ , the optimal expected profit  $E\pi d(Q^*) = \$3401$ .

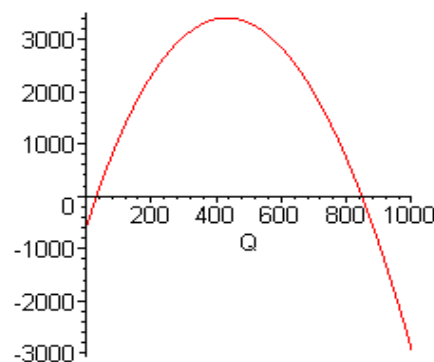


Figure 1. The graphic presentation of  $E\pi d(Q)$  on  $[0, 1000]$  in example 1.

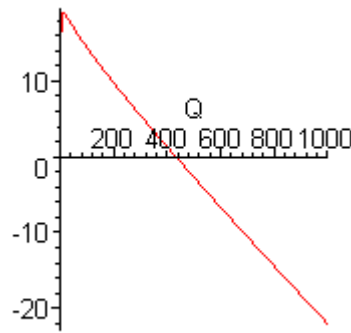


Figure 2. The graphic presentation of  $E\pi d'(Q)$  on  $[0,1000]$  in example 1.

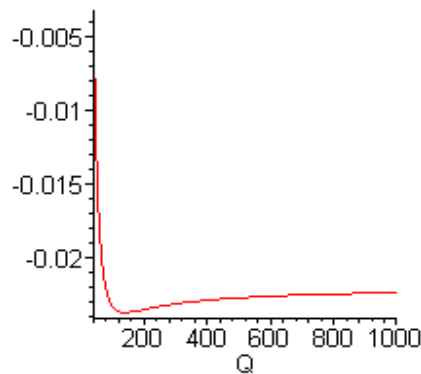


Figure 3. The graphic presentation of  $E\pi d''(Q)$  on  $[40,1000]$  in example 1.

## (ii) Amelioration

In recent years, many businesses have shifted their focus to ameliorating goods such as wine and antiques. The value of these goods increase over time adding value to original purchases, however, such goods have increased holding costs as well. It is also worth exploring the effects of inflation on the sale of these goods due to the long sale period.

In this case, the net present value is considered due to the long sold-out period, while the deterioration is not considered.

It is assumed that the unit selling price is  $pa(Q,k)$ , which  $pa(Q,k)$  depends on  $Q$  and the number of sold-out period,  $k$ , with  $pa(Q,k)$  increases as  $k$  increases. If the ordering quantity is  $Q$ , when the sale quantity is less than the batch  $Q$ , the leftover is sold with the unit salvage value  $s$ . When the demand is more than the batch,  $Q$ , the shortage occurs. In here, shortage backordered is not allowed and the shortage unit cost is  $r$ . With the uncertainty in the customers' demand to be  $x$ , the retailer will order an optimal batch of the products,  $Q^*$ , according to its optimal expected profit.

If the retailer manages the ordering batch of the products (that is, limited ordering quantity) for marketing and business purposes, then the consumers' perceived value and purchase decisions are usually influenced by the effect of scarcity. Furthermore, the unit selling price,  $pa(Q,k)$ , of the limited quantity products can be increased as the long selling period because

the nature of amelioration. However, the customers' demand will decrease due to the higher selling price simultaneously. Thus, in this study the random demand depends on ordering batch and sold-out period. That means the PDF,  $f(x)$ , of the random demand  $x$  is a function of  $Q$ . The suppliers' expected profit function  $E\pi d$  is given as follows:

$$E\pi a(Q, k) = \int_0^Q \left\{ [pa(Q, k) - c_p]x - (c_p - s)(Q - x) \right\} fa(x) dx + \int_Q^{Ba(Q, k)} \left\{ [pa(Q, k) - c_p]Q - (x - Q)r \right\} fa(x) dx - khQ. \quad (6)$$

Where

$$pa(Q, k) = pd(Q) \ln(e + \lambda k) e^{-\alpha k / 2}. \quad (7)$$

is a function of  $Q$  and  $k$ , and means that the unit selling price influenced by limited ordering quantity and selling period. The multiple item  $\ln(e + \lambda k)$  means that the more selling period, the more selling price, where  $\lambda$  is constant. The multiple item  $e^{-\alpha k / 2}$  is discounted present value rate of money, where  $\alpha$  is constant.

The random demand uniformly distributed over the range 0 and  $Ba(Q, k)$  for the retailer is assumed, where

$$Ba(Q, k) = \frac{bp_1}{pa(Q, k)}. \quad (8)$$

is a function of  $Q$  and  $k$  with positive constant  $b$  ( $b$  is the upper bound of the selling quantity). This means that a higher selling price would decrease the demand. Thus, the PDF of the supplier's demand is

$$fa(x) = \frac{1}{Ba(Q, k)}. \quad (9)$$

Our problem can be formulated as:

$$Max : E\pi a(Q, k). \quad (10)$$

**Example 2.** Given  $p_2=500$ ,  $p_1=300$ ,  $c_p=200$ ,  $b=1000$ ,  $s=50$ ,  $r=20$ ,  $\alpha=0.01$ ,  $\lambda=0.2$  and  $h=5$  then

The graphic presentation of Hessian matrix function of  $E\pi a(Q, k)$  on  $[250, 450] \times [1, 20]$  is illustrated in Figure 4. The graph shows the Hessian matrix is positive on  $[250, 450] \times [1, 20]$ .

The concavity of  $E\pi a(Q, k)$  is illustrated in Figure 5. Set both  $\frac{\partial}{\partial Q} E\pi a(Q, k)$ , and

$\frac{\partial}{\partial k} E\pi a(Q, k)$  equal to zero, using Software Maple 8,  $Q^*=307.9$ , and  $k^*=11.275$  are derived, the optimal selling price per unit  $pa(Q^*, k^*)=\$625.8$ , the optimal expected profit  $E\pi d(Q^*)=\$56200$ .

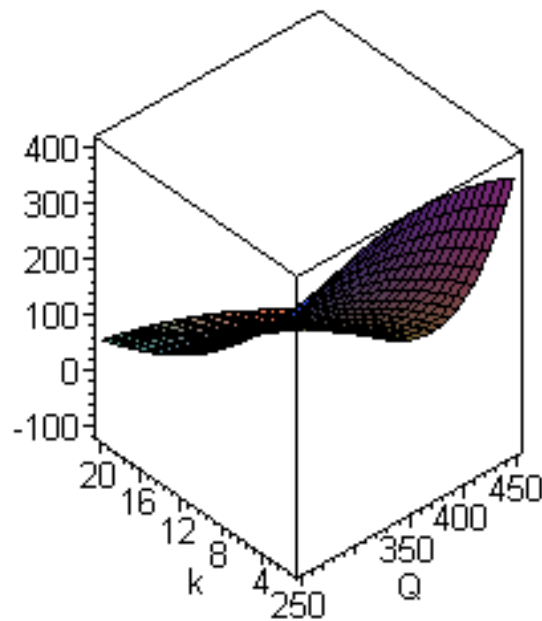


Figure 4. The graphic presentation of Hessian matrix function of  $E\pi(Q, k)$  on  $[250, 450] \times [1, 20]$  in example 2.

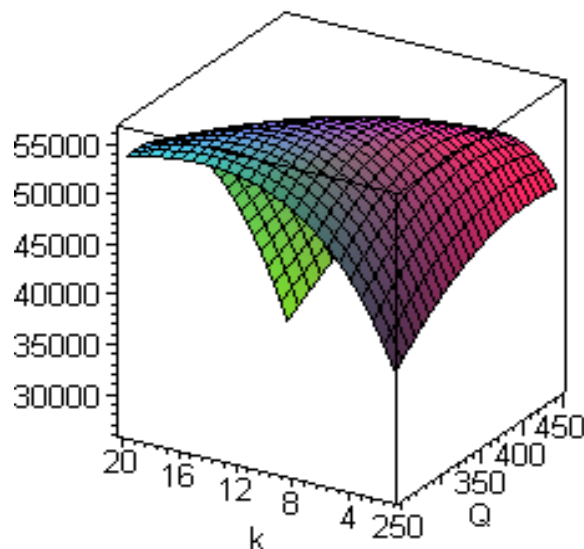


Figure 5. The graphic presentation of  $E\pi(Q, k)$  on  $[250, 450] \times [1, 20]$  in example 2.

#### 4. CONCLUSION

High deteriorating goods incur waste and changes in material supply and demand; ameliorating goods increase holding costs while adding value over time. How to decide the order quantities is important to the managers. This study derives two newsvendor problem models of deterioration and amelioration. Analyzing the system provides managerial insights on how to develop the optimal strategies. An illustrative case study, numerical examples, and sensitivity analysis are presented to demonstrate the proposed model.

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## THE METHODOLOGY OF REGION ECONOMIC DEVELOPMENT EVALUATION USING MOBILE POSITIONING DATA

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### ABSTRACT

*Aggregate business conditions are vital for the public and decision-makers as to make real decisions, accurate and timely estimates of the conditions should be available. One of the national statistics tasks is to provide with reliable information on the economic, social and demographic processes based on internationally recognized methodology. However, it is not permanently available, especially in municipalities level due to confidentiality restrictions or due to high costs, and this statistic always proclaims economic activity changes long after the fact. At the same time, the companies with operations and customers throughout the Latvia regions collect and regularly update a customer database. So, the rapid development of mobile technologies is giving the new source of statistical data, mobile positioning data, to evaluate the economic development of regions. The objective of the paper is to test mobile positioning data suitability for a theoretical model of updatable Latvian regional business index. The source of the Call Data Record is the largest Latvian mobile network operator "Latvijas Mobilais Telefons". The latency of business conditions is consistent with economic theory which emphasizes that economic activity is about the dynamics and co-movement of many observable variables, so factor analysis was utilized to get basic statistics for Latvian regional business index. It is the clear difference between weekdays and weekend days that indicate call activity relation to economic activity. The results show the difference of the number of call and number of unique users, as well average call intensity between cities and counties. That could be justified by regions size (number of inhabitants, the density of population) as well as by different economic activity in the regions. Cities and counties with the less call activities have a lower economic activity to compare with the other region with high call activities during normal working hours.*

**Keywords:** *Cluster analysis, Factor analysis, Indicators of economic activity, Mobile positioning data, Regional economics*

## 1. INTRODUCTION

One of the national statistics task is to provide the public and decision-makers with reliable information on the economic, social and demographic processes based on internationally recognized methodology. However, data at municipality level is not always available due to the confidentiality restrictions or due to high costs where the sample method should be replaced by a population, rural or business census. At the same time, the companies with operations and customers throughout Latvia collect and regularly update a customer database. This is a prerequisite for the use of large databases and data mining tools to develop an efficient algorithm design methods for predicting the trends of the region economic activity and making the knowledge-based strategic and investment decisions. In addition, using the developed data processing and machine learning methods it is possible to automate the forecasting determination, thus saving time and human resources inversely to the classical statistical methods. The rapid development of mobile technologies is giving the new source of statistical data – mobile positioning data, which make it possible to use them for evaluation of region development dynamics in social and geography sciences research. In the literature, the following taxonomy is identified related to the mobile data applications: mobility and transportation, the urban economy, public safety and land-use planning (Steenbruggen, Tranos, Nijkamp, 2015, p. 340). Authors E. de Jonge, M. Pelt and Roos have assumed that the number of phone calls can be an indicator of economic activity in a certain region and mobile phone data “might lead to an indicator that shows that economic activity for a certain region is changing”. Clusters of regions that are residential, commercial or business areas are offered to detect using a call activity pattern, but have concluded that a more detailed research is needed (de Jonge, Pelt, Roos, 2012, p. 17). There is wide range of mobile data applications in transport analysis for better planning the public transport network, evaluation the economic activity in different regions or sectors of economy (regional or sectoral economic activity), estimation of population density in real-time due public safety reasons and sustainable development of cities. Despite of them “there are as yet only a few solid examples of using such data in real-life urban management” Steenbruggen, Tranos, Nijkamp, 2015, p. 342). The lack of real mobile data applications is due the unavailability of mobile position data; due to customer data protection and business interests, the data usages in research have limitations. The most common format is the Call Data Record (CDR), according to which subscribers' mobile phone activities are recorded each time a user uses a service. According the strict EU regulations in the protection of individuals with regard to the processing of personal data and on the free movement of such data (Directive 95/46/EC, 1995) and processing of personal data and the protection of privacy in the electronic communications sector (Directive 2002/58/EC, 2002) only anonymized location data can be processed or after having gained the consent of the user. In human activity-travel behaviour research (Jarv, Ahas, Witlox, 2014, p. 126) the database contains outgoing call activities records with at least the following parameters: a random ID number of the phone; the exact time and date; and the mobile network antenna that provided the network signal for the call activity. In regional call activity research (de Jonge, Pelt, Roos, 2012, p. 17) the mobile phone data contains the location and scrambled version of the unique phone ID of each call. There is currently no established Latvian regional business index, as well the information on the economic, social and demographic processes still are not available at the local government level. The planned result of the proposed research is the constantly updated Latvian regional business index, which is based on electricity consumption data, the mobile phone call data records and others economically significant data. The research results will make predictions about changes in economic activity at the municipal level; serve as tool for regional policy decisions makers and as investment profitability assessment tool for entrepreneurs. University of Latvia has a CDR data from the largest Latvian mobile network operator, Joint Stock Company “Latvijas Mobilais Telefons” (LMT), which is the first mobile operator in Latvia.



Now, LMT is the largest mobile operator in Latvia by the number of customers, turnover, network coverage and the widest customer service network. As the innovation leader in the market, LMT offers its clients a full range of high-quality telecommunications services - voice communications, high-speed mobile Internet without volume restrictions, as well as mobile TV LMT Stream. LMT pays great attention to innovation and sustainable development and in many positions considered to be innovation leaders not only in Latvia, but also in the Baltic region. To ensure the company's innovation and competitiveness in the future, the company will continue to develop processes related to research and development. The objective of the paper is to test mobile positioning data suitability for a theoretical model of updatable Latvian regional business index. The paper is divided into three parts. The first is made preliminary data analysis of CDR data with special attention to interconnection of number of call activity and number of unique users; the question of research is these data substitute or complement to each other. The second is tested two statements regard to call data changes and the logic of economic activity. The third and final is made conclusions about methods suitable for further development of business activity indicator.

## 2. PRELIMINARY ANALYSIS OF CDR DATA

The source of CDR data is the largest Latvian mobile network operator LMT. The database contains aggregate records of outgoing call and text-message activity during one week. The data were recorded during the period of June 1<sup>st</sup> 2016 until June 7<sup>th</sup> 2016. Each aggregate outgoing activity record (altogether 173680 aggregate CDR) includes the following parameters: call number of the call activities, number of unique phone owners, the exact date, aggregate time by 1 hour, and the mobile network antenna that provided the network signal for the call activity. Using the geographical coordinates of the 1235 network base stations geographical information about statistical region, cities, counties, towns and parishes were obtained (Table 1).

*Table 1. Extract from CDR database with added geographical information*

| Date       | Time  | Number of the   |                     | Base station ID | Statistical region | City or county    | Town or parish  |
|------------|-------|-----------------|---------------------|-----------------|--------------------|-------------------|-----------------|
|            |       | call activities | unique phone owners |                 |                    |                   |                 |
| 01.06.2016 | 00:00 | 11              | 8                   | 105015          | Riga               | Riga city         | Riga town       |
| 01.06.2016 | 01:00 | 4               | 3                   | 403501          | Pieriga            | Salacgriva county | Ainazu town     |
| 05.06.2016 | 17:00 | 108             | 60                  | 301701          | Zemgale            | Jelgava county    | Valgunde parish |

For statistical analysis the dataset was interpolated to Latvia network of administrative territories. On the first hierarchy level the 119 administrative territories include 9 cities under state jurisdiction and 110 counties, while at the second hierarchy level 564 county subdivisions are defined included 67 towns and 497 parishes. Administrative territories of the Republic of Latvia are distributed on 6 statistical regions: Riga region included Riga city; Pieriga region included Jurmala city and 28 counties; Vidzeme region included Valmiera city and 25 counties; Kurzeme region included Liepaja city, Ventspils city and 18 counties; Zemgale region included Jelgava city, Jekabpils city and 20 counties; Latgale region included Daugavpils city, Rezekne city and 19 counties. Using the geographical coordinates of the 1235 network base stations geographical information about statistical region, cities, counties, towns and parishes were obtained.

## 2.1. Time series for the total call activities

The data were provided for 6 days from June 1<sup>st</sup> to June 7<sup>th</sup> 2016 and the call number of the call activities and number of unique phone owners is shown in Figure 1. It is the clear difference between weekdays and weekend days that indicate call activity relation to economic activity. At the same time Figure 1 shows the difference in calls activities during the day and night time, where activity peak is around 12:00 for each day.

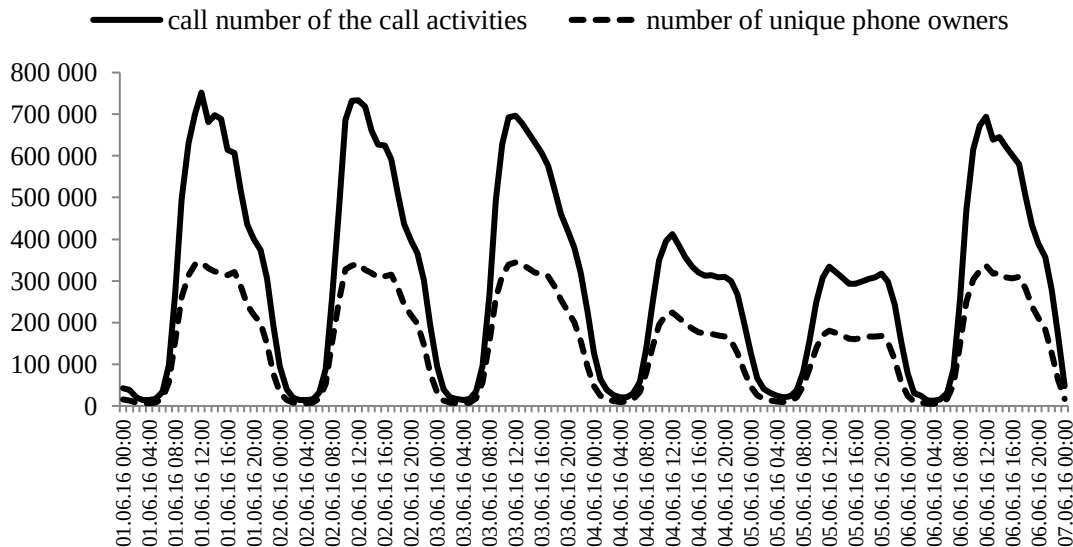


Figure 1: Time series of the call number of the call activities and number of unique phone owners

As expected, the close correlation between call number of the call activities and number of unique phone owners ( $r=0.984$ ) obtained from 1235 network base stations during six days by one hour frequency interval. To eliminate the effect of weekdays - weekends and working hours, there is calculated the intensity of call activities. The new variable was defined as ratio of the call number of the call activities to the number of unique phone owners by hours (Figure 2.). It is clear difference between average call intensity during the day and night time, where average call intensity activity peaks are around 00:00 and 12:00 for every day, does not matter weekday or weekend. Furthermore, the average call intensity activity peaks at 00:00 and 12:00 are accordingly 3.03 and 2.05 calls per unique phone owner per hour. Besides, it is difference between call activities intensity for weekdays and weekend days around 12:00 that indicate call activity relation to economic activity, while call activities intensity around 00:00 is approximately the same that indicate to night life recreation activity. The exploratory factor analysis on the method of principal components is proposed to identify factor, which explain correlation within the call number of the call activities and number of unique phone owners. The results can be used to explain the difference between call intensity, call number of the call activities and number of unique phone owners peaks during the day and night time.

Figure following on the next page

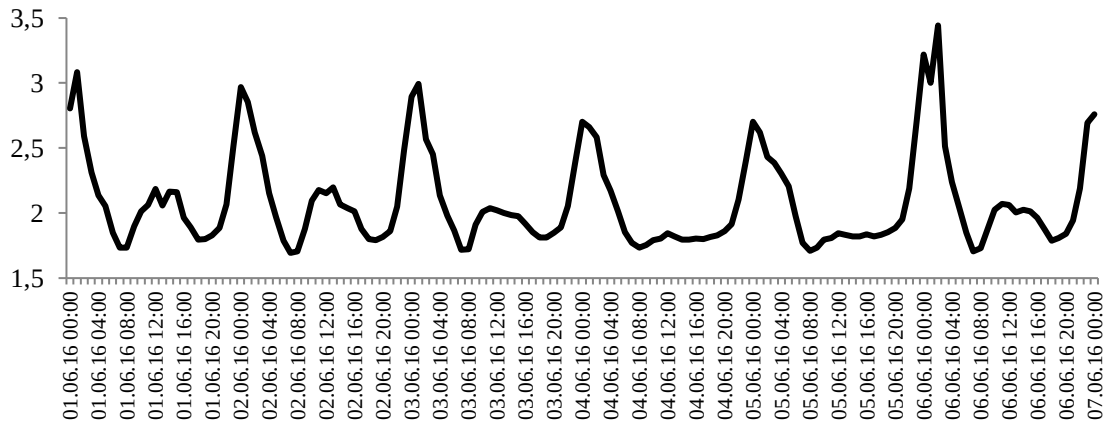


Figure 2: Time series of the average call activities intensity per unique phone owner

## 2.2. Cross sectional data for the call activities

The data were provided for 119 cities and counties and the average call number of the call activities and number of unique phone owners per day, except city of Riga, and is shown in Figure 3. The city of Riga data are significantly different from other Latvia cities and counties, respectively average call number of the call activities is 2433392 per day and average number of unique phone owners is 1281164 per day. It is the clear difference of number of call and/or of unique users between cities and counties. That could be justified by regions size (number of inhabitants, density of population) as well as by different economic activity in the regions.

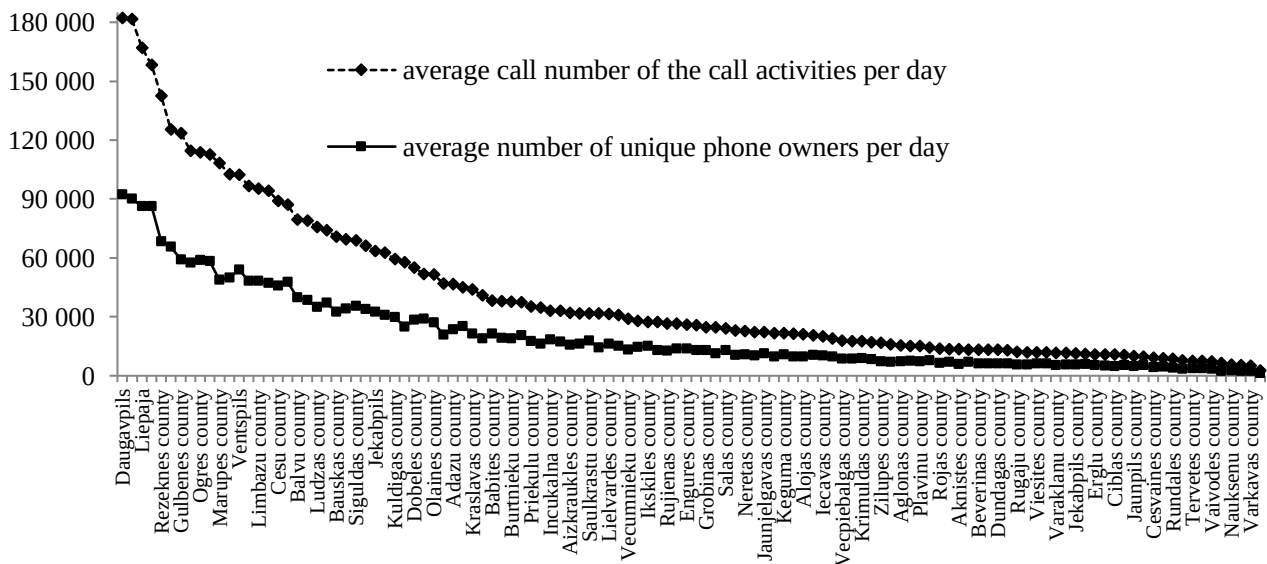


Figure 3: The average call number of the call activities and number of unique phone owners depending on cities and counties per day (except Riga)

The call activities intensity was analysed dependent on cities and counties. It is the clear difference between cities and counties average call intensity. The higher average call intensity was in Rucavas county and the lowest average call intensity was in Saulkrastu county accordingly 2.741 and 1.766 calls per unique phone owner per day. In Riga the average call intensity was 1.899 calls per unique phone owner per day. For the possible identification of the relatively homogeneous groups of counties and cities based on call number of the call activities,

number of unique phone owners and call activities intensity, the method of K-means cluster analysis is proposed, where the number of clusters is specified as 4 homogeneous groups. Aggregated CDRs can be represented as Voronoi diagrams constructed around cell towers or best-serving polygons using information from the mobile phone providers for the actual serving zone of each tower; or the product of rasterization process (Steenbruggen, Tranos, Nijkamp, 2015, p. 337). In order to display the spatial distribution of number of calls activities and number of unique phone owners, it is assumed that each network basic station serves a unique region and a phone connects to its nearest base station. Based on these assumptions a Voronoi diagram was made that defines the neighbours of the sites (de Jonge, Pelt, Roos, 2012, p. 11). Figure 4 shows the Voronoi tessellation of the Latvia, where dots are network basic stations and the black lines are the Voronoi borders.



*Figure 4: Voronoi tessellation of basic stations in Latvia*

The method of spatial correlation allows discovering groups of spatial regions with similar variations in call number of the call activities, number of unique phone owners and call activities intensity between counties and cities. It is necessary to detect the time and region where the call number of the call activities, number of unique phone owners and call activities intensity tend to change, thus suggesting the existence of economic activity in a certain region (Trasarti, Olteanu-Raimond, Nanni, et al, 2015, p. 349).

The analysis of mobile positioning data suitability shows that the following variables depending on time and region can be used for updatable Latvian regional business index development: call number of the call activities; number of unique phone owners; call activities intensity per unique phone owner and factor, which explain correlation within the call number of the call activities and number of unique phone owners.

### **3. CALL DATA ADEQUACY TO ECONOMIC ACTIVITY INDICATORS**

An objective of the project is to develop regional business indicator so based on the call activity of the mobile positioning data it is necessary to identify the cities and counties with the different economic activities. However, it should make sure that there is a relationship between call activity and economic activity.

The hypothesis is that cities and counties with the less call activities have lower economic activity to compare with the other region with high call activities during normal working hours. Let's look at the following two statements to show that the assumption of economic activity related to mobile phone calls, where the 1<sup>st</sup> statement is defines as during weekdays in average the call activity is higher than in weekends, bet the 2<sup>nd</sup> statement - distribution of call activity by hours is different in weekdays and weekends.

Both statements are self-explanatory and could also be taken as axioms but to represent an idea let's look at mobile call activity data by 119 cities and counties. Therefore LMT data is grouped and average number of calls per day is calculated for periods Monday to Friday and Saturday-Sunday to illustrate the first statement. Grouped data is reshuffled by hours to illustrate the second statement. The ratio of average number of calls during weekdays versus weekends is calculated by 119 regions. In Figure 5 is reflexed these ratios as a radar. Just in the one county (Rugaju novads) ratio is below the 1 that keeps the 1st statement from rejecting. Hypothesis that ratio of call activity is 1 or smaller could be rejected as t-test is statistically significant at 5% level even (one-tailed  $p\text{-value} < 0.05$ ) for assumption about population (ratio) average value 1.35. It can be concluded that average call activity during weekdays is for 35% higher than during weekends.

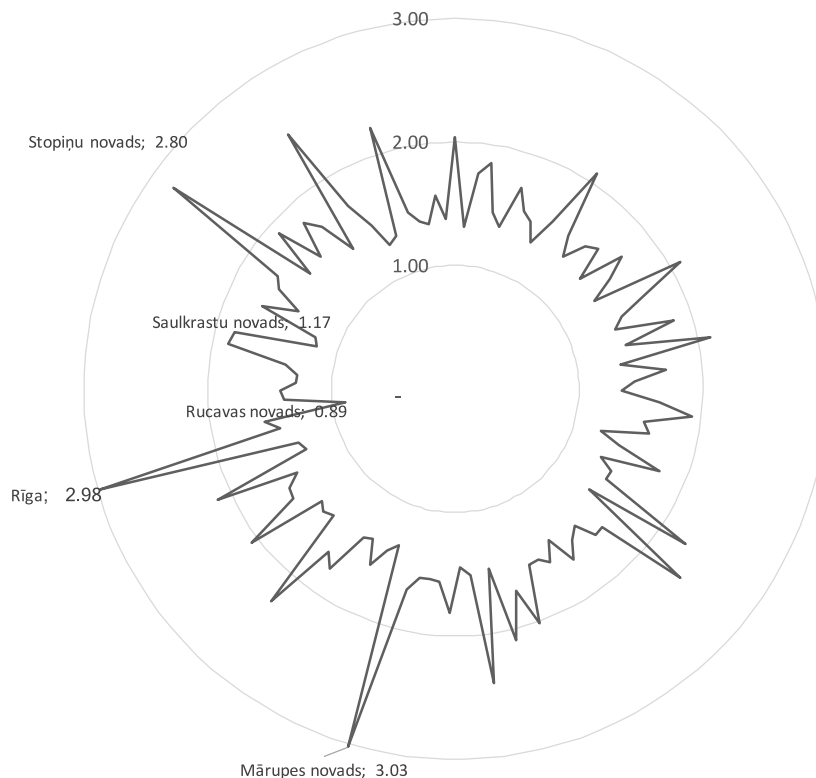


Figure 5: Ratios of average call activity in week days versus weekends by counties and cities

The illustration of the 2<sup>nd</sup> statement showed in the Figure 6. The same data about call activity by counties and cities in additional are reshaped by hours. As shown the peak of activity reached by the noon, during weekdays in average 8% but in the weekends 7% of all day call activity happened in this hour. Lowest call activity observable during night hours, from 01:00 to 06:00. Depth individual behaviour studies do not need to conduct to explain why call activity is higher from 19:00 till 05:00 during weekends than in weekdays, and vice versa from 07:00 till 17:00. This difference is statistically significant at chosen 5% level, so the 2<sup>nd</sup> statement couldn't be rejected. So these two statements illustrate that the data of call activity are consistent with an idea of when could be seen in higher economic activity during the week and day hours.

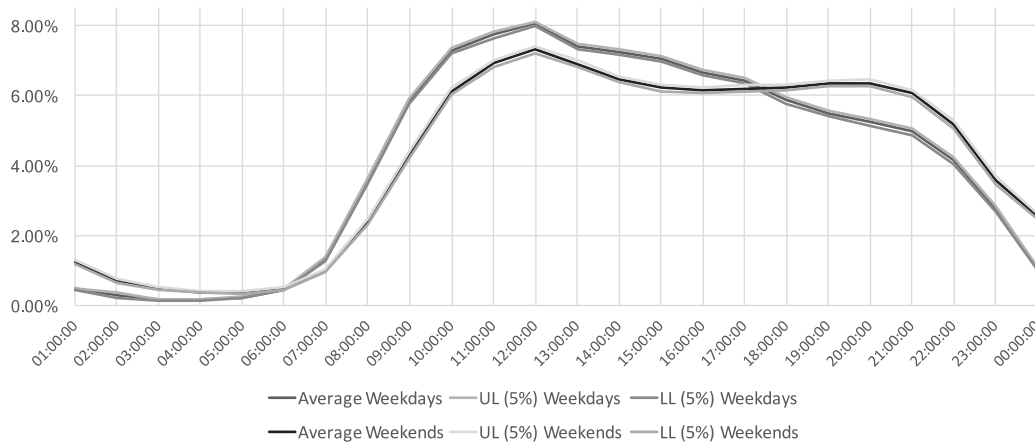


Figure 6: Distribution of call activity by weekdays and weekends

Economic activity data is not permanently available in municipalities' level due to business or person confidentiality restrictions or due to high costs of collection of data. Looking at some rare economic activity indicators (the main different dimension options found B.E.Munson (Munson, 1968, pp.225-237) at regional level they have close and positive relationship. As an example of economic activity indicator the number of SME per 10000 inhabitants is shown (Figure 7) with sufficiently close positive relationship between the numbers of enterprises in regions and call activity increase during weekdays ( $r= 0.682$ ).

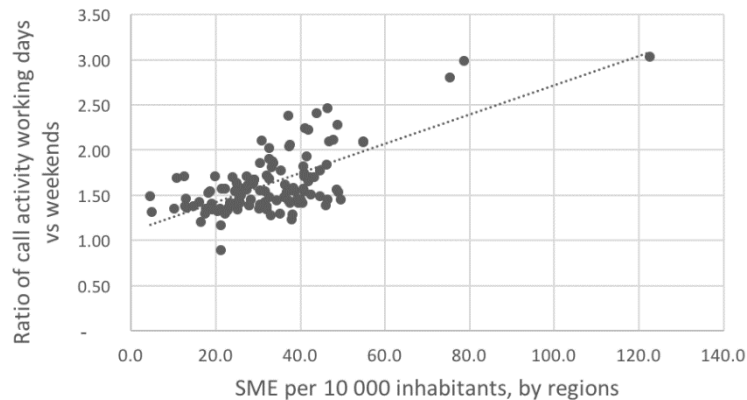


Figure 7: Relationship between the number of enterprises in regions and call activity (Central Statistical Bureau of Latvia, 2016)

One additional issue is to prove that call data allow to group regions logically by economic activity. For every city and counties the number of recorded call activities and number of unique phone owners were summed for all 6 days for each hour (Ahas, Aasa, Mark, Pae, Kull, 2007, p. 903]. As a result of data management, a matrix of 24 hours for 6 days and 119 cities and counties was formed. The results accept the difference in call number of the call activities and number of unique phone owners between different cities and counties. Besides it is the clear difference between weekdays and weekend days that indicate call activity relation to economic activity depending on cities as well on counties. At the same time there is the difference in calls activities during the day and night time, where activity peak is around 12:00 for each day in all cities and counties. Analysis of the call activities intensity per unique phone owner per hour between different cities and counties show the similar tendency during the day and night time, where average call intensity activity peaks are around 00:00 and 12:00 for each day. In all cities and counties it is difference between call activities intensity for weekdays and weekend days

around 12:00 that indicate call activity relation to economic activity, while call activities intensity around 00:00 is approximately the same that indicate to night life recreation activity. The exploratory factor analysis was applied on the method of principal components to describe variability among correlated variables of 119 cities and counties: call number of the call activities and number of unique phone owners. The new 119 factors as linear combination of correlated variables are developed and using these new factors the exploratory factor analysis was applied on the method of principal components. As the result 3 factors have a significant data load, but the rest of the factors describe less than 3.0% of the total variance. The first factor describes 53.8%, the second factor describes 42.5%, but the third factor – 1.7%. The first factor has high values in weekend days and lower values in weekdays and can be interpreted as the regions with lower economic activity. The second factor has high values in weekdays and lower values in weekend days and can be interpreted as the regions with higher economic activity. The interpretation of regions' economic activity approves the statistics, where the first factor has lower values during the time from 00:00 till 07:00 and higher values during the time from 18:00 till 23:00. As opposite the second factor has higher values during the time from 00:00 till 07:00 and lower values during the time from 18:00 till 23:00. For the next step of analysis it is necessary to sum the number of recorded call activities and number of unique phone owners by days. Since the data were available only for 6 days, the k-means clustering has applied using the new factor of call activities as linear combination of call number of the call activities and number of unique phone owners. Region pattern in four clusters was determined that is not identical to the regional division by cities and counties and the clustering using fuzzy c-means can be applied in the next step of analysis (Soto, Frias-Martinez, 2011).

#### 4. CONSLUSION

The call number of the call activities and number of unique phone owners can be indicators of economic activity and its changing in a certain region for the updatable Latvian regional business index development.

It is the clear difference between weekdays and weekend days that indicate call activity relation to economic activity, where activity peak is around 12:00 for each day. The same result is for average call intensity or call activities per unique phone owner, however average call intensity activity peaks are around 00:00 and 12:00 for each day. Besides it is difference between call activities intensity for working and weekend days around 12:00 that indicate call activity relation to economic activity, while call activities intensity around 00:00 is approximately the same. The results confirm the difference of number of call and number of unique users, as well average call intensity between cities and counties. That could be justified by regions size (number of inhabitants, density of population) as well as by different economic activity in the regions. Cities and counties with the less call activities have lower economic activity to compare with the other region with high call activities during normal working hours.

The exploratory factor analysis was applied on the method of principal components to describe variability among correlated variables of 119 cities and counties: call number of the call activities and number of unique phone owners. As the result three factors have a significant data load, but the rest of the factors describe less than 3.0% of the total variance. The first factor has high values in weekend days and lower values in weekdays and can be interpreted as the regions with lower economic activity. The second factor has high values in weekdays and lower values in weekend days and can be interpreted as the regions with higher economic activity.

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## DEVELOPING CAPACITY MANAGEMENT OF HOSPITALITY IN COMMUNITY-BASED TOURISM TO INCREASE TOURIST LOYALTY

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### ABSTRACT

*This study aimed to examine the influence of Capacity Management of hospitality to increase tourist loyalty in Community-based Tourism. The statistics used in this study included multilateral linear regression analysis (Multiple Regression Analysis).*

*The concept of Capacity Management of hospitality involves many Community-based Tourism units that can influence the tourist loyalty and help members of the Community to learn and grow and improve their performance. Capacity Management of hospitality influencing the tourist loyalty on positive word of mouths was Local resources, Community immunity, planning and leading. Capacity Management of hospitality influencing the tourist loyalty on revisiting was Local resources, planning and leading. Capacity Management of hospitality influencing the tourist loyalty on Protection was Local resources, planning, organizing and leading. Capacity Management of hospitality influencing the tourist loyalty on Trustworthiness was Local resources, Community immunity, planning and leading. The researcher hopes that the results of this study will be useful to develop the organizations within hospitality and Community-based Tourism.*

**Keywords:** *Capacity Managenet ,Community-based Tourism, Hospitality*

### 1. BACKGROUND AND SIGNIFICANCE OF THE PROBLEM

Currently, different countries are attaching greater importance to tourism, which is deemed to generate significant income for the economy and distribute income to a large number of stakeholders. This leads to efforts that not only to develop tourism as an income-generating activity but also to identify appropriate forms of tourism which will encourage tourism-based income to be thoroughly and sustainably distributed to the general public.

Community-based tourism (CBT) is a form of tourism management that has gained attention from many countries, which believe that CBT will meet the demands for both income generation and income distribution. It is an instrument for integrating development and conservation dimensions in local capital use. In addition, it is an activity that includes individuals with diverse backgrounds, for example, age, race, language, religion, and beliefs. This can result in individuals' learning, attitudinal sharing, and accepting cultural differences. Thus, CBT helps to reduce conflicts and create unity in society.

Growth in CBT with a lack of management preparation has adverse impacts on communities and local capital. In such circumstances, community members have a low level of participation in self-management and local capital for tourism; are referred to by tourism-related projects' organizers, managers, and implementers just to claim their legitimacy for these projects; or receive an unfair economic share. Resource management for tourism in this way leads to local opposition, a lack of cooperation, resource use exceeding carrying capacity or limits of acceptable changes, and dependency on outside organizations. All of these things result in tourism becoming a cause of unsustainable development and a threat to natural resources and culture, which are local capital. Furthermore, they result in a failure to achieve tourist loyalty from tourists who participate in CBT activities, thus resulting in the intention to make CBT become a sustainable-income generation activity for local people to be unsuccessful.

Based on the significance of the problem, this research aimed to develop capacity management of hospitality in CBT to increase tourist loyalty in order to ensure sustainable CBT development.

## **2. RELATED THEORIES**

### **2.1 Community-based Tourism**

The concept of community-based tourism (CBT) originated in western countries, and its definition varies according to the background of individuals or societies that largely focus on development in conjunction with natural resource and environmental conservation. In the Thai context, with a closer man-nature relationship, ecotourism played a significant role and existed as a new trend in the Thai tourism industry from 1992 to 1997, as advocated by the Tourism Authority of Thailand. This resulted in CBT existing in conjunction with ecotourism under area-level work of tourism projects for life and nature. Thus, CBT during that time was called different names, e.g. conservation tourism, ecotourism, agrotourism, cultural tourism, and green tourism.

Tourism management with public participation is an alternative that plays a greater role in individuals and communities because it can respond to and be developed into the sustainable social development process in four dimensions (Potjana Suansri, 2003), as follows.

1. Environment – Activities under this dimension should contribute to learning and cooperation in environmental and natural resource conservation and minimize environmental impacts.

2. Politics – Activities under this dimension should be part of the campaign for participation by lower-level people by creating a process of planning and decision-making in CBT management.

3. Socio-culture – Activities under this dimension should create sharing and learning about people from different cultures to enhance their understanding and appreciation of local cultures and understanding of the urban culture that grows without foundation.

4. Economics – This dimension involves distribution of incomes and profits from CBT, whereby local people involved in the development control the growth of local tourism and protect natural resources.

Chitti Mongkhonchaiaranya (2017) discussed the origin of CBT. He suggested that during the past two decades, CBT has been increasingly well-known and popular among tourists so that it has become an alternative form of tourism. In the past, Thais living in rural communities preferred to travel to large cities, while urban people liked to travel abroad, in order to be exposed to modernity and material and technological advancements. Foreigners often toured major cities of less economically-developed countries because they preferred experiencing what their country did not have. Foreign tourists tended to visit famous or outstanding attractions, e.g. natural or cultural attractions (historical ruins, historical objects, and architecture) and took into convenience, service quality, as well as safety of life and property. The significance of CBT deals with environmental, social and cultural sustainability. Under the CTB concept, the direction of tourism is defined by communities for communities in five areas: political, economic, social, cultural and environmental areas. Local communities have ownership of, and have the rights to manage, their tourism in order to provide visitors with a learning experience. CBT serves as a development tool to create conditions and opportunities for communities to play a key role in planning the direction of development in their communities, especially in communities that tourism is likely to enter or communities that want to make themselves more widely known. This aims to create a process of learning about planning, resource management, and decision-making decentralization, with an emphasis on the importance of the management of natural resources and the environmental and the use of

tourism as a tool for community development at the same time. However, communities need to prepare for future impacts associated with CBT. Positive impacts include community awareness, self-development, dependency, learning, enhanced knowledge, as well as transmission and application of local wisdom in order to ensure community strength and contribute to sustainable development based on sustainable development principles in three aspects: 1) Economics, 2) Socio-cultural, and 3) Environment. Negative impacts include environmental problems, e.g. the increasing amount of waste from tourists, increased water consumption, deteriorating ecosystems, adoption of foreign cultures, imitation, conflict of thoughts, loss of privacy due to services to tourists, and loss of local identity if they try to excessively meet tourists' needs (Weerapon Thongma and Prajate Umnat, 2004).

Chitti Mongkhonchaiaranya (2017) discussed CBT benefits to communities – community strength and sustainability, potential-based community development, as well as learning, knowledge, and understanding of CBT development, which places a focus on community self-reliance but not on economics because being economically-oriented will lead to conflicts of interest, which will finally lead to community disunity.

In terms of community participation in tourism management, communities and tourism are linked in two characteristics (Bunnanida Soda, 2001), as follows:

1. Economic and social benefits – The economic benefits to communities include job creation, tourism career development, market systems, raw material production systems, sources of income, as well as a direct and indirect increase in family incomes. The social benefits are related to constructive social development, more forms of personal contact, as well as defining rights and duties and social responsibility. Social safety, orderliness, and freedom will gain more attention.

2. Positive or negative impacts – Positive socio-economic impacts and negative social impacts as a result of poor management lead to change in the community administration structure.

It can be concluded that CBT is tourism whereby local communities have ownership of natural resources, environmental and socio-cultural management and participate in tourism from the stages of planning, and making decisions about (and conducting) tourist activities with a community-centered approach. This aims to provide learning between communities and visitors, ensure the preservation of community treasures, create local people's pride in their local treasures, as well as achieve fair distribution of interests to all stakeholders without negative impacts on natural resources and the environment. This form of tourism must be implemented with consideration being given to five aspects: political, economic, social, cultural and environmental aspects, with communities collaborating with external organizations that provide education and support in order to result in sustainable CBT development.

## **2.2 Capacity Development**

The definitions of the term “capacity development” have been developed by different scholars. In a general sense, it is the ability to develop in line with defined objectives and timeframes. The concept of capacity development is applied to community development and community strengthening to ensure that communities will keep pace with social changes. This concept is applied in many fields, such as in the fields of education, community development, environmental science, and agriculture.

Thongplew Kongjun et al. (no date) discussed the term ‘capacity building.’ He suggested ‘capacity’ refers to the ability of individuals, organizations and systems to efficiently and effectively achieve objectives, and ‘building’ means making or increasing something. Therefore, capacity building is a process in which individuals, organizations, and communities define the levels of working and problem-solving capabilities to achieve their objectives.

Bolger (2000) defined “capacity development” as an approach, strategy and method through which outsider stakeholders help to improve a particular area of performance of insider stakeholders, who, in this research, referred to individuals or networks within the community. The UNDP (2010) conducted a paradigm shift and adopted the term ‘capacity development’ to replace the term ‘capacity building.’ According to the UNDP, capacity development is a process where individuals, groups of individuals, organizations, institutions, and societies enhance their potential to perform major responsibilities – defining problems, solving problems, and achieving objectives. This process originates from community development needs. Capacity development activities cover various dimensions and result in sustainability. Capacity development is an on-going process using existing potential rather than newly-created potential of a community and society as a whole.

### **2.3 Community Development and Tourism Development**

The UNESCO investigated major problems that occurred at 158 World Heritage Sites in 2008, and discovered these problems were largely related to development, organizational structures, management, and regulations. To address these problems, the UNESCO formulated the World Heritage Strategy for Capacity Building. This strategy shifted the paradigm from human resources development through personnel training to building capacity in wider levels. The levels include the levels of individuals (including individuals who are not directly involved in the World Heritage Organization), organizations, and networks involved in the World Heritage Sites. The meaning and framework of capacity building assigned by the UNESCO are described below (UNESCO, 2011):

This research project applied the UNESCO’s strategy for building the capacity of stakeholders in the management of the World Heritage Sites, which focused on development within communities. This project’s concept was capacity development of CBT, in which tourism served as a key tool in community development and a key driving factor in development of the economy and quality of life of local community members. Capacity development in tourism resulted in local participation, development of knowledge, skills and positive attitudes towards community development and tourism, as well as an awareness of community appreciation, which would lead to power of community management by community members.

### **3. SCOPE AND OBJECTIVES OF THE RESEARCH**

This research surveyed visitors’ opinions about the degree of the impact of the management of hospitality in CBT on increased tourist loyalty, with the following key objectives:

1. To study the influence of the variable ‘Development of Capacity Management of Hospitality in Community-based Tourism’ on the variable ‘Tourist Loyalty.’
2. To provide guidelines for the development of capacity management of hospitality in community-based tourism to increase tourist loyalty.

### **4. CONCEPTUAL FRAMEWORK**

A conceptual framework was developed using two key important theoretical concepts – ‘Capacity Management of Hospitality in Community-based Tourism’ and ‘Tourist Loyalty,’ which can be summarized as follows (Figure 1.):

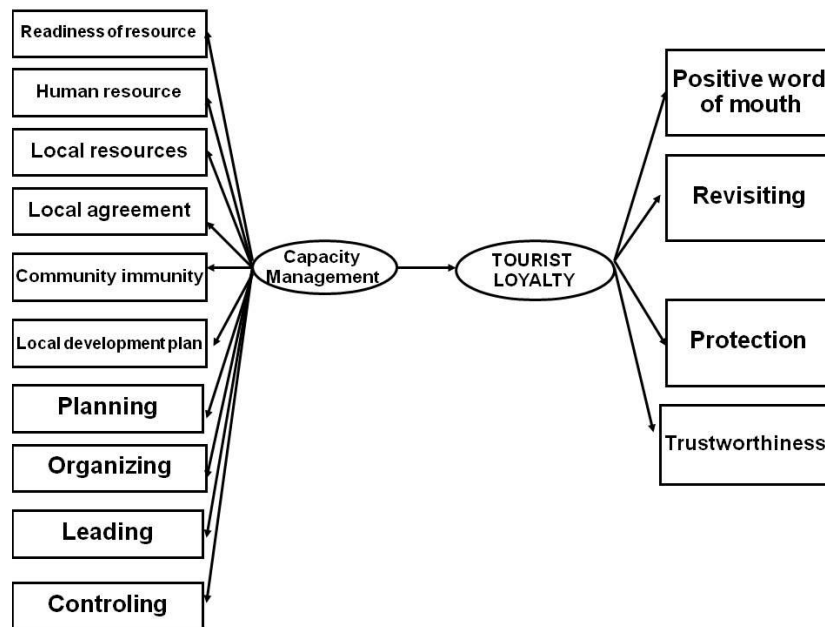


Figure 1. – Concepts (Summarized)

## 5. RESEARCH METHODOLOGY

Details of the research methodology of this study are as follows:

### *Population and samples*

The population used in this study was tourists with experience in CBT activities in Thailand, and this study involved 400 samples.

### *Research methodology*

This study utilized a quantitative research, which contained the following details:

#### Research tool

The data-collection tool in this research project was a five-scale open-ended questionnaire, in which respondents had to express opinions about developing capacity management of hospitality in CBT and increasing tourist loyalty.

A questionnaire-based survey is suitable for surveying data from a large number of sources. Its prominent features are time-saving measures and convenience, whereby respondents can fill in the questionnaire at their convenience. However, it has one limitation. If respondents have any doubts while completing their questionnaire, they are not able to immediately ask the researcher (McNeill & Chapman, 2005; Rubin & Babbie, 2005; Sekaran, 2003). To minimize this limitation, clear, communicable language was used in the research tool. In addition, the researcher provided sources of information that respondents could research about development of capacity management of hospitality in CBT and provided mobile phone and email contact information for the research team.

#### Tool quality examination

The research tool was checked in terms of its quality, based on survey tool quality examination principles. It was checked for validity (Sarantakos, 2005; Saunders, Thornhill, & Lewis, 2003) by three experts, who were equipped with knowledge and understanding about the concepts of developing capacity management of hospitality in CBT and increasing tourist loyalty. These three experts read the questionnaire and provided suggestions on improvements to ensure its comprehensiveness and completeness. In addition, it was checked for reliability by having the questionnaire completed by 30 students from the Master of Arts Program (Integrated Tourism

Management), the Graduate School of Tourism Management, the National Institute of Development Administration. The Cronbach Alpha of all the collected questionnaires was calculated, which equated to 0.952. This showed that the tool quality met the criteria.

## 6. RESEARCH RESULTS

The results of this study can be summarized as follows:

### General Information

#### *Respondents*

There were a total of 800 respondents, with the majority being females (57%) and Generation-Y individuals (born from 1980-1997) (51.70%), followed by Generation-X individuals (23%). Most respondents held a bachelor's degree (51.60%), followed by high-school certificate (12.8%). Most of them were students, followed by business owners. Most earned 20,001-25,000 baht per month (23.50%), followed by 15,001-20,000 baht (21%). Mostly, for each trip, they spent 5,000 baht or less (52.9%), followed by 5,001-10,000 baht.

### Correlation Matrix Analysis

This study involved a correlation matrix analysis, which aimed to determine the correlations between variables based on the first hypothesis, and a multicollinearity analysis of these variables. The analysis results are presented in Table 1.

*Table 1 The correlation coefficients of variables*

|                           | V1                 | V2                 | V3                 | V4                 | V5                 | V6                 | V7                 | V8                 | V9                 | V10 |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----|
| V1 Human resource         | 1                  |                    |                    |                    |                    |                    |                    |                    |                    |     |
| V2 Local resource         | .368 <sup>**</sup> | 1                  |                    |                    |                    |                    |                    |                    |                    |     |
| V3 Local agreement        | .431 <sup>**</sup> | .344 <sup>**</sup> | 1                  |                    |                    |                    |                    |                    |                    |     |
| V4 Community immunity     | .362 <sup>**</sup> | .335 <sup>**</sup> | .399 <sup>**</sup> | 1                  |                    |                    |                    |                    |                    |     |
| V5 Local Development plan | .395 <sup>**</sup> | .299 <sup>**</sup> | .414 <sup>**</sup> | .400 <sup>**</sup> | 1                  |                    |                    |                    |                    |     |
| V6 Planning               | .461 <sup>**</sup> | .420 <sup>**</sup> | .449 <sup>**</sup> | .547 <sup>**</sup> | .566 <sup>**</sup> | 1                  |                    |                    |                    |     |
| V7 Organizing             | .464 <sup>**</sup> | .345 <sup>**</sup> | .431 <sup>**</sup> | .481 <sup>**</sup> | .480 <sup>**</sup> | .622 <sup>**</sup> | 1                  |                    |                    |     |
| V8 Leading                | .516 <sup>**</sup> | .440 <sup>**</sup> | .528 <sup>**</sup> | .551 <sup>**</sup> | .531 <sup>**</sup> | .665 <sup>**</sup> | .675 <sup>**</sup> | 1                  |                    |     |
| V9 Controlling            | .468 <sup>**</sup> | .439 <sup>**</sup> | .490 <sup>**</sup> | .567 <sup>**</sup> | .525 <sup>**</sup> | .675 <sup>**</sup> | .656 <sup>**</sup> | .732 <sup>**</sup> | 1                  |     |
| V10 Tourist Loyalty       | .342 <sup>**</sup> | .392 <sup>**</sup> | .292 <sup>**</sup> | .291 <sup>**</sup> | .354 <sup>**</sup> | .488 <sup>**</sup> | .425 <sup>**</sup> | .514 <sup>**</sup> | .449 <sup>**</sup> | 1   |

From Table 1, it can be seen that the correlation coefficients of variables in the groups ‘Capacity Management’ and ‘Tourist Loyalty’ ranged from 0.291 to 0.732. The highest correlation coefficient belonged to the variables ‘Controlling’ (V9) and ‘Leading’ (V8). The correlations of all variables were aligned with each other (positive correlations), which was consistent with the first hypothesis of the research. As for the correlation matrix of observed variables, it was identified that measured variables had an internal relationship at the statistical significance level of 0.01 and 0.05, and the relationship between each pair of variables did not exceed 0.8. This indicated that variables of the set of data had no multicollinearity (Berry & Feldman, 1985; Hair, 2006; Kline, 2005). Therefore, they were suitable for being used in multiple regression analysis.

### Multiple Regression Analysis with the Enter Method

An analysis of the influence of variables by means of multiple regressions using the Enter method was conducted to identify the weight of importance of the independent variable ‘Capacity Management’ on the dependent variable ‘Tourist Loyalty.’ The analysis results are as follows:

| Readiness of resource  | Positive word of mouth | Revisiting    | Protection    | Trustworthy   |
|------------------------|------------------------|---------------|---------------|---------------|
|                        | Adj-R2 = .217          | Adj-R2 = .203 | Adj-R2 = .182 | Adj-R2 = .162 |
| Human resource         | .067                   | .010          | -.020         | .055          |
| Local resource         | .191**                 | .142**        | .087*         | .096**        |
| Local agreement        | .009                   | .006          | -.058         | -.057         |
| Community immunity     | .089*                  | -.019         | -.065         | .084*         |
| Local development plan | .003                   | .073          | -.004         | .037          |
| Planning               | .118*                  | .172**        | .199**        | .140**        |
| Organizing             | .031                   | -.032         | .094*         | .092          |
| Leading                | .243**                 | .179**        | .199**        | .191**        |
| Controlling            | .003                   | .040          | .044          | .006          |

#### *Results of Analysis of Tourist Loyalty in Positive Word of Mouth*

Table 2 shows the results of the multi regression analysis of the independent variable ‘Capacity Management’ on the dependent variable ‘Positive Word of Mouth.’ The results explained the volatility of the independent variable on the dependent variable by 21.70 percent (Adj-R2 = 0.217).

There were two factors that influenced Tourist Loyalty in terms of Positive Word of Mouth at the statistical significance level of 0.01, which consisted of Leading ( $\beta = 0.243$ ) and Local Resources ( $\beta = 0.191$ ). The factors that influenced Tourist Loyalty in terms of Positive Word of Mouth at the statistical significance level of 0.05 consisted of Planning ( $\beta = 0.118$ ) and Community Immunity ( $\beta = 0.089$ ).

#### *Results of Analysis of Tourist Loyalty in Terms of Revisiting*

Table 2 demonstrates the results of the multi regression analysis of the independent variable ‘Capacity Management’ on the dependent variable ‘Revisiting.’ The results explained the volatility of the independent variable on the dependent variable by 20.30 percent (Adj-R2 = 0.203).

There were three factors that influenced Tourist Loyalty in terms of Revisiting at the statistical significance level of 0.01, which consisted of Leading ( $\beta = .179$ ), Planning ( $\beta = .172$ ), and Local Resources ( $\beta = 0.142$ ).

#### *Results of Analysis of Tourist Loyalty in Terms of Protection*

Table 2 presents the results of the multi regression analysis of the independent variable ‘Capacity Management’ on the dependent variable ‘Protection.’ The results explained the volatility of the independent variable on the dependent variable by 18.20 percent (Adj-R2 = 0.182).

There were two factors that influenced Tourist Loyalty in terms of Protection at the statistical significance level of 0.01, which consisted of Planning ( $\beta = 0.199$ ) and Leading ( $\beta = 0.199$ ). There was one factor that influenced Tourist Loyalty in terms of Protection at the statistical significance level of 0.05, which was Local Resources ( $\beta = 0.087$ ).

### *Results of Analysis of Tourist Loyalty in Terms of Trustworthiness*

Table 2 demonstrates the results of the multi regression analysis of the independent variable 'Capacity Management' on the dependent variable 'Trustworthiness.' The results explained the volatility of the independent variable on the dependent variable by 16.20 percent (Adj-R<sup>2</sup> = 0.162).

There were two factors that influenced Tourist Loyalty in terms of Trustworthiness at the statistical significance level of 0.01, which consisted of Leading ( $\beta = 0.191$ ), Planning ( $\beta = .140$ ), and Local Resources ( $\beta = 0.096$ ). There was one factor that influenced Tourist Loyalty in terms of Trustworthiness at the statistical significance level of 0.05, which was Community Immunity ( $\beta = 0.084$ ).

## **7. RECOMMENDATIONS FROM THE RESEARCH**

In this research project, an analysis was conducted on the correlations between independent variables. It was identified that all measured variables had an internal relationship with each other at the statistical significance level of 0.01. This demonstrated the relationships of nine independent variables of Capacity Management (Human Resource, Local Resources, Local Agreement, Community Immunity, Local Development Plan, Planning, Organizing, Leading, and Controlling) with four dependent variables pertaining to Tourist Loyalty – Positive Word of Mouth, Revisiting, Protection, and Trustworthiness.

The multiple regression analysis revealed the influence of Capacity Management on Tourist Loyalty, as follows:

### **7.1 Guidelines for Promoting Tourist Loyalty in Terms of Positive Word of Mouth for CBT**

Individuals who are involved in CBT can promote Tourist Loyalty in terms of Positive Word of Mouth by prioritizing the development of Capacity Management in terms of Leading, Local Resources, Planning, and Community Immunity.

### **7.2 Guidelines for Promoting Tourist Loyalty in Terms of Revisiting for CBT**

Encouraging visitors to participate in CBT activities so that Revisiting occurs, which will create Tourist Loyalty, can be achieved by giving priority to the development of Capacity Management in terms of Leading, Planning, and Local Resources

### **7.3 Guidelines for Promoting Tourist Loyalty in Terms of Protection for CBT**

Those involved in CBT should be developed in the area of Capacity Management in terms of Planning, Leading, and Local Resources to result in Protection, which is a component of Tourist Loyalty.

### **7.4 Guidelines for Promoting Tourist Loyalty in Terms of Trustworthiness for CBT**

Those involved in CBT should be developed in the area of Capacity Management in terms of Leading, Planning, Local Resources, and Community Immunity.

## **8. CONCLUSION**

Although guidelines for capacity management have been developed based on the belief that CBT can be successful, attaching great importance to related individuals' skills, knowledge and ability in management is crucial. When capacity management of related people is developed, this will result in tourist loyalty among tourists in all aspects and will eventually lead to sustainable development and stable incomes for communities. Nonetheless, the findings of this research project found that although all components of capacity management had a relationship



with tourist loyalty, all components of capacity management did not influence all components of tourist loyalty. The research findings were not consistent with the aforementioned belief about capacity management development. This disagreement is believed to stem from the fact that ‘capacity management development’ is a new concept, so it may take some time before its impact on tourist loyalty is perceived. This disagreement is also believed to come from the fact that ‘capacity management’ may have an impact on some latent variables before having an impact on tourist loyalty. Therefore, this should be studied further.

Although each of the nine components of capacity management should be implemented and each of the four components of tourist loyalty should be measured to identify the success of tourist loyalty, the benefit of this research project is that it shows the direction that the CBT should focus on for capacity management development in order to result in tourist loyalty. This is because in practice, CBT cannot dedicate resources for capacity management development equally in all areas. In addition, for communities that find, through self-assessment, that they need development in a particular area based on the tourist loyalty creation principle, they can apply the research results to strengthen that area.

## 9. LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Due to newness of the concept of ‘capacity management’ to Thailand’s CBT and the quantitative research process used in this research project, in-depth data is missing. Therefore, future studies can use qualitative research to investigate cases in depth. In addition, there should be a study of latent variables that are influenced by capacity management development before capacity management development has an impact on tourist loyalty.

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## ANALYZING PENANG DESTINATION IMAGE FROM ONLINE TOURISM DOMAIN

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### ABSTRACT

*The purpose of this study is to explore the image formation of Penang on the internet by examining the contents of several selected websites from Online Tourism Domain (OTD). Penang is one of the major destinations in Malaysia. It's rich cultural heritage and golden sandy beaches are amongst the quality of Penang as a destination. Nevertheless, limited study was conducted investigating online tourism image of Penang in particular. Therefore, this study was conducted. This study used qualitative approach that combined QDA Miner 4.0 and Word Stat 7.1 software, which were used to analyze the textual content from 25 different OTD. The websites were classified under five sub-categories; Government tourism portal, news and media websites, travel agency websites, travel guide websites, and travelogue website. The finding suggests that each sub-category is unique to itself, and has its own focus and possibly target market. 'Malaysia', the top projected image generated from the study indicates Penang as a location rather than a destination. However, a few images that are also listed might suggest Georgetown, the capital of Penang is the World Heritage site. This research could bring awareness to local tourism marketers, by assisting them to improve Penang image projection. Several Penang major attractions and activities that are not related to heritage and food seem to be less discussed on the studied websites. Such information should not be ignored as it creates competitive advantage as well as vital to gain tourists satisfaction.*

**Keywords:** Destination Image, Penang, Tourism, Travel website

### 1. INTRODUCTION

The last four decades has shown us the vital value of destination image as the concept to unveil tourists' decision making in selecting their destination (Baloglu & McCleary, 1999). Chen and Tsai (2007) also discussed about the influence of destination image on tourist destination choice, and the significance of having perspicuous image as it provides competitive advantage to one place. It is however, projected image may not always fulfil travellers expectation. Echtner and Ritchie (2003) stated that travellers' satisfaction is purely based on their previous perceived image and the reality faced at the destination. In this digital age, online technology has allowed prospective tourists to have direct access to any travel information that they need, such as trip ideas, place of interest as well as travelling packages. Apart from that, freedom in sharing the information over internet also has permitted travellers and travel industry

professionals to share their experience and knowledge through social media, e-travel magazines and travel websites. Some materials posted online by previous travellers become a source that serves as image formation agent for the potential visitors (Koltringer & Dickinger, 2015). This shared information not only provides the potential tourist with some idea about their destination, but also mentally and physically prepares them. Due to its complexity and the significance of this concept; many scholars were attracted to explore topics that evolve around destination image. Nevertheless, only limited studies researched on Penang as a touristic destination, and even fewer discussed the online Penang destination image. Therefore, this paper aims to identify online image that represents Penang. To achieve the aim, this paper analysed the image formation of Penang on the internet by looking to the contents of a variety of web information sources. These included webpages from Malaysia Tourism, tour operators, travel agents, online travel magazines and travel guide as well as online travel blogs or travelogues.

## **2. INTERNET CONTENT ANALYSIS OF PREVIOUS RESEARCH ON DESTINATION IMAGE**

Internet as a new technology has dramatically changed the way we do both business and implementing strategies (Porter, 2001). The usage of the technology is not limited to businesses, Buhalis and Law (2008) suggested that tourists as consumers are taken by this technology. They reasoned that internet assists in spreading tourism related information, reshapes the way people travel and the tourism industry as a whole. The success of this industry is depending heavily on information, hence, it is crucial for the industry players to comprehend the shift in technologies that influence the spread of travel related information (Xiang & Gretzel, 2010). It is safe to include destination image as one of the elements in travel related information; Jenkins (1999) described destination image as the idea and impression that one possesses of a place. There are abundance of destination image related data and other travel related features available on the internet; and this internet function is what Xiang and Gretzel (2010) considered as Online Tourism Domain (OTD). OTD is proven to be beneficial not only to the industry and travellers, but also the scholars. Stepchenkova and Morrison (2006) retrieved data from 212 American and Russian websites of OTD, like tour operators and official sources. Their study was looking to compare "US and Russian website materials related to travel to Russia to determine whether the two sides differed in: (1) most frequently mentioned places within the country; and (2) descriptions of Russia as a travel destination." (Stepchenkova and Morrison, 2006). To analyse their data, Stepchenkova and Morrison utilised *Computer Aided Qualitative Data Analysis Software* (CAQDAS) namely CATPAC II and WORDER. Their findings suggested that American travel agents through their websites primarily focused on the western region of Russia, and placed the country as a historical and cultural destination. Meanwhile, the Russian webpages, despite "loaded with information" it requires upgrade that covers specific market segments and travel interest. In destination image study, OTD works hand in hand with CAQDAS. Another scholar that applied the same approach in his study is Son (2011). Son's research was to identify the westerners' image of Zhangjiajie, China as destination based on negative and positive content of travel blogs. Unlike many other touristic destinations, Zhangjiajie was not popular until 1980s. Therefore, this destination still has a lot of academic mysteries to be unlocked. This motivated Son to pilot the travellers experience study in Zhangjiajie. The OTD in this research is travel blogs, and 15 of them were identified and analysed. The CAQDAS that Son employed was NVivo software. The findings indicated the western travellers were captivated by Zhangjiajie natural beauty and pleased with the "nature-based tourism attractions". Despite the positive remarks, the study proposed a few features to enhance the future travellers' experience.

## 2.1 Tourism in Penang

Tourism is the second biggest sector when it comes to Penang's economy (OECD, 2011), making it one of the most visited state in Malaysia (Ghaderi et al., 2012). Most tourists are drawn to Penang's culture, heritage and nature. Ranjanthran and Mohammed (2011) explained that Penang historical background also promotes tourism industry in the state. Chai (2011) noted that Penang exclusive features would have not been materialised without its people, which are the main legacy of the colonial era. For instance, the fusion of *Baba-Nyonya* (Straits Chinese), *Peranakan Jawi* (Indian Muslim) along with other races like the Malay, Chinese and Indian has created diverse food, unique colonial architectures, and other cultural practices that are uniquely Penang. 2008 had become a notable year for Malaysia as 2 of her colonial cities, Georgetown in Penang and Melaka have been recognised as World Heritage (UNESCO, 2017). This international recognition creates an excellent image for Penang and pin her on the world travel map. The UNESCO award is an outstanding addition to the long existing marketing activities endorsed or host by the government. Among the annual events that pull both the international and local crowds are *Pesta Pulau Pinang* (Penang Festival), *Chingay* (big flag), and Penang Bridge International Marathon (Penang Tourism, 2009). Apart from the events, Penang also has other physical attractions as shown in Table 1.

**Table 1: Tourism Products Offered in Penang**  
(Ranjanthran and Mohammed, 2011)

| Tourism Product                | Product Types                                                           | Locations                                                                                                                                                                        |
|--------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural Beauty Attractions     | Beaches                                                                 | Batu Ferringhi, Tanjung Bungah, Teluk Bahang and Muka Head                                                                                                                       |
|                                | Hills                                                                   | Bukit Bendera                                                                                                                                                                    |
|                                | Reserved Forests                                                        | Botanical Gardens, Butterfly Farm & Penang Youth Park                                                                                                                            |
|                                | Waterfalls                                                              | Titi Kerawang                                                                                                                                                                    |
|                                | Dam                                                                     | Air Itam, Teluk Bahang                                                                                                                                                           |
|                                | Small Islands                                                           | Pulau Aman, Pulau Kendi, Payar                                                                                                                                                   |
| Man Made Attractions           | Fruits                                                                  | Tropical Fruit Farm, Balik Pulau                                                                                                                                                 |
|                                | Museums, Art Galleries, Places of Worship, Heritage Buildings and Sites | Wat Chayamangkalaram, Kek Lok Si, Padang Kota, Snake Temple, Kuan Yin Temple, Aceh Mosque, Mariamman Temple, St. George Church, St. Ann Church, Chinese Clan Houses, Clock Tower |
| Infrastructure                 | Airport, Bridge, Railroads, Basic Amenities, Hotels                     | Bayan Lepas Airport, Penang Bridge, Railway Station                                                                                                                              |
| Other form of Tourism Products | Shopping Complexes, Culinary Options, Night Life                        | Gurney Plaza, Upper Penang Road, Gurney Drive, Penang Times Square, Queensbay                                                                                                    |

### 3. METHODOLOGY

This study seeks to identify Penang image on travel related website. To achieve the aim, this paper opted a qualitative methodological approach known as ‘content analysis text based CAQDAS package’. Google search engine was used to browse the OTD and germane pages were selected. These chosen websites were based on these keywords ‘*Penang Travel*’, ‘*Penang Travel Blog*’ and ‘*Penang Travel Websites*’. From the total lists of websites collected, irrelevant blogs which did not contain specific travel experience on Penang were excluded from the analysis. All the 50 websites were then divided into 5 sub-categories:

- i. Government Tourism Portal,
- ii. News and Media websites,
- iii. Travel Agency websites,
- iv. Travel Guide websites,
- v. Travelogues.

To keep the relevance of the study, top 5 most frequently visited websites from each sub-categories were chosen. In total 25 websites were then placed in a file for further analysis through QDA Miner 4.0 and Word Stat 7.1. In the QDA Miner software, every file was coded and analyses before transferring the data to the next software, Word Stat 7.1. The last software filtered away words with trivial details like ‘*before*’, ‘*the*’, ‘*I*’. The analyses from the selected websites were gathered and the words with the highest frequency would be taken as the online Penang destination image. This study is limited to OTD websites that focus on Penang, hence, international opinions or ideas might be missed out. Apart from that, the results of the study only restricted to English language webpages since the employed software do not recognised other local languages except English.

### 4. FINDINGS

#### 4.1. The Most Frequently Used Words Based on Website Category.

The result of the analysis using Word Stat 7.1 appears as in Table 2. The table compares the most frequently used words for each website sub-categories.

**Table 2: Analysis on The Most Frequently Used Words Per Website Sub-Category.**

| Rank | Government Tourism Portal | News Media | & Travel Agencies | Travel Guides | Travelogues |
|------|---------------------------|------------|-------------------|---------------|-------------|
| 1    | Malaysia                  | Tourism    | Travel            | Island        | Food        |
| 2    | Tourism                   | Georgetown | Malaysia          | Malaysia      | Hotel       |
| 3    | World                     | Food       | Tours             | Beach         | Street      |
| 4    | Heritage                  | Malaysia   | International     | Georgetown    | Temple      |
| 5    | Island                    | Hotel      | Company           | Temple        | Trip        |
| 6    | International             | World      | Industry          | Hotel         | Art         |
| 7    | Georgetown                | Festival   | Services          | Bridge        | Georgetown  |
| 8    | Travel                    | Heritage   | Customers         | Hill          | Famous      |
| 9    | Festival                  | Street     | Regional          | Street        | Café        |
| 10   | Golf                      | Art        | Island            | Travel        | Chinese     |

All the top 10 words from each subcategory are grouped into three classifications, based on their attributes:

- i. Geographical feature (words that are linked to the setting of Penang as a location): Malaysia, Georgetown, and island.
- ii. Physical feature (words that describe specific physical features related to Penang tourism): hotel, café, food, street, hill, temple, and beach.
- iii. Subjective feature (words related to activities, or descriptions): famous, world, heritage, travel, company, industry, services, regional, tourism, trip, art, festival, golf, international, and Chinese.

The geographical feature repeatedly appears in every sub-category, except in Travelogues. These words describes the location of Penang and helpful for those travellers who have little idea about Penang. Unlike Travelogue, other sub-categories use the word 'Malaysia' to elucidate the location. 'Malaysia' also appears as the dominant words but without any significant distribution between the rankings. The subjective featured words are found in all sub-categories but they are mostly located at the bottom 5 of the rankings.

Table 2 also shows that each website category has a different focus. In the Government Tourism Portal, only geographical and subjective featured words are used; among these words are 'world' and 'heritage'. Understanding that 'World Heritage' status (as discussed before) is one of the top selling point for Penang, hence it is natural to assume that the government is taking pride in that as well as seeing it as the marketing advantage for Penang. Other words in the government page like 'festival', and 'international' picture many festive celebrations, and cultural and international events in Penang. The one and only word 'golf' appears under the government sub-category; this is mainly due to 'golfing' is one highly promoted tourism activities and a niche product of Tourism Malaysia (Tourism Malaysia, 2017). News and Media sub-category shares many similarities to the government website except there are some physical features represented in the ranking. This channel often reports on locations or address of an events, hotels and food reviews. Meanwhile, the Travel Agencies set their focus on tourism business related topics; as the words 'travel', 'tours', 'company', 'industry', 'services' and 'customers' suggest. These words are unique to the Travel Agencies as they do not appear in other sub-categories. Travel Guides tend to show different picture of Penang. Apart from its geographical featured words, physical featured words dominate the pages. Words like 'hotel' or 'street' could be linked to necessary tourism infrastructures or a direction to specific sites. Furthermore, the terms 'beach', referring to Penang's famous beaches, 'hill', describing Penang Hill, and 'bridge', which refers to the two bridges connecting Penang to the mainland, are used to describe distinct physical features of Penang. Compared to other website categories, the travel guides seem to be more balanced in term of the information they present. Travelogues does not discuss much about Penang geographical feature. Presumably, the authors of travelogues believe that the readers are well aware of Penang's location. Physical features like 'food', 'temple', 'art', and 'café' or tourism related infrastructure such as 'street' or 'hotel' are frequently mentioned in travelogues which are linked to the experience of the authors of the pages. Whereas 'street' could also be combined with 'food' to describe the well-known Penang street food.

#### **4.2. The Representation of Penang's Image Based on Travel Related Websites**

The result in Table 3 is further analysed in order to gain knowledge on how Penang is depicted by the travel related websites. Contrast to Table 2, Table 3 concludes the image portrayed in the studied websites based on the total word frequency count.

**Table 3: Websites' Word Frequency Count.**

| Rank | Image      | Govt.<br>Tourism &<br>Portal | News<br>Media | Travel<br>Agencies | Travel<br>Guides | Travelogue | Total |
|------|------------|------------------------------|---------------|--------------------|------------------|------------|-------|
| 1    | Malaysia   | 160                          | 83            | 16                 | 139              | 10         | 408   |
| 2    | Georgetown | 62                           | 101           | 2                  | 127              | 15         | 307   |
| 3    | Island     | 75                           | 34            | 11                 | 152              | 3          | 275   |
| 4    | Tourism    | 153                          | 102           | 5                  | 3                | 1          | 264   |
| 5    | World      | 97                           | 69            | 4                  | 49               | 5          | 224   |
| 6    | Food       | 40                           | 83            | -                  | 47               | 52         | 222   |
| 7    | Travel     | 58                           | 30            | 61                 | 54               | 4          | 207   |
| 8    | Hotel      | 10                           | 73            | 9                  | 79               | 30         | 201   |
| 9    | Heritage   | 85                           | 55            | 3                  | 40               | 7          | 190   |
| 10   | Temple     | 25                           | 33            | 3                  | 100              | 17         | 178   |

The geographical featured words conquered the top 3; again these words are used to educate the viewers about Penang, hence projecting a slight image or idea about the destination. The rest of the words (images) are heavily interrelated; Penang status as one of the World Heritage sites is deeply link to tourism. As it is known, the status assists in stimulating tourism activities of a destination. In this research, the images that wholly link to the status are 'Georgetown', 'world', 'heritage', and 'temple'. Other image like 'tourism', 'travel' and 'hotel' might be connected to the status and Penang generally, however, these terms are rather broad and commonly used by many other websites on OTD. Travel Agencies and Travelogue represent a total different image to the other three. As discussed before, these pages have different focus and might as well have different target market. Travel Agencies manipulates on the word 'travel' that shows insignificant image for Penang, whilst Travelogue emphasise on 'food', which is understood as among the top image of Penang. Although each sub-category projects the image of Penang differently but at average, some of the studied websites do present the suitable image that rightfully describes Penang.

## 5. CONCLUSION

This research could bring practical implications to local tourism marketers, by assisting them to improve Penang image projection in different online channels. The study also concludes, many Penang major attractions and activities that are not related to heritage and food seem to be less discussed. This might be a drawback for Penang as travellers satisfaction of a destination is also depending on their preparation before their journey.

This paper also faced language barrier (as mentioned above) that causes the findings to be less accurate in depicting Penang image. There are some other minor glitches in the findings; the words 'tourism' travel' and 'hotel' are too general to be classified as appropriate destination image. Nevertheless, it does not affect the credibility of the study since the methodology of the study is purely based upon word frequency counts. There are number of arguments derived from this study that require further investigation; such as Travel Agencies websites are not aiming at giving away information about Penang as a destination, rather focus on their travel packages. This may result in destination's misconceptions, or certain important information may be not delivered.



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## IDENTIFYING MONEY LAUNDERING IN BUSINESS OPERATIONS AS A FACTOR FOR ESTIMATING RISK

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### ABSTRACT

*Money laundering and terrorist financing can be performed in many ways, regular business operations being among them. Business activities go through a large number of business changes, which offers numerous options for money or assets to enter the company via seemingly legal business transactions, enabling money or assets to remain in regular business flows once money laundering is completed. On the other hand, the opposite scenario, in which there is interest in money to be transferred from regular flows to alternative flows, including terrorism financing, is also common. This paper will discuss legal business operations as a framework for money laundering and terrorist financing. Cash flow cycles are presented in form of an algorithm as connections between irregularly and regularly acquired assets in the process of money laundering through business operations, as well as re-entry from regular flows into alternative cash flows. The "Butterfly Diagram", presenting groups of business changes enabling entry of larger amounts of money and assets owned by a company in order to be laundered or their exit with the effect of tax evasion or terrorism financing, evolved from the algorithm. Also, the "Butterfly Diagram" includes certain forms of legal and tax misuse which enable legalising the specified activities. The business reality is exceptionally dynamic and needs of money launderers keep growing, which is why there is an increase in types and numbers of business transactions that can be used for money laundering or terrorism financing, resulting in the need to keep modifying the presented "Butterfly Diagram".*

**Keywords:** *financial reports, assets, tax, money laundering, terrorism*

### 1. INTRODUCTION

Money laundering is often seen as a specific, mysterious and exotic process. However, reality speaks in favour of the theory that these are financial activities connected to illegal financial schemes, including fraud, tax evasion, drug sales, white slave trade, corruption, but also terrorist financing. Terrorism is a term closely related to money laundering and it represents the most direct threat to national and international safety. When considering counterterrorist activities, it is possible to talk about antiterrorism and counterterrorism, with a dividing line between these two terms being very faint (Bilandžić, 2014, pp. 269). Even though in advanced societies money laundering as a criminal act is undoubtedly of an economic character (Savona, 2004, pp. 3), this process is often misunderstood by anti-fraud professionals, criminal investigators, tax auditors and corporate compliance professionals who are focused on different aspects of these actions, often-times missing the larger picture due to an incomplete understanding of the scope of money laundering scheme (Turner, 2011, pp. 1). With regard to various aspects of this complex process application, money laundering can be defined in different ways, depending on one's approach to the subject, namely from criminal aspects, accounting aspects and other aspects from financial sector. Regardless of the differences between persons obliged to implement preventive measures, resulting in differences in the focus of their activities, the traditional definition of money laundering assumes three phases: placement, layering and integration (Gilmore, 2004,

pp. 32). Common characteristics of the process include: the need to conceal the origin and true ownership of the proceeds, the need to maintain control of the proceeds, and the need to change the form of the proceeds in order to shrink the huge volumes of cash generated by the initial criminal activity (Weismann, 2014, pp. 4). The modern money laundering definition is of a more flexible nature so, in addition to the above specified three stages of money laundering, it also includes modern trends such as: wire transfer and shell company activity; computer intrusion; money transmitters; identity theft; terrorist financing; alternative money remittance systems; Black Market Peso, Hawala, non-financial professionals (with the emphasis on lawyers, notaries, accountants); market for gold and other precious metals; use of travellers checks to disguise identities etc. (Odeh, 2010, pp. 64). In order to analyse money laundering risks in legal business activities, this paper will pay special attention to the scope of money and assets definition as well as their variability. The "Butterfly Diagram" considers a causal link between money laundering and legal business activities through the integration of illegally acquired money into legal economic flows and points to the complex nature of the integration phase implementation modalities. The importance of implementing money laundering and terrorism financing prevention measures in the framework of the accounting profession, which has its roots in international legislation laying foundations of the risk-based approach system, is particularly emphasised.

## **2. TERM AND SCOPE OF MONEY DEFINITION**

The need to take serious steps in the prevention of money laundering stems from the fact that the value of transactions performed with the goal of money laundering amounts to 2-5% of the World's GDP. This percentage covers two types of risks: one prudential, and the other macroeconomic as inexplicable changes in money demand, greater prudential risks to bank soundness, contamination effects on legal financial transactions, and greater volatility of international capital flow and exchange rates due to unanticipated cross-border asset transfers (Esoimeme, 2015, pp. 4). When discussing money in the context of money laundering or terrorism financing, one should keep in mind that its role is often assumed by other tangible and intangible assets. The term "money" has a broader meaning than just cash and it is synonymous with a specific property value which can be in either tangible or intangible form (De Goede, 2008, pp. 300). In addition to cash, it also implies different forms of assets which have value and can be exchanged for money (land, buildings, inventory, securities, etc.) so it can be concluded that money is synonymous with assets bearing a certain material value. If the term money is approached as a value equivalent of an asset, the term money laundering may be expanded to cover the meaning of "asset laundering". In practice, it has been shown that business operations can be used as an excellent way to hide money laundering activities (Lemieux, Prates, 2011, pp. 3). Business operations are suitable due to a large number of business activities enabling money and other forms of assets to enter regular flows. Money which needs to be laundered can originate from criminal acts, informal (grey) economy, including seemingly regular money flows (e.g. agricultural products trade, card trade, etc.), and especially tax evasion (Mitsilegas, 2003, pp. 118). Such business operations often imply tax evasion (Unger, 2013, pp. 659), and the money acquired this way seeks ways to enter regular money flows and continue to circulate in the flows. It cannot be disputed that money laundering and terrorism financing come with a large economic price paid by states and economies (Unger, 2013, pp. 673), but also individuals (Krugman, 2004, pp. 6). Tax evasion and money laundering are connected with business operations in off-shore zones. They are often principal suspects when it comes to money laundering due to transaction frequency and size of transfer. These are by definition areas with very liberally structured legislation regarding business operations as well as bank and company establishment, with a very small percentage of tax liabilities and a pronounced bank secrecy (Cindori, 2010, pp. 22). However, ever since the economic crisis of

2008, there have been strong political and financial tendencies aimed at combating tax oases. What proves to be an aggravating circumstance is that certain financial business operation schemes considered legal up to a certain point can become illegal, mainly in the aspect of those business decisions where tax planning is taking place (Cox, 2014, pp. 10-11).

### **2.1. Broad understanding of asset transformation**

Taking into account that in addition to cash, assets are also suitable for money laundering, one must wonder how quickly a form of asset can be converted into cash and turned into other forms. In regular market conditions, it takes certain time for assets to be converted from one form into another, depending on the form the assets are in. When considering the aspect of how fast assets can be turned into cash, one can argue that it will take a shorter time if a market is more developed; however, the potential of undeveloped or unregulated markets should not be ignored (Bobic, 2014, pp. 249-252). However, due to the lack of regulations and corresponding mechanisms, the undeveloped and unregulated markets are those which are particularly suitable for the conversion of different forms of assets (Blomberg, Hes, Tan, 2011, pp. 395-396). Having in mind the flexibility of assets, it is clear that the only issue is how much time it will take for previously "legalised" assets to be turned back into cash, while making a certain profit in the process. When such transactions are performed in business operations, they have to be presented in financial statements of all transaction participants. This characteristic of financial reporting provides an excellent way to detect certain participants' activities which may be suspicious for money laundering.

### **2.2. Interaction between money laundering and legal business operations**

Company business changes relate to numerous activities performed in order to achieve profit, while economic interest is the main postulate applied in companies in the areas of economy, banking, insurance, etc. (apart from the state sector and NGOs). Company business activities are presented in business, that is, accounting records based on which financial statements are composed at the end of a certain period (usually on 31 December). Since financial reports have an important place in presenting companies to financiers and investors as well as the overall public, there is a great interest in resorting to modifying information contained in them, that is, in preparing fraudulent financial statements. Association of Certified Fraud Examiners (hereinafter the ACFE) has classified corporate criminal acts in three basic groups: Corruption, Assets Misappropriation and Financial Statement Fraud. Apart from this division provided by the ACFE, there are also other divisions of corporate crime acts (Singleton, Singleton, Bologna, Lindquist, 2006, pp. 40), but what they all share is the fact that money laundering and terrorism financing are not recognised as corporate criminal acts. It is obvious that fraudulent financial statements have a strong influence on the overall economy and cause significant damage to all participants in business operations (ACFE, 2016, pp. 12) which is why forensic practices dealing with developing methods for detecting such activities are constantly being improved. Business reality points to the fact that money laundering and terrorism financing can be performed through business transactions which appear fully legal, which is why these acts need to be recognised as part of corporate crime. All activities taking place in the business operations area are represented through financial statements. If there are illegal activities in business operations, including money laundering and terrorism financing, they are to be given a legal framework in order to gain a form of legality. At the moment when they are reported in financial statements, certain modifications are necessary to disguise illegal operations. Before modifying financial statements, business documents confirming the emergence of a specific business change are often created. Thanks to the formal authentication, transactions which in fact are suspicious seem formally correct and are presented in accordance with the requirements of financial reporting. Knowledge about business operations and other information connected to

individual clients (Vickers, 2005, pp. 167) forms the basis for the performance of illegal acts, but is also the source of information which can be used to detect unusual transactions and discrepancies from clients' regular operations (OECD, 2009, pp. 15). In order to implement the above, Directive 2014/56/EU and IFAC Code of Ethics (IESBA, 2016, pp. 9, 101) introduced the terms of professional ethics and scepticism into legislation. However, even if the transactions are formally correct, in addition to applying basic professional principles (IAASB, 2012, pp. 54, 85-87), money laundering risk in clients' financial statements needs to be analysed with due diligence. In this regard, Directive 2015/849 improves the previous risk-based approach implemented by Directive 2005/60/EC by intensifying targeted prevention measures and improving efficiency by creating a global risk-oriented system.

### 3. INTEGRATION OF IRREGULARLY ACQUIRED ASSETS

Business operations enable perpetrators to achieve their goals regarding the integration of irregularly acquired assets into regular business operations, but also provide ways to meet the goal through specific (seemingly) legal transactions. Upon the completion of the process of placement followed by the investment of dirty money, the process of its integration into the financial system is continued. When dirty money is integrated into legal flows, it can stay there and circulate, but it can also return to alternative money flows and be used for illegal goals. While doing so, it is necessary to distinguish money laundering and primary illegal origin of such funds from terrorism and sources of terrorism financing. Collecting funds for terrorism financing can be achieved through multiple sources and in multiple ways which equally include illegal sources and completely regular sources such as legitimate business, donations, charity organisations, etc. Considering the initial differences between sources of these criminal acts funding, two questions come to mind: How to launder money legally through business operations and how to finance terrorism from regular business operations? The following algorithm shows the connection between irregularly and regularly acquired assets in the process of money laundering through business operations, and the connection between re-entry from regular flows into alternative cash flows in order to finance terrorism.

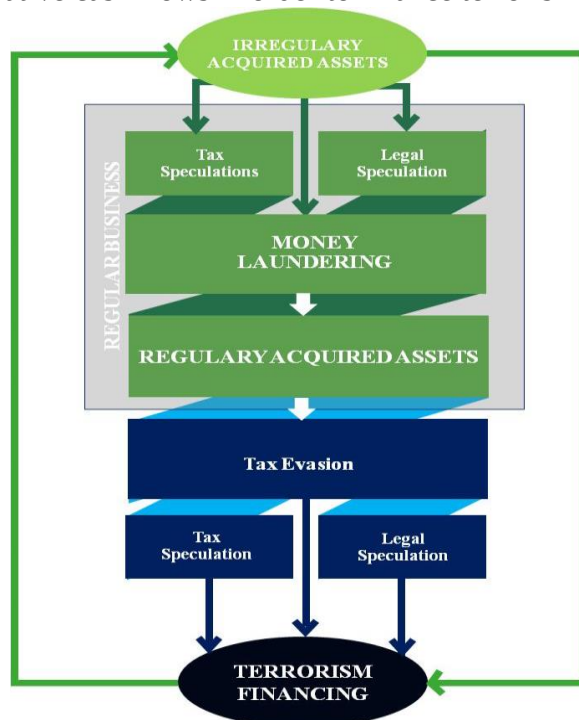


*Chart 1: Establishing a connection between irregularly and regularly acquired assets through business operations*

The algorithm shows two cycles related to business operations: the first cycle refers to the legitimization of irregularly acquired assets – money laundering, while the second cycle refers to the withdrawal of the acquired money or assets from regular flows and their transfer into alternative money flows. Apart from these two cycles, there is a cycle of irregular money flows which is often found in the beginning, but it can also be found at the end of the money laundering process. In this cycle, illegal funds are withdrawn from regular flows and transferred to irregular flows as seemingly legalised. This shows that money laundering and terrorism financing do not necessarily have to form two separate cycles, but can instead form a larger cycle consisting of several smaller sub-cycles, as shown in the algorithm. The ultimate goal of such actions is creating an illusion that a certain activity (economic or terrorist) is financed by fully legally acquired money originating from regular business operations. Furthermore, tax will ultimately be paid on such profits, resulting in the exit from the "radar zone" for such transactions, reducing the possibility of their identification or monitoring as suspicious. Assets acquired irregularly through arms and drugs trade or informal, i.e. grey economy (Unger, 2013, pp. 662-669) can be used for financing terrorist activities without ever entering regular flows or legalisation process. Also, there could be efforts to legalise irregularly acquired assets and make them a part of legal money and asset flows. After withdrawing money or assets from regular money flows, they can be used for financing various illegal activities, but the result can also be tax evasion or terrorism financing. Money laundering and terrorism financing activities presented as transactions with legal attributes create a particular challenge for identifying suspicious activities. This, alongside the fact they are often implemented or planned by experts in law, accounting and tax, is why it is difficult to detect them as suspicious. Contemporary practices dictate the necessity to look at new perspectives and options for the implementation of the process of money laundering and terrorism financing from the angle of business activities, which can be masked with paying taxes on initially illegal activities. However, that does not mean that other, already known methods of money laundering are not practised, but the reality calls for money laundering and terrorist financing modalities to be upgraded and implemented in the framework of regular business transactions which can be (mis)used for this purpose. This is why diagnostics of unusual and suspicious transactions must be continuously improved (OECD, 2009, pp. 15-17).

### **3.1. Elements of influence on risk assessment factors**

Business processes in companies occur in a specific number of cycles, where each cycle goes through a large number of changes, each of which has its own meaning, with the overall meaning interpreted only if looked at from the aspect of the entire business operation. This is why business changes cannot be observed in isolation, they must be fitted into the economic context at a company level. Business changes come from a series of events and interactions in business operations occurring through interactions between internal factors (employees, management, etc.) and numerous external factors (banks, clients, suppliers, etc.). However, when considering the suspicion of money laundering, the term "external participants" in business operations gets a specific form as this term can refer to companies or persons directly or indirectly connected to the company and its owner in a non-transparent way. One might say that owners can have a specific status since, on one hand, these are internal factors as they directly influence the company's business operations (especially in economies in transition), but on the other hand, they are also external factors with which their company conducts business. In this situation, it is not about other independent participants or business relations formed under the conditions of a free market, but about transactions offering an illusion they were achieved under regular market conditions. However, deeper analyses can provide obvious discrepancies.

When business transactions are analysed from the aspect of suspected money laundering, they should not be observed individually, but from a broader perspective, taking into account their economic meaning and time frame. In fact, if a transaction is observed in isolation and as an individual change without recognising a broader context, it can seem fully regular. This illusion of regularity can result in the suspension of independence and professional scepticism (IESBA, 2016, pp. 9, 101), which in specific cases can obstruct indications of suspected money laundering. This is why it is exceptionally important to look at business transactions from a broader perspective in order to analyse the entire context of business changes and detect connections between business changes or clients, and, consequently, detect certain anomalies.

#### 4. COMPLEXITY OF THE "BUTTERFLY DIAGRAM" STRUCTURE

The money laundering concept aims primarily at illegal business operations (arms and drugs trade, etc.), which can emphasise the conclusion that money laundering and terrorist financing will not necessarily be done through legal business transactions. However, perpetrators needed to, regardless of the economic costs (Benmelech, Berrebi, Klor, 2010, pp. 349), create transactions through which they will be able to legally bring money into the company and integrate it in the framework of business activities. The key in identifying money laundering through business operations is based on detecting individual transaction in one of the three phases of money laundering. Transactions taking place in the money placement phase are easily detectable, while those from the layering and integration phase are more subtle and harder to spot since business activities can be implemented in many ways (MONEYVAL, 2015, pp. 61). With regard to the capacity of business activities enabling suspicious transactions to be concealed, timely detection of activities from the second and third money laundering phases is very important as these are more perfidiously designed, which especially applies to those in the integration phase. When looking at how business activities are structured, it is obvious that there are certain transactions suitable for extracting assets from business operations, whether these are regularly acquired assets or previously laundered cash. The bottom line is to detect transactions which enable assets (cash or other forms of assets) to legally, and in a relatively undetected way, enter the company and become laundered or to leave the company with a goal of tax evasion or terrorism financing. The "Butterfly Diagram" presents basic business changes which are legal and enable money and assets to enter or leave legal business operations with ease, while (mis)using all the benefits of the legal and tax system.

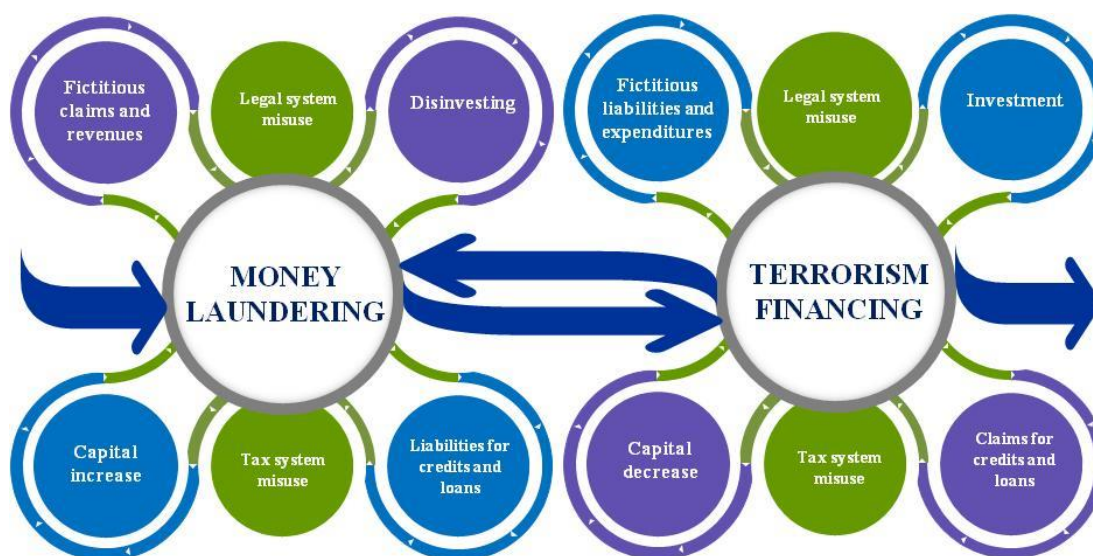


Chart 2: "Butterfly Diagram"

The left part of the diagram shows transactions enabling cash or assets to enter the company, opening way for money laundering as it enables specific cash amounts to be paid into the account legally or for specific assets to enter the company on various grounds, making them legal. The right part of the diagram shows transactions suitable for taking cash out of a company. These enable cash or assets acquired through regular business (funds which were laundered) to be taken out of regular money and asset flows and redirected into alternative flows. These types of transactions can be suitable for tax evasion or financing of terrorist activities. Apart from transactions suitable for money laundering and terrorist financing, there are activities which give money laundering and terrorism financing activities legal attributes, implying misuse of the legal and tax system (FATF Report, 2013, pp. 27).

Variability of asset movements has been illustrated by the "Butterfly Diagram", taking into account the methods which can be used to legalise money laundering and terrorism financing through business activities:

- Entering activities - Transaction enabling cash (assets) to enter the company, i.e. legal business transactions enabling assets to enter in a regular way from illegal money flows into the company without creating suspicion - activities characteristic of money laundering;
- Leaving activities - Transactions used for cash (assets) to leave the company, i.e. legal business transactions enabling assets to leave legal money flows, also that kind of transactions is suitable for terrorism financing. This can refer to any type of legal or illegal assets transferred into alternative money flows. Such transactions are usually related to tax evasion, but are also suitable for terrorist financing;
- (Mis)Use of the legal and tax system - Activities of covering up money laundering and terrorism financing relating to the mis(use) of a legal and tax system with a goal of providing a legal framework to these activities. Misuse regarding the leverage of the rule of law as a way to legalise specific transactions for which money laundering and terrorism financing is suspected.

Due to business transaction dynamics and participant needs in the money laundering and terrorism financing process, the "Butterfly Diagram" will need to be continually developed. It is clear that the perpetrators will modify activities which allow money laundering or terrorist financing to be performed through business operations, consequently resulting in completely new or transformed old forms of activities, presenting a constant challenge for those who need to identify them.

## 5. CONCLUSION

Since money laundering and terrorism financing is a problem which calls for a continuous approach, a risk-based approach needs to be systematically developed and ways of their implementation need to be detected. It is important to see and use potentials of each regulated system, starting with monitoring persons obligated to report suspicious transactions, through potentials in the private sector and all the way to tax authorities which can greatly contribute to identifying suspicious activities in the framework of predicate acts. A timely detection of potential money laundering and terrorism financing modes creating an illusion of regularity is crucial for the establishment of appropriate prevention mechanisms. What creates a problem for the identification of these activities is that they look fully regular, starting from their good design, documentation and tax payment coverage. However, the characteristic of apparent regularity is something which should arouse suspicion and a suitable reaction with regard to performing additional analyses to confirm or dispute money laundering and terrorism financing suspicions. The starting point for assessing the risk of money laundering and potential terrorism financing through business operations is provided in form of the approach to suspicious



transactions shown in the "Butterfly Diagram". Principles shown there point to the fact that when it comes to identifying risk factors, it is necessary to pay due diligence to all transactions in which cash and other forms of assets enter the company. Also, apart from the money laundering risk factor, we have also shown risk factors for terrorism financing, including regular business operations as a form of terrorism financing, as well as the (mis)use of the legal and tax system to cover up these activities. Contemporary conditions and business operation trends create great challenges for the scientific and expert public as well as practitioners who are in front lines when it comes to detecting suspicious transactions and timely identification of suspicious activities. For reasons already mentioned, it is important to build an early alarm system which would create stronger monitoring of specific types of transactions and enable timely identification and reaction to any detected suspicious, unusual and illogical transactions.

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## THE NEW CARBON ECONOMY IN SOUTHEAST ASIA; INDONESIA & MALAYSIA FROM CULTURAL PERSPECTIVE

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### **ABSTRACT**

*Since forests have increasingly been considered a critical issue under United Nations Framework Convention for Climate Change, a new approach to mitigating terrestrial emissions associated with climate change called ‘REDD+’ (Reducing Emissions from Deforestation and forest Degradation) is introduced. REDD+ is a proposed performance-based mechanism in which developed country donors, corporations, non-governmental organizations, and individuals will compensate developing countries for forest emissions reductions. This leads to “new carbon economy” - the emerging trade in carbon emissions, along with the series of market-based policy instruments designed to reduce global greenhouse gas (GHG) emissions through the creation of markets for carbon. Southeast Asia hosts a number of early REDD+ type projects. However, there have been distinctive differences between countries that have been successful in implementing REDD+. Potraying on frameworks of national culture, this article is exploring the applicability of REDD+ in the developing country of Malaysia which has been cited amongst the highest globally in growth of greenhouse gases (GHG), but the involvement in REDD+ project is so limited compared to Indonesia which is leading in REDD+ implementation. Using Hofstede’s construct of national culture, social units in Malaysia and Indonesia are investigated where REDD+ is proposed as a culturally dependent strategy. It is recommended that the successful implementation of REDD+ as new carbon economy demands compliance between the strategies that are adopted and the country’s cultural characteristics. This study argues that the ability of the “new carbon economy” to provide real benefits for sustainable development may ultimately be obstructed by the nature of the society itself.*

**Keywords:** Carbon Economy, forest, Indonesia, Malaysia, REDD+ , national culture

### **1. INTRODUCTION**

Southeast Asia hosts a number of early REDD+ type projects (as of January 2012): Indonesia (44 projects), Cambodia (4 projects), Malaysia (1 project), Vietnam (7 projects), Thailand (1 project), Papua New Guinea (6 projects), Philippines (4 projects), and Laos (1 project); and several countries in the region have also started national-level preparations to engage with a

future REDD+ mechanism where most projects are replacement of swidden agriculture (slash-and-burn or shifting cultivation) to other systems that potentially reduce emissions and/or increase carbon sequestration. Interesting to note here is that though Malaysia has been cited amongst the highest globally in growth of greenhouse gases (GHG) emissions with a 7.9% compounded average growth rate from 1990 -2006 and is predicted to increase by 74% from 189 million tonnes of CO<sub>2</sub>e in 2005 to 328 million tonnes of CO<sub>2</sub>e in 2020, the involvement in REDD+ project is so limited compared to neighboring country Indonesia which notable possesses cultural proximity close to Malaysia, that has become a leader in international efforts to reduce emissions from deforestation and forest degradation in developing countries. Currently, the Ministry of Natural Resources and Environment in collaboration with the United Nations Development Programmed (UNDP) is undertaking the National REDD+ Readiness project with the aim to develop a national REDD+ framework for Malaysia (Niiyama & Ismail, 2013). Although the benefits of REDD+ are deemed to be attractive, they may be difficult to achieve as it depends critically on a country or region's particular circumstances. As REDD+ implementation has three phases: *readiness*, *policy reforms*, and *result-based action* (Brockhaus & Angelsen, 2012), this research will concern with the first phase in terms of REDD+ *architecture* in Malaysia by particular reference to the national culture of the respective country. Although Malaysia is a progressive nation in terms of industrialization, Malaysians are conservative in most business dealings and usually governed by concrete past experience. Therefore, a new practice such as introducing green electricity, creating low carbon house, marketing electric car and carbon economy may not provide comfort for decision-makers to commit themselves to until it is proven acceptable. In explaining the lack of growth, Lim (2001) proposed two schools of thought: the structural hypothesis and the cultural hypothesis. The structural hypothesis blamed the structural impediments erected by the current government, while the cultural hypothesis proposed that values were instrumental in obstructing advancement. Malaysian government actually has carried out some prestigious and sophisticated projects in responding to reduce carbon emission. The effort to overcome the challenge is initiated through the formulation of Economic Transformation Program strategies emphasizing improvement in the area of energy, building, water & waste management and transportation. The progress however has been slow and rather unconvincing despite huge incentives being introduced. At this point, it is obvious that there is limitation in explaining the phenomenon using the structural hypothesis. Conditioned this way, it is time to observe the cultural hypothesis that proposes Malay values are instrumental in obstructing their advancement. The cultural theory approach is seen to be helpful as framing approach for thinking creatively about available forms of organization and in exploring a variety of what-to-do ideas that surround public services and government (Hood, 1998). National culture can be defined as country's shared practices and values. Values define conceptions of the desirable, and guide the way social actors (e.g. organizational leaders, policy makers, individual persons) select actions, and evaluate people and events (Schwartz, 1992). They represent the implicitly or explicitly shared abstract ideas about what is good, right, and desirable in a society. Despite that most empirical research finds the causal link between national culture and environmental performance for countries, the effect of national culture on firms' environmental proactivity has not been explored so far (Calza, et.al, 2016) and scholars have started to consider the influence of national culture on environmental proactivity (Paulraj, 2009; Bansal and Roth, 2000). Therefore, based on these considerations, cultural values should have a direct influence on environmental proactivity like REDD+ program. The main purpose of the paper is to analyze how national culture measured by cultural dimensions provided by Hofstede (2007) act as a stimulating driver for a firm's proactive new carbon economy coined in 'REDD+' (Reducing Emissions from Deforestation and forest Degradation) project within Malaysian and Indonesian setting.

## 2. LITERATURE REVIEW

The originality of the REDD proposal is its incentives-based mechanism designed to reward the governments of developing countries for their performance in reducing deforestation as measured against a baseline. The reference to the theory of incentives is implicit that the government is taken as any economic agent who behaves rationally by taking decisions after comparing the relative prices associated to various alternatives. Such an approach ignores the political economy of the state which is often ruled by governments with private agendas fuelling corruption (Karsenty & Ongolo, 2011). Alike Indonesian's counterpart that is hard to separate business from corruption, collusion and nepotism (Blunt, et.al, 2012) Malaysia also seems difficult to separate economics from politics as the government plays the role of political patron to selected firms (Fraser et. Al, 2006). For example, the Malaysian government injected substantial cash into the financially distressed Proton, the national car company to reduce firm's bankruptcy risk (Restall, 2000) and bought 29% of Malaysian Air System in December 2000 at a price roughly twice the market price (Johnson and Mitton, 2003), and the most recent Malaysian Development Berhad scandal that brings country to the chaos (Healy, 2016). With this particular condition, the study will apply national culture theory which is recognized as a fundamental determinant of differences among not only individuals but also organizations from different countries (Hofstede, 2001). Also regarding to environmental sustainability, scholars generally refer to Hofstede's cultural dimensions (Ringov and Zollo, 2007; Calza, et.al, 2016).

### 2.1. A National Cultural Ecology

Hofstede's (1980) seminal work on national culture noted several dimensions along which national cultures differ: *individualism vs collectivism*, *power distance (PD)*, *uncertainty avoidance (UA)*, *masculinity versus femininity*, and *time orientation*. Hofstede (2007) maintained that these dimensions reflect 'basic problems that any society has to cope with but solutions differ'. The national culture model (Hofstede, 2001; Hofstede & Minkov, 2010) has been widely applied in previous academic research in different fields such as accounting, management, economics and sociology.

*Power distance measures "the extent to which a community accepts and endorses authority, power differences, and status privileges"* (House et al., 2004). High PD nations are more likely to have employees who obey the orders of their superiors without question. Malaysian public institutions are often characterized as highly centralized, control-oriented public sectors that are accountable to superiors (Alam Siddiquee, N. 2010). Poor governance practices at the lower levels are the consequence of poor practices at the higher levels. In addition, organizations that are high in PD have less employee participation in decision making. Javidan, et.al (2006) contended that teambuilding and participative decision-making are not effective in high PD countries and cultures because employees from the different levels are not comfortable interacting face to face in a group due to the top-down hierarchical structure. This is against the basic principles of REDD+ which is to encourage decision-making partnerships, networks, and interchange among stakeholders (Corbera, E., & Schroeder, H. 2011). Given that high levels of power distance are associated with authoritarianism, polarization, and inequalities (Cohen et al., 1996), we conclude that in high power distance societies, managers are less aware of others' needs and of environmental matters as well. In line with Zollo and Ringov (2007) discovered a negative relationship between power distance and social environmental initiatives, REDD+ environmental initiatives, is more likely to have success in such low PD cultures.

On the basis of the above discussion, it is proposed that a country with a higher PD is less likely to implement REDD+ successfully.

The first proposition of this study’s formulation is therefore presented as follows:

*Proposition 1: Successful Carbon Economy Implementation is contingent upon Low Power Distance.*

*Uncertainty avoidance measures “the extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate the unpredictability of future events” (House et al., 2004).*

In high uncertainty avoidance societies, people tend to be more anxious (Hofstede, 2001; House et al., 2004), take moderate, carefully calculated risks, rely on formalized policies and procedures and show strong resistance to change. They create rules and formalize policies and procedures to ensure standardization and conformity that foster continuity. Schneider and de Meyer (1991) noted that people in high UA cultures tend to respond more forcefully to environmental uncertainty, have a greater concern for stability and security, and desire instruments to control their lives. Parboteeah et al. (2012), indeed, explain that in high uncertainty avoidance societies, individuals will be willing to put in place systems and procedures to ensure the sustainability of the environment by reducing or removing any uncertainty that might have a negative impact on the environment. In so doing, people are likely to remove anxiety that might be associated with uncertain environmental conditions. In contrast, in low uncertainty avoidance societies like in Malaysia and Indonesia, people may not be concerned about uncertainties in the environment since they are more comfortable with ambiguity and uncertainty. People in low UA societies favor well-defined rules and regulations that reduce innovation by public officials. This militates against the reforms initiated under REDD+ that aim to broaden managerial discretion and innovation in the interests of achieving substantive results (Sunderlin, et.al, 2015). Consequently, we develop the following proposition:

*Proposition 2: Successful Carbon Economy Implementation is contingent upon Collective Society*

Cultures with a high degree of *masculinity* often represent a preference in society for achievement, heroism, assertiveness, and material rewards for success, while *feminine* cultures stand for a preference for cooperation, modesty, caring for the weak, and quality of life (Hofstede, 2007). People from assertive societies are expected to “manage their own affairs” (Chui and Kwok, 2009), suggesting that they may pay less attention to initiatives beyond their own interests, such as environmental protection. Husted, (2005); Orij (2010) and Park et al. (2007) argued that the higher the degree of femininity of a given culture, the higher the degree of sustainability, environmental management, and commitment to sustainable development. These findings were confirmed in later research developed by Peng and Lin (2009). Zollo and Ringov (2007) find a positive relationship between gender egalitarianism and environmental performance. Also Tobey & Yasanthi Perera (2012) find a positive effect of gender egalitarianism on CSR. The positive effect of gender egalitarianism is coherent with the idea that gender egalitarianism is evidence of femininity, that is the inclination to care about the environment, the quality of life, and future generations (Power et al., 2015; Calvelli and Cannavale, 2013).

Based on previous discussed research, the following proposition is proposed:

*Proposition 3: Successful Carbon Economy Implementation is contingent upon Femininity.*

*Normativism/Pragmatism* is the fifth dimension which differentiates national cultures. In this sense, Hofstede (2001) indicates that normative societies prefer to maintain time-honored traditions while viewing societal change with suspicion. On the contrary, pragmatic societies encourage thrift and efforts in modern education as a way to prepare for the future (Hofstede & Minkov, 2010). Pragmatic cultures welcome values such as persistence, saving money, honesty, adaptation, ability, and self-sufficiency and discipline, and companies operating under this scheme mostly focus on accountability principles and on achieving long-term financial and non-financial objectives (Hofstede & Minkov, 2010). On the contrary, in short-term oriented or normative cultures, main work values are freedom, rights, achievement, and thinking for oneself. In fact, Hackert et al. (2012) revealed that investments in pollution prevention, investments in recycling, and waste reduction were mainly done by companies operating in pragmatic cultures. This consideration is in line with the idea that pragmatic cultures are more committed to environmental preservation and related sustainability issues. Based on these premises, the following proposition is proposed:

*Proposition 4: Successful Carbon Economy Implementation is contingent upon High Uncertainty Avoidance.*

*Individualism* characterizes a society in which the ties between individuals are loose, and everyone is expected to look after himself or herself and his or her immediate family members only. Ho et al. (2012) consider that individualistic communities tend to appreciate freedom and independence and usually prioritize personal interests than the common well-being. *Collectivism* characterizes a society in which people from birth onward are integrated into strong, cohesive in-groups, which, throughout one's lifetime, continue to protect him or her in exchange for unquestioning loyalty. Therefore, *individualism* refers to the importance of the individuals in the society, and personal rights tend to have much influence. In contrast, *collectivist* societies would exhibit close ties between individuals, extended families, and collectives where everyone takes responsibility for fellow members of their group (Peng & Lin, 2009). According to Husted (2005) and Scholtens & Dam (2007), a society that fosters collectivism tends to have its members integrated in groups early in their lives. Thus, the focus is more on the group than on the individual, the predominant values include cohesion and consensus, thus reducing initiatives for individuals. In this way, Akaah (1990) revealed that workers of individualistic countries were less ethical than those pertaining to collectivist countries. As such, one would expect collectivist societies to emphasize more of a concern about the impact of business on society (Ho et al., 2012). Similarly, Blodgett, Lu, Rose, and Vitell (2001) addressed that collectivist societies are likely to be more sensitive to the stakeholders' interests. This was also confirmed by García-Sánchez, Cuadrado-Ballesteros, and Frias-Aceituno (2016), also revealing that companies from collectivistic countries tend to have greater incentives to disclose social and environmental information to their stakeholders, to favor their decision-making processes. Based on the previous reasoning, the following proposition is proposed:

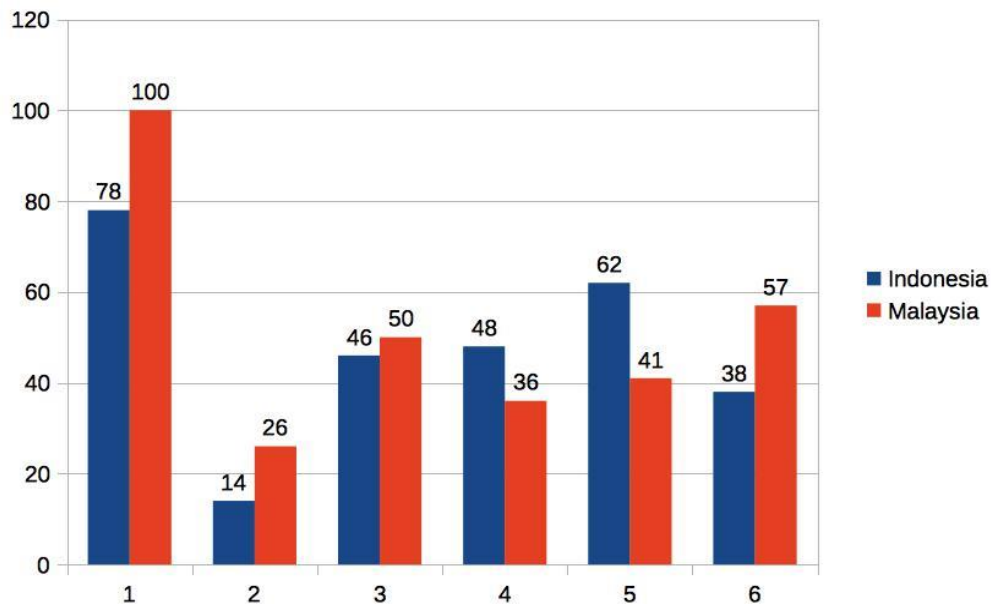
*Proposition 5: Successful Carbon Economy Implementation is contingent upon Pragmatic Society.*

The latest addition to Hofstede's culture framework is the dimension of indulgence. Indulgence is defined as "a tendency to allow for free gratification of basic and natural human desires related to enjoying life and having fun". Its opposite pole, restraint, stands for a culture employing strict norms in order to regulate and restrict the gratification of human needs. Since there is not yet found the research on relationship of this dimension to the new carbon

economy, we expect that restrain cultures serve as a fertile ground for implementing carbon economy as this value is closely related to Pragmatic cultures (Hofstede & Minkov, 2010) leading to the following proposition:

*Proposition 6: Successful Carbon Economy Implementation is contingent upon Restrain Society.*

The comparison between the two respective ASEAN countries on those 6<sup>th</sup> dimensions are depicted below:



Note: 1. = Power Distance, 2. = Individualism, 3. = Masculinity, 4. = Uncertainty Avoidance, 5. = Long Term Orientation, 6. = Indulgence

*Figure 1. Comparison of Indonesia & Malaysia in Cultural Dimensions*

The six cultural dimensions reveals that Malaysia scores high in PD (the highest in the world), high in collectivism, between the pole of quality of life and quantity of life, low in uncertainty avoidance and belongs to normative societies and belongs to indulgence society. In the other hand, though belongs to high power distance, Indonesia does not score as high as Malaysia in this dimension. Also Indonesia is more collectivist than Malaysia, belongs to Feminine society, higher than Malaysia a little bit in uncertainty avoidance, and most important not like Malaysia, Indonesia belongs to pragmatic and restrain society which are prerequisites for implementing the carbon economy.

To sum up the applicability of new carbon economy from cultural perspective in the two ASEAN countries is depicted below (Table 1.):



*Table 1. Cultural Compatibility in Implementing Carbon Economy*

| Cultural Requirements      | Indonesia         | Malaysia          |
|----------------------------|-------------------|-------------------|
| Low Power Distance         | Not Compatible    | Not Compatible    |
| Collective Society         | <i>Compatible</i> | <i>Compatible</i> |
| Feminity                   | <i>Compatible</i> | Not Compatible    |
| High Uncertainty Avoidance | Not Compatible    | Not Compatible    |
| Pragmatic                  | <i>Compatible</i> | Not Compatible    |
| Restrain                   | <i>Compatible</i> | Not Compatible    |

The table shows that Indonesia is only not compatible in Power Distance and Uncertainty Avoidance dimensions. However, with the score of 78 out of 100 in PD, Indonesia is still able to adjust compared to Malaysia which is known as the highest power distance country in the world. In term of uncertainty avoidance Indonesia is approaching the boarder line (48 out of 50) also making the adjustment is relatively easy to meet the requirements of carbon economy implementation.

### 3. CONCLUSION

Though the two neighboring countries of Malaysia known as “Bangsa Serumpun” - of the same origin- and possessing cultural proximity, the cultural ecology presents problem for carbon economy implementation in Malaysia. The rhetoric of forest protection as expressed in carbon economy, cannot be applied universally in the presence of cross-cultural differences. By using Turner's (2002) metaphor, three types of diners are used to illustrate the readiness of implementing carbon economy in Southeast Asia Countries. Enthusiastic diners are represented by Indonesia (44 projects), cautious diners are represented by Vietnam (7 projects) and Philippines (4 projects) and diners who are unfamiliar with the menu are represented by Malaysia, Thailand, Laos (1 project each). The enthusiastic diners have bureaucracies that are capable of learning and adapting. The cautious diners demonstrate some degree of decentralization and privatization, but with only minimal changes within the centralized state. The unfamiliar diners have yet to build capacity and systemic processes to initiate and sustain reform in forest sustainable management initiatives. Since Malaysia is placed in diners who are unfamiliar with the menu, pragmatic and contextual application and adaptations of carbon economy are required in dealing with the current forest sustainable management initiatives. Empirical insights into carbon economy attempts from national culture insight most clearly indicate that Malaysian's ability to fit into this framework is problematical. However, Malaysia can still learn from the enthusiastic dinners - Indonesia that has cultural proximity and has become a leader in international efforts to reduce emissions from deforestation and forest degradation in developing countries, critically scrutinize the potential benefits and adverse outcomes, and selectively use only those components of such models that are relevant to its own societal contexts and people's need.

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## DO BILATERAL INVESTMENT TREATIES INCREASE FDI? : EVIDENCE FROM SOUTH ASIA

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### **ABSTRACT**

*This paper econometrically investigates the effect of Bilateral Investment Treaties (BITs) on Foreign Direct Investment (FDI) into five South Asian countries. It employs an extensive panel data model to conclude that the BITs signed by Bangladesh, India, Pakistan, Nepal and Sri Lanka between 1970 and 2014 have not led to an increase in FDI- a result that is later established on theoretical grounds as well. When this conclusion is juxtaposed with compelling literature on the BIT's deleterious impact on domestic sovereignty and independent policy space, the scope for a pareto superior outcome is envisaged; this outcome is shown to be a Nash equilibrium using an augmented prisoners' dilemma model with a provision for mutual cooperation.*

**Keywords:** *Bilateral Investment Treaties, Foreign Direct Investment, South Asia*

### **1. INTRODUCTION**

Since most structural determinants of FDI, especially of the market seeking variety, remain outside the direct control of short-term policymaking, two sets of measures acquire crucial significance for capital-deficient countries: unilateral regulatory changes, such as opening up previously restricted industries to foreign capital; and bilateral agreements in which states commit to binding obligations with respect to repatriating profits, dispute settlement etc. (Berger et al, 2012). A bilateral investment treaty, in establishing the terms and conditions for private investment by nationals and companies of one state in another state, falls within the latter category of policy instruments. This treaty has gained immense fervour amongst policymakers in the developing world, suggested by the fact that between 1990 and 2009, the number of BITs signed by developing countries increased from 200 to over 2000 (Colen et al, 2014). South Asian countries too have not shied away from jumping onto the bandwagon, and have signed an impressive total of 203 treaties till date, with India maintaining one of the largest BIT networks in the world. Surprisingly, then, there exists sparsely little evidence which attests to the treaty delivering on its number one objective for countries in this region, i.e. increasing inward foreign investment. Few studies have tackled this question from a national perspective, (Banga, 2003; Kathuria, 2016) while no author has yet investigated the promise of BITs for the entire South Asian region. As far as large sample studies are concerned, which use data for a number of developing countries, prevailing evidence is at best inconclusive. In this light, conducting a region level study for the SAARC complex becomes important- as also for four other reasons. Firstly, despite being one of the world's fastest growing regions, it attracts the lowest amount of FDI as a percentage of GDP out of all developing regions. South Asia's economy is almost twice as large as Sub-Saharan Africa's, yet over the 2000-11 decade, South Asia's average annual inward FDI flow of US\$18.3 billion was smaller than Sub-Saharan Africa's US\$19.4 billion (Gould et al, 2013). Therefore, policies with the potential of increasing FDI into this region's poverty-stricken countries acquire immediate relevance. Secondly, South Asia has not garnered enough attention from BIT scholars compared to what regions like Latin America, Eastern Europe and Africa have solicited from subject matter experts (Gross and

Trevino, 2005; Birch and Gallagher, 2006; United Nations 2016). Thirdly, Gould et al (2013) have highlighted certain idiosyncrasies of the SAARC region in terms of its determinants of FDI inflows, which should ideally precede an independent empirical investigation for South Asian countries by including the explanatory variables most relevant to South Asian FDI. Finally, given the vehement dissonance between studies that include large samples of developing countries, (Sauvant and Sachs, 2009) it can be reasonably assumed that regional level studies might help solve this conundrum since a BIT is expected to play out differently in different parts of the world, while the determinants of FDI too might simultaneously vary over space<sup>1</sup> (Asiedu, 2002).

## 2. BITS AND SOUTH ASIA: SOME STYLISED FACTS

### *A Brief History of BITs*

In the beginning of the 20th century, when most of the world was controlled by a small number of principal nations, the widespread consensus was that an investor's property must be protected in foreign lands through binding international laws. Hence Hull rule was born, providing for appropriate compensation to the investor in case of their capital being expropriated. With the passage of time, erstwhile colonies became sovereign, and their views started becoming relevant to the framing of expropriation related laws. Having for long experienced atrocities on the end of foreign powers, they were sceptical to openness, and with low international support, the Hull rule fell. Consequently, capital-exporting nations, which were fearful of their capital being expropriated in former colonies, started propagating the use of bilateral investment treaties. It was after the decline of Soviet Union that a sharp rise in the number of BITs signed is noted. Two main reasons have been identified for the same- first, that market ideology had emerged victorious with the fall of Soviet Union and the economic success of several Washington consensus abiding East Asian economies; second, that due to the debt crises of the 1980s, FDI emerged as the only reliable source of capital (Guzman, 1998).

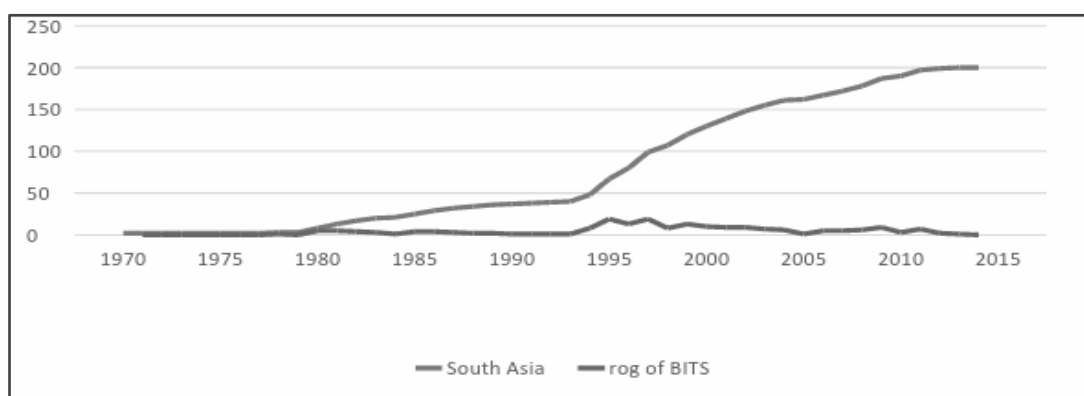


Figure 1: The lower line shows the rate of growth of all BITs signed while the upper line shows the faster rate of growth of BITs signed by South Asian countries, from 1970-2015

<sup>1</sup> Another benefit of a region-level study is the increase in the number of data points vis-a-vis country-level investigations. Studies of the former kind will yield estimates which are more precise, and thus come with greater reliability.

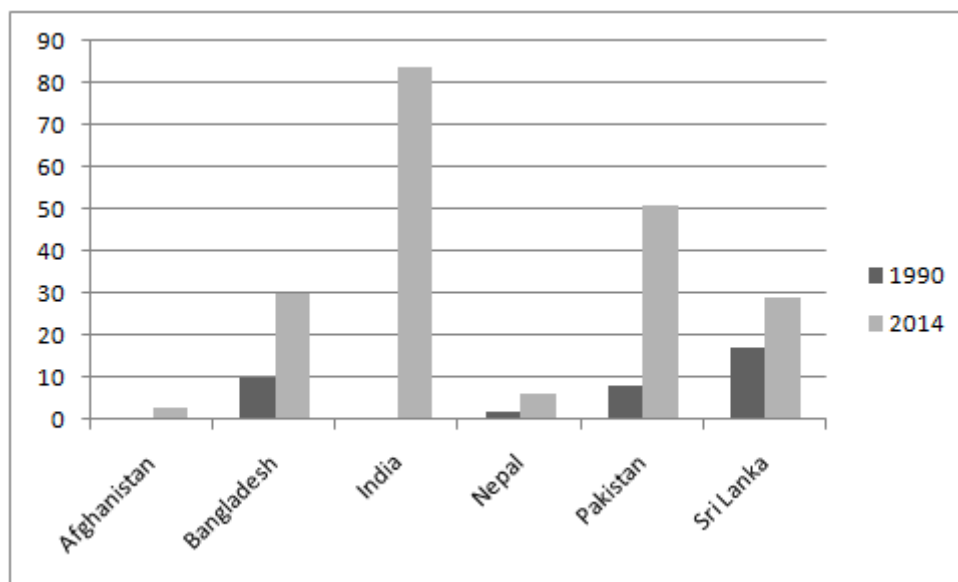


Figure 2: Total number of BITs signed by SAARC countries until 1990 and 2014 (Bhutan and Maldives have not signed any BIT till date).

### Trends in South Asia

We see an upward trend in the BITs signed by countries in this region since the first ever treaty was negotiated between Pakistan and Germany in 1959 (Figure 1). The number of BITs in South Asia saw a precipitous jump in the period 1979-82, and again after 1994. The growth rate of BITs has been falling since 2000, and has reached a stagnation post 2010. A similar stagnation was also witnessed from 1991-94.

### Costs attached to BITs

As described in the introduction, BITs contain provisions to safeguard the interests of foreign investors. These provisions understandably have immense (negative) consequences for the sovereignty of nation states. If the government acts in a way that affects the profits of the investor protected under the treaty, no matter how beneficial that policy is to a nation's domestic priorities; the investor can sue the host country under an international tribunal (Hallward-Driemeier, 2003).

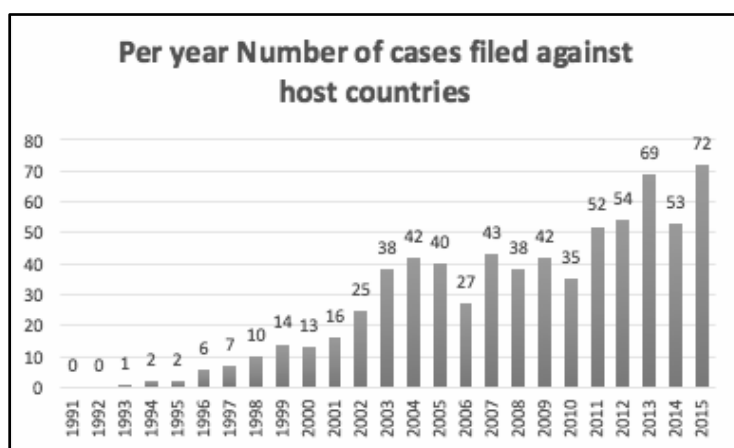


Figure 3: Number of cases filed against host country by year

Figure 3 shows that the number of cases filed against host countries- mostly developing and transition nations- have risen substantially. In 2015, as many as 72 cases were filed against the host countries. The general trend has been that around 50% of cases are settled in favour of investors, out of all the cases where judgments are passed by the international court.<sup>2</sup> An equally large number of cases are settled outside the court. Though the numbers are baffling, the nature of these judgements is even more disconcerting.

- *The judgments do not take context of economies in account.*

White Industry claimed and was subsequently awarded interest payments from the Government of India after the payment directed by IHCL to GoI were delayed due to the Indian judicial system. The delay caused in this case was genuine and arguably unavoidable owing to the enormous load of pending cases with the Indian courts (Kathuria et al, 2016).

- *Restricts governments from modifying policies for the benefit of its citizens*

Firstly, the provisions of a BIT are usually defined in a very broad manner. Hence, they are liberally open to interpretation. Secondly, the arbitral tribunals convene ad hocs to decide on public policy matters. Given the divergence in arbitral practice and interpretation as well as the optimal confidentiality over proceedings that prevent transparency with little possibility of appeal or review, many legal experts question the validity of their decisions. This even more so since many claims are against the public good. Thirdly, attempts by states to craft more balanced ISDS provisions that allow investors qualified access under terms outlined by the

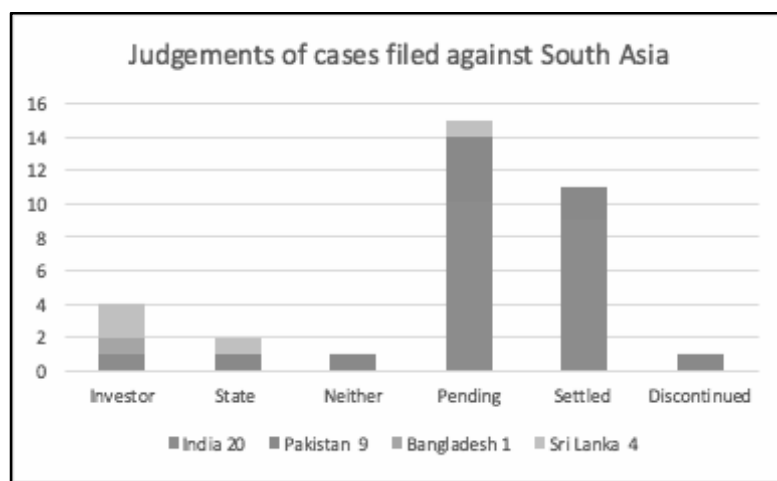


Figure 4: Judgements of cases filed against South Asia

treaty are viewed as risky. The UNCTAD states in its IIA Pink Series that qualifying or limiting ISDS provisions could undermine the quality of ISDS as an investment promotion tool by reducing protective coverage under the treaty.

<sup>2</sup> There is another reason why BIT arbitrations at ICSID are inherently biased towards the developed. It has been found through conversations with subject matter experts that the legal conventions adopted at the tribunal more closely mirror the ones followed in the Western world. Lawyers from developing countries, usually trained in relying on precedence, are caught off guard when they find their counterparts arguing primarily on the back of logic and reason, with scant emphasis laid on precedence

- *Imposes high financial cost*<sup>3</sup>

The average claim in BIT arbitrations is now about \$492 million, with awards averaging \$81 million. Any assessment of the financial exposure must also account for the costs of settlement which again often exceed \$100 million. Even when 50% of the judgements are in favour of the investors, it causes a huge cost to host countries which are mostly developing, due to the above mentioned reasons.

*Cost infringed at South Asia:* For South Asia as a region, a total of 34 cases have been filed against its constituent nations. (Figure 4) While the majority of decisions is pending, the number of disputes settled in favour of investors is double the number of disputes settled in favour of state. (UNCTAD, 2016)

### 3. LITERATURE REVIEW

There are a host of studies investigating the impact of BITs on FDI inflows. However, there is roughly an equal split between their conclusions with regard to the treaty's deliverance on its promised benefits. In the late 1990s, when BITs were the flavour of the day, very few studies were conducted to test their impact on FDI inflows into developing countries. Out of the few which were- notably by UNCTAD itself- they shed an unfavourable light on the BIT's impact on FDI inflows. (UNCTAD, 1998; Hallward-Driemeier, 2003). In the early 2000s, a consensus emerged (among academics) that though the BIT might have some positive impact on FDI inflows, the effect was predominant in countries with already stable business environment and strong domestic institutions. This would not have gone down well with policymakers in developing countries who were willing to enter into these treaties and compromise on their sovereignty only because their countries lacked such strong and conducive institutions in the first place: their fancy was that the BIT would help them make up for it.

However, this (mild) consensus was jeopardised by Neumayer and Spess (2005) which concluded that BITs might also function as substitutes for poor host country institutional quality and hence increase FDI inflows into developing countries. A stronger theory, that merely signing a BIT sends a positive signal to foreign investors, and hence there is an accompanying increase in FDI even before the treaty is formally ratified, was also advanced around this time (Egger and Pfaffermayr, 2004). At a global level, Susan Rose argued that as worldwide BIT coverage goes up, overall FDI inflows to developing countries may increase (Rose-Ackerman, 2009). Additionally, two studies that were primarily regional in nature, and hence of special relevance for this paper, found a strong positive relationship between the total number of BITs concluded by the country and its FDI inflows. Grosse and Trevino (2005) looked at Central and Eastern Europe, while Gallagher and Birch (2006) studied the Latin American region. A number of recent studies have additionally cast a positive light on the BIT. When individual provisions in the treaty are accounted for, it has been found that stronger treaties are more successful in stimulating higher FDI (Berger et al, 2013). Another recent paper, which includes unilateral capital account liberalisation as a confounding factor that could have led to the over estimation of the BIT's efficacy, concludes that though BITs have a lesser influence than what had been established previously, they are nevertheless successful in spurring FDI into developing nations (Busse et al, 2010).

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<sup>3</sup> Empirical evidence on the extent of this sovereignty cost is difficult to find, partly because information is not in the public domain; counterfactuals are not available; and biases undermine the evidence base. (Cotula, 2014)



A German firm level study of BITs- the first of its kind- also concludes that BITs are a good bargain for countries seeking to increase foreign investment into their economy (Egger and Merlo, 2012). Despite a number of studies pointing to the affirmative, we are still far from reaching a broad consensus regarding the BIT's effect on FDI. Aisbett (2007) has demonstrated the potential endogeneity that can arise when a large amount of FDI to a particular nation prompts investors to lobby their government to sign a BIT with the other country to secure their investments. This argument can significantly weaken the conclusions from previous studies that have not explicitly accounted for this observation, as most of them have not. The great chasm between academic studies leads one to survey investors and MNC's who actually undertake the foreign investments. Some surveys that have been conducted point to the almost universal ignorance of investors regarding the BIT. According to them, their investment decisions are majorly influenced by economic factors such as market size, growth and the regulatory climate, and very rarely depend on whether a BIT exists between their respective nations (World Bank, 2004).

Delving into the composition of FDI, it has also been argued that BITs are most effective at stimulating FDI into the natural resource sectors in developing countries and not in the employment intensive ones such as manufacturing- hence dulling the FDI's prospective contribution to both employment generation and technology transfer (Colen et al, 2014). Finally a meta analysis by Christian Bellak concludes that there is no significant evidence that BITs lead to a spurring of FDI (Bellak, 2015).

#### **4. COMPARABILITY OF BITs ACROSS SOUTH ASIAN COUNTRIES**

BITs signed by different countries need not be uniform and may vary on various accounts like definitions of investment, administrative procedures etc. Different BITs, on account of their specific provisions, are expected to have differential impact on FDI. For instance, “a broad definition of investment” by definition would be able to get more investment into the country. It is hence crucial to assess the characteristics of the BITs signed by South Asian countries before analyzing their impact on FDI inflows. The important characteristics of the BITs are as follows:

*Table following on the next page*

| Characteristics of BIT                    |                                                                                                                                                     |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition of investment                  | Narrow or Broad                                                                                                                                     |
| Admission vs. establishment               | Requires administrative approvals or is establishment based                                                                                         |
| National Treatment                        | Treatment to national vs. domestic investors is either “same” or “as favourable as” as “or no less favourable”                                      |
| Most Favored Nation Clause                | Scope of MFN clause is ‘broad’ or ‘narrow’                                                                                                          |
| Fair and Equitable Treatment              | Whether Fair and Equitable treatment is included in the treaty or not                                                                               |
| Direct and Indirect Expropriation covered | Covers both direct and indirect expropriation or only direct expropriation                                                                          |
| Free Transfer of investment-related funds | Ability to freely repatriate funds is available or not                                                                                              |
| Non-economic standards                    | Whether BIT seeks to protect human rights, environment, etc.                                                                                        |
| Investor-State Dispute Mechanism          | Investor State dispute mechanism available or not                                                                                                   |
| Umbrella clause                           | An umbrella clause extends the scope of the application of a BIT, and offers more protection to the investor                                        |
| Temporal scope of application             | Whether Treaty protection is extended to investments made before the entry into force of the agreement, or the coverage is restricted to the future |

Table 1: Common clauses in a Bilateral Investment Treaty

An interesting finding here is that the BITs signed by countries in the South Asian region have been broadly uniform, with only minor variations observed in the strength of clauses across countries (and partner nations). All these BITs have a broad definition of investment; are conservative for approvals as any investor decision to invest is subject to an administrative approval by the host state; allows free transfer of investment related funds; and investor state dispute mechanism is available. This point is important and worth highlighting since it will allow us to conduct a meaningful econometric investigation into the impact of BITs on FDI inflows into South Asia. In the absence of such homogeneity, we would have had to assume that all BITs, irrespective of the strength and reach of their provisions, have an identical effect in spurring investment flows. Clearly, this would have been a very strong simplification, since investment decisions are naturally expected to rely upon the nature of protections investors will get on entering a particular country.

## 5. DESCRIPTION OF THE DATA AND THE VARIABLES

This paper analyses data for five of the eight SAARC nations- namely Bangladesh, India, Pakistan, Nepal and Sri Lanka. Bhutan and Maldives have not signed a BIT till date, while Afghanistan’s FDI data is publicly unavailable for the period 1990-2001. For the five countries that are studied, relevant data has been collected for a 45-year time period (1970-2014) for FDI data from UNCTAD is available only starting 1970. The bulk of these treaties were signed in this time range with only two South Asian countries signing a BIT before 1970. In the subsequent panel data regression analysis, the dependent variable of interest is the *log of net FDI inflows* that has been collected from UNCTAD. Although this choice of dependent variable is fairly common in literature, papers have also used FDI/GDP, and inward FDI as a proportion of the total FDI to all developing countries, for assessing the impact of BITs on foreign investment inflows. Using these alternative specifications, sensitivity analyses are later conducted to test the obtained results.

The primary independent variable is the *cumulative number of BITs signed* by a country- varying across both time and space ( $B_{it}$ ). As discussed above, the broad homogeneity of South Asian BITs permits us to use such an aggregated variable.

The control variables that should ideally be included in the analysis (subject to availability of data) are chosen on the basis of comparable studies, though special attention is reserved for two reports identifying the determinants of FDI particularly for South Asian countries (Gould et al, 2013; Sahoo, 2006). All these variables vary across both time and space. They are succinctly summarised in Table 2.

| <i>Dependent Variable: Log of net FDI inflows</i> |                              |                                                                  |                                     |                                                                                                                                 |
|---------------------------------------------------|------------------------------|------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Control Variable</b>                           | <b>Data Source</b>           | <b>Theoretical significance</b>                                  | <b>Expected sign of coefficient</b> | <b>Notes</b>                                                                                                                    |
| Real GDP (constant 2010\$) (Y)                    | World Development Indicators | Proxy for market size                                            | (+)                                 |                                                                                                                                 |
| Per capita growth rate (g)                        | World Development Indicators | Proxy for recent economic performance                            | (+)                                 | Especially relevant for determining FDI inflows into smaller countries                                                          |
| Trade-GDP ratio (T)                               | World Development Indicators | Openness                                                         | (+)                                 |                                                                                                                                 |
| Chinn-Ito Index (CI)                              | Chinn and Ito (2006)         | Degree of capital account openness                               | (+)                                 | Has also been used by Busse et al (2010) to account for the confounding influence of unilateral capital-account liberalisation. |
| Electric Power consumption (per capita) (I)       | World Development Indicators | Proxy for Infrastructural development                            | (+)                                 | Another common proxy- internet users (per 100 people) - starts from 1990.                                                       |
| Inflation rate ( $\pi$ )                          | World Development Indicators | Proxy for macroeconomic (in)stability                            | (-)                                 |                                                                                                                                 |
| Corruption Perception Index (CPI)                 | Transparency International   | Measure of the administrative hassles faced by foreign investors | (-)                                 | Gould et al (2013) have shown that governmental corruption is an important explanatory variable for FDI in this region          |

*Table 2: Control variables*

When the pair wise correlation coefficients for the explanatory variables are calculated, it is found that trade-GDP ratio and real GDP are significantly correlated for the above sample of countries. Since an arguably superior- and more relevant- measure of financial openness is available (the Chinn-Ito index), trade-GDP ratio is dropped. Additionally, the corruption index

and the inflation rate are dropped from the estimation owing to lack of data.<sup>4</sup> Bangladesh’s inflation data is unavailable until 1986, while the corruption perception index has been calculated only onwards 1995. Since 48 BITs (out of 203 in all) had been negotiated prior to 1995, including the index would lead to a significant loss of relevant data points. Finally, a fixed effects OLS panel data model is estimated. It is assumed that there will be certain time invariant factors such as geography, culture, colonial history etc. that should vary across the panel of countries but not over time. Fixed effects estimation would meaningfully account for this observation and is hence chosen over random effects. The Hausman test is also employed to corroborate this decision.

*Fitted Regression model:*  $\ln FDI_{it} = \alpha + \beta_1 \ln Y_{it} + \beta_2 g_{it} + \beta_3 B_{it} + \beta_4 CI_{it} + \beta_5 I_{it} + \varepsilon_{it}$

## 6. RESULTS

| <i>Dependent Variable: Log of net FDI inflows</i> |                    |                       |                |                     |
|---------------------------------------------------|--------------------|-----------------------|----------------|---------------------|
| <b>Independent Variable</b>                       | <b>Coefficient</b> | <b>Standard Error</b> | <b>p-value</b> | <b>Significance</b> |
| Log Real GDP                                      | 3.949              | 0.446                 | 0.000          | Yes                 |
| Per capita growth rate                            | 0.070              | 0.042                 | 0.100          | Yes                 |
| Cumulative BITs signed                            | 0.013              | 0.009                 | 0.177          | Not significant     |
| Chinn-Ito Index                                   | 2.347              | 0.871                 | 0.008          | Yes                 |
| Per capita power consumption                      | -0.003             | 0.002                 | 0.081          | Yes (at 90%)        |
| Constant                                          | -79.961            | 10.653                | -7.51          |                     |

*Table 3: Estimates of the effect of BIT on South Asian FDI*

The results of the estimation are summarized in Table 3. The cumulative BIT variable is insignificant at the standard 95% confidence level; it moreover has a high p-value of 0.177. The p-value remains high even when the ‘cumulative BITs signed’ variable is substituted by ‘cumulative BITs in force’.

<sup>4</sup> Growth in money supply was tested, but was dropped later on conceptual grounds. Relevant data for fiscal deficit too is not available for the given time period. With regard to corruption, an alternate data source is World Bank’s Control of Corruption and Political Stability data- used in Gould et al (2013). However, it starts from 1996 and was hence not considered in the study

Importantly, the (in) significance of the BIT variable is not disturbed under certain other sensitivity analyses.<sup>5</sup> *Based on the above results, it would be safe to suggest that the bilateral investment treaties signed from 1970-2014 have not exerted a statistically significant impact on FDI inflows into the five South Asian countries studied in this paper.* Other control variables have coefficients agreeable with estimates from literature. These results are also in harmony with Gould et al (2013), in so far as openness to capital flows is seen as a major determinant of FDI into South Asia: the coefficient of the Chinn-Ito index is estimated as a high 2.35. Interestingly, the coefficient on the infrastructure proxy is small, but negative.

A discussion of these results is attempted in the following section. Moreover, we also seek to identify certain areas where improvements can be made in future research work on this topic. An analysis that looks at the impact of BITs on FDI across different sectors will be pertinent. Such a study would, however, require one to collate FDI data at a disaggregated level across all countries in the sample, which is usually difficult to find. Additionally, a viable transformation for converting negative FDI inflow data into positive values can be identified, which would help in preserving the data points lost as a result of taking log. A number of mathematical transformations were attempted in this paper but none of them succeeded in being empirically comparable to our FDI variable.<sup>6</sup>

## 7. DISCUSSION OF RESULTS

Though these findings are in sharp contrast to the conclusions of studies which show that BITs increase FDI flow to developing countries, they should not surprise any reader educated in the theoretical foundations of the BIT-FDI linkage, and is aware of the idiosyncrasies of the South Asian region. Delving on the relevant theory and other ancillary studies, three brief arguments are advanced below to provide preliminary support to the empirical results. In particular, the findings of this paper are compared and contrasted with those achieved by Gross and Trevino (2005) and Birch and Gallagher (2006) for Latin America and transition Europe, respectively.

(a) *BITs succeed in attracting investment only to particular sectors:* It has been shown that BITs are only effective in directing investments to sectors with large sunk costs, and to those which are politically sensitive to foreign ownership- for instance, utilities, real estate and mining. (Colen et al, 2014) However, most South Asian countries, especially India and Pakistan, have both covertly and overtly discouraged FDI into their capital intensive sectors (Sahoo, 2006), while East European and Latin American countries have taken a conspicuously contrarian route.

(b) *South Asia's lack of openness could not supersede any positive effect from BITs:* The South Asian region is unusually closed to cross-border financial flows- a fact evidenced by low values of the Chinn-Ito index for countries in this region. On the other hand, transition economies in Eastern Europe were swift at opening their capital accounts post the collapse of the USSR. It has been argued in literature, and especially in Gould et al (2013), that openness to financial flows is a crucial pre-condition for high levels of FDI.

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<sup>5</sup> Even with a different dependent variable- the FDI/GDP ratio- our results remain robust. In addition, including new variables in the model, or changing data sources for existing variables, had no effect on the sign/significance of the cumulative BIT variable

<sup>6</sup> We tried using the logarithmic transformation used in Spess (2005). An inordinate change in the test results led us to reject the same

In this context, the relative ‘closedness’ of SAARC economies to international capital flows could be the determining influence behind its low FDI to GDP ratios; any positive effect, if at all, from signing a BIT can be eclipsed as long as the economies do not gravitate towards higher openness.

(c) *Dynamic inconsistency concerns on part of the host government improve prospects from BITs*: South Asian countries generally enjoy a better reputation in front of foreign investors- atleast with regard to prospective expropriation of capital- in contrast to, say, countries with a communist past. Investors are particularly concerned about the presence or absence of a BIT when they suspect that their prospective investment destination’s government might expropriate their capital after having invested in that country (World Bank, 2004). Transition countries would quite naturally remain suspect for foreign investors from the capitalist world: their communist past should haunt prospective profit-seeking investors. It is perhaps for the same reason that China has grown as a leading player in the BIT revolution. For South Asian countries, however, which have often towed the IMF’s line for most of their independent histories, such a concern is not very pertinent. There have not been any cases of outright capital expropriation in this region, unlike in, say, Latin America where Argentina has been involved in a host of arbitrations. Therefore, if the primary purpose of having a BIT is not met, in so far as the host country’s credibility is high enough that foreign investors do not fear expropriation, signing a new BIT should not be expected to have a significantly positive effect on FDI inflows.

It has now been shown- both theoretically and empirically- that BITs have not, and prospectively would not, live upto their promise of stimulating FDI in the South Asian region. Though our study has looked at only Bangladesh, India, Nepal, Pakistan and Sri Lanka, we posit that these conclusions are likewise applicable to the other countries in this region owing to their broad institutional and structural similarities with the nations included in our sample.

A framework constructed by the London School of Economics for quantifying the effects of a BIT includes certain other costs and benefits accompanying BIT promulgation (Poulsen et al, 2013). It has been stated that BITs can also help investors from the developing world be secured of their investments abroad. Such a consideration is not too relevant for SAARC countries since their FDI outflows are in large part directed towards countries already having strong institutions. Another benefit of the BIT is touted to be its ‘depoliticization’ of investment disputes. In the context of strained India-UK relations post the 2012 Vodafone controversy, such an argument invites ridicule (Kathuria et al, 2016). Even with a BIT existing between the two countries, a dispute between their respective governments could not be prevented.

## **8. A MODEL FOR COOPERATION**

This paper has shown above that BITs have not increased FDI inflows into South Asian countries. On the other hand, the loss of sovereignty accompanying a BIT’s promulgation has been definitively illustrated and argued. Though it is difficult to assign a dollar value to the erosion of independent policy space, there is no doubting the fact that erosion does indeed take place since it is enshrined in the very provisions of a BIT. We have also outlined above how the other promised benefits of BITs are not readily apparent for countries in this region. In this light, we recommend a prompt reversal of BIT policy on part of all governments in South Asia. India, by revising its model BIT- now with far fewer liberal provisions for foreign investors- has already taken a firm step in this direction. Though promising, we posit that a sterner stand towards BITs can help these countries become better off. In this section, we use a Prisoner’s dilemma model to argue how a Pareto superior outcome can be achieved if South Asian

countries decide to cooperate amongst themselves by collectively shunning the BIT. Though we recognize the administrative and legal challenges that this would entail, the long term benefits from such an admittedly drastic step would make up for some of the short term hassles faced by SAARC countries. Moreover, it is high time that countries in this region acknowledge the fact that the BIT is not living up to its objective of enhancing FDI inflows.

The current situation, when most countries are using BIT as a policy instrument, is best modelled as a multi-player Prisoners’ dilemma game. It is assumed that developing economies are competing for FDI, and through BITs they hope to attract a greater proportion of investment into them. In doing so, however, they are sacrificing their sovereignty to the hands of private investors. We then consider a case where all SAARC nations shun the BIT through a mutual and binding agreement.

There can be two situations- when BITs are signed and when BITs are not signed. The host country’s purpose of signing BITs is to differentiate themselves and attract greater FDI. With time, competition among developing economies has become so fierce that they are providing ever more liberal provisions to foreign investors, notwithstanding the immense sovereignty cost accompanying stronger protection clauses. As we have elaborated before, the penalties imposed on developing countries, when they are awarded an unfavourable verdict under ISDS, adds to the monetary losses associated with BITs.

When no BITs are signed, the FDI function is written as:

$FDI_i = F(a)$ , where  $a$  is a vector signifying a country’s real investment potential.

When BITs are signed, the country becomes more attractive to investors relative to other countries. Thus, the function changes and now becomes:

$FDI_i = D(a)$ , where  $D(v) > F(v)$  for all values of vector  $v$ .

For simplification, we assume a two-country world and all other factors, apart from initial infrastructure, to be the same in both the countries. Then the following game models this situation:

|         | No BITs                     | BITs                          |
|---------|-----------------------------|-------------------------------|
| No BITs | $F(a_1), F(a_2)$            | $F(a_1)-c_1,$<br>$D(a_2)+b$   |
| BITs    | $D(a_1)+b,$<br>$F(a_2)-c_2$ | $D(a_1)-c_3,$<br>$D(a_2)-c_3$ |

The payoff matrix is explained as follows: When no country signs a BIT, then their payoffs are determined by their initial conditions. If only one country signs a BIT, then it succeeds in diverting additional investment into it. The positive effect of this change is partly negated by the sovereignty loss which occurs as a result of the BIT. The non-BIT signing country loses some investment due to diversion away from it, captured by the ‘ $-c_i$ ’ term in the matrix. Finally, if both countries sign a BIT there is no differentiation. Though the functions change because now the credibility of the host country is better established, there nonetheless result sovereignty losses.

When the following assumptions hold, the situation becomes a game of Prisoners' dilemma:

- $F(a_i) > D(a_i) - c_3$  : The benefit to country  $i$  from both the countries not signing a BIT exceeds the benefit to country  $i$  from both countries signing a BIT. This assumption makes sense intuitively. When there are only two countries, investors have to invest in either of them. When both the countries sign BITs, there is no differentiation. Hence, there is only additional cost involved.
- $D(a_1) + b > F(a_1)$  i.e. the BIT- when only one country signs it- is profitable to the signatory country
- Moreover, it is assumed that  $c_3 < c_1, c_2$

Here, we see that the dominant strategy of each player is to sign a BIT:

- 1) When country  $j$  does not sign a BIT, it is better for country  $i$  to sign a BIT.
- 2) When country  $j$  signs a BIT, it is better for country  $i$  to sign a BIT.

Therefore, both the countries end up signing a BIT and in their race to the bottom, end up with an outcome which is pareto inferior to the outcome in which both countries do not sign BITs. For purposes of simplification, we can also represent the above situation as the following, where co-operation denotes choosing to not sign BITs and defection denotes signing a BIT to attract FDI:

|           | Cooperate | Defect |
|-----------|-----------|--------|
| Cooperate | 1, 1      | -1, 2  |
| Defect    | 2, -1     | 0, 0   |

The cooperative outcome can be achieved if provisions for a binding agreement that precludes each player from signing BITs are made among the 2 countries. Then each will have to bear a marginal cost of implementing the agreement,  $e$ , where  $e < 1$ . The implementation cost can be understood as the one covering administrative expenses of implementing the agreement such as overseeing that no country has signed a BIT. The game is illustrated below as a two stage game:

Stage I: There are two options- either agreeing to the agreement or not. If all countries favour such an agreement, then the game ends and the individual payoffs are  $(1-e)$ . If one member state declines to accept the above agreement, then the countries enter the second stage of the game.

Stage II: Assuming there is no agreement in Stage I, the countries have to decide whether to sign BITs (i.e. co-operate) or not (i.e. defect). As we have shown before in the Prisoners' dilemma setting, defecting i.e. continuing to sign BITs is a dominant strategy, and the countries will be expected to maintain the status quo.

We find a solution of the above two-stage game through backward induction and conclude that accepting this agreement on part of all member states is indeed the only sub game perfect Nash



equilibrium of the game (refer to appendix for the game tree). In a dynamic setting, this game is repeated infinitely many times, where at each point a country decides whether to adhere to the agreement or not. If one country chooses to defect from its promise to abide, the others shall also defect in the following round and resume their BIT negotiations- making everyone worse off. This threat of tit for tat behaviour on part of the other player prevents the first player from defecting in any round. Hence, it is optimal for each country to abide by the agreement in each period, and for all periods. However, the conclusion of such an agreement requires one of the players i.e. countries, to take the initiative, much like the first mover in the Stackleberg game. In other words, the commitment to not sign a BIT and put forth the proposal of an agreement requires leadership and commitment from at least one player at the outset.

This rudimentary two-player game can be easily extended to an n-player game without changing the results. There are, however, several practical limitations to the execution of this agreement in a global context. Developing countries are scattered across the globe, while Olson (2009) has also shown that cooperation is possible only in small groups. Further, models in Spatial Prisoners' Dilemma point to a higher probability of cooperation when the players are situated close to each other.

We argue that even when only SAARC nations co-operate and enter into a binding agreement to not sign BITs, irrespective of the behaviour of other developing economies, SAARC countries attain a pareto superior outcome compared to the status quo because:

- Firstly, Oman (2000) has shown that most incentive based competition involves governments of neighbouring countries- a requirement which South Asian countries abide by.
- Secondly, it has been proved by Escaith and Paunovic (2003) that investors first choose the region they wish to invest in, followed by the eventual destination of the investment.

We thus propose that South Asia must fight for investment as a block and not fight amongst itself for FDI, hence leading to a higher pool of long-term foreign capital for all its countries. Importantly, if South Asian countries choose to cooperate as outlined above; their FDI inflows will be conditional on their real investment potential. Since countries are not eying one big investment, but rather a host of investments, it isn't the case that only one country from this region will get all the FDI. However, a somewhat equal distribution of FDI is only obtained when nations increase their spending on infrastructure development. From a political economy perspective, incurring such a cost is better for the long-term future of the economy, vis-a-vis the loss of sovereignty inflicted at the hands of profit-seeking investors. Therefore, we recommend that South Asian economies must not indulge in a race to sign BITs, but pursue structural reforms that will increase their potential to attract FDI. Through signing this binding agreement, SAARC countries would commit to co-operation in context of their BIT policies. Such a cooperative atmosphere also promises to be conducive for increased trade between South Asian countries in the near future.

## 9. CONCLUSION

This paper used a panel data analysis to show that the BITs concluded by South Asian countries between 1970 and 2014 have not led to an increase in FDI inflows into their territories. On the other hand, BITs have led to an erosion of the policy space available to SAARC governments by making even pro-public policies suspect to arbitration claims. Given the absence of any

evidence supporting the BIT’s proposed benefits, in conjunction with plenty affirming its significant costs, we recommend that cooperation between South Asian countries- by means of collectively shunning the BIT as a policy instrument- leads to a Pareto improving outcome; it is also shown to be a stable Nash equilibrium.

## APPENDIX

| Variable   |         | Mean     | Std. Dev. | Min       | Max      | Observations |
|------------|---------|----------|-----------|-----------|----------|--------------|
| lnfdi      | overall | 18.18098 | 3.091417  | 6.907755  | 24.49387 | N = 192      |
|            | between |          | 2.169403  | 15.11774  | 20.86748 | n = 5        |
|            | within  |          | 2.502908  | 7.365595  | 22.69103 | T-bar = 38.4 |
| lngdp      | overall | 24.68325 | 1.56506   | 21.94502  | 28.41976 | N = 225      |
|            | between |          | 1.604271  | 22.73861  | 27.06967 | n = 5        |
|            | within  |          | .617471   | 23.62108  | 26.03333 | T = 45       |
| pcygrowth  | overall | 2.649569 | 2.92547   | -15.45171 | 8.75497  | N = 225      |
|            | between |          | .8564067  | 1.968245  | 3.672009 | n = 5        |
|            | within  |          | 2.822943  | -14.78769 | 8.906549 | T = 45       |
| openness   | overall | .182685  | .1257919  | 0         | .6969896 | N = 219      |
|            | between |          | .0733292  | .1099129  | .3048579 | n = 5        |
|            | within  |          | .1073574  | -.1221729 | .5748167 | T-bar = 43.8 |
| bitssigned | overall | 15.61778 | 19.77701  | 0         | 84       | N = 225      |
|            | between |          | 8.688795  | 2.422222  | 24.66667 | n = 5        |
|            | within  |          | 18.17868  | -9.048889 | 74.95111 | T = 45       |
| power      | overall | 194.9077 | 167.9422  | 5.802544  | 765.0034 | N = 215      |
|            | between |          | 122.6315  | 45.78494  | 325.2148 | n = 5        |
|            | within  |          | 126.9551  | -32.31643 | 634.6964 | T = 43       |

Table 1: Description of the data

|                                   |                  |                                   |       |                   |                      |
|-----------------------------------|------------------|-----------------------------------|-------|-------------------|----------------------|
| Fixed-effects (within) regression |                  | Number of obs                     | =     | 182               |                      |
| Group variable: id                |                  | Number of groups                  | =     | 5                 |                      |
| R-sq:                             | within = 0.7863  | Obs per group: min                | =     | 27                |                      |
|                                   | between = 0.8863 | avg                               | =     | 36.4              |                      |
|                                   | overall = 0.6131 | max                               | =     | 42                |                      |
|                                   |                  | F(5,172)                          | =     | 126.61            |                      |
| corr(u_i, Xb) = -0.9090           |                  | Prob > F                          | =     | 0.0000            |                      |
|                                   |                  |                                   |       |                   |                      |
| lnfdi                             | Coef.            | Std. Err.                         | t     | P> t              | [95% Conf. Interval] |
| lngdp                             | 3.949464         | .4462596                          | 8.85  | 0.000             | 3.068614 4.830315    |
| pcygrowth                         | .0701093         | .0424147                          | 1.65  | 0.100             | -.0136111 .1538298   |
| openness                          | 2.347083         | .8713796                          | 2.69  | 0.008             | .6271088 4.067058    |
| bitssigned                        | .0131977         | .0097375                          | 1.36  | 0.177             | -.0060227 .0324181   |
| power                             | -.003898         | .0022205                          | -1.76 | 0.081             | -.0082809 .0004849   |
| _cons                             | -79.96129        | 10.65321                          | -7.51 | 0.000             | -100.9891 -58.93343  |
|                                   |                  |                                   |       |                   |                      |
| sigma_u                           | 4.1754889        |                                   |       |                   |                      |
| sigma_e                           | 1.1608222        |                                   |       |                   |                      |
| rho                               | .92825617        | (fraction of variance due to u_i) |       |                   |                      |
|                                   |                  |                                   |       |                   |                      |
| F test that all u_i=0:            |                  | F(4, 172) =                       | 18.05 | Prob > F = 0.0000 |                      |

Table 2: Results from fixed-effects estimation

| Coefficients          |          |          |           |          |
|-----------------------|----------|----------|-----------|----------|
|                       | (b)      | (B)      | (b-B)     |          |
| > sqrt(diag(V_b-V_B)) | fixed    | random   | Differen  |          |
| > ce                  |          |          |           |          |
| > S.E.                |          |          |           |          |
| > lngdp               | 3.949464 | .8326066 | 3.1168    |          |
| > 58                  |          |          |           |          |
| > .4322034            |          |          |           |          |
| > pcygrowth           | .0701093 | .0651492 | .00496    |          |
| > 02                  |          |          |           |          |
| openness              | 2.347083 | 3.494613 | -1.14753  | .        |
| bitssigned            | .0131977 | .03158   | -.0183823 | .00125   |
| power                 | -.003898 | .005554  | -.009452  | .0016577 |

b = consistent under Ho and Ha; obtained from xtreg  
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
= 22.62  
Prob>chi2 = 0.0004  
(V\_b-V\_B is not positive definite)

Table 3: Results from Hausman Test

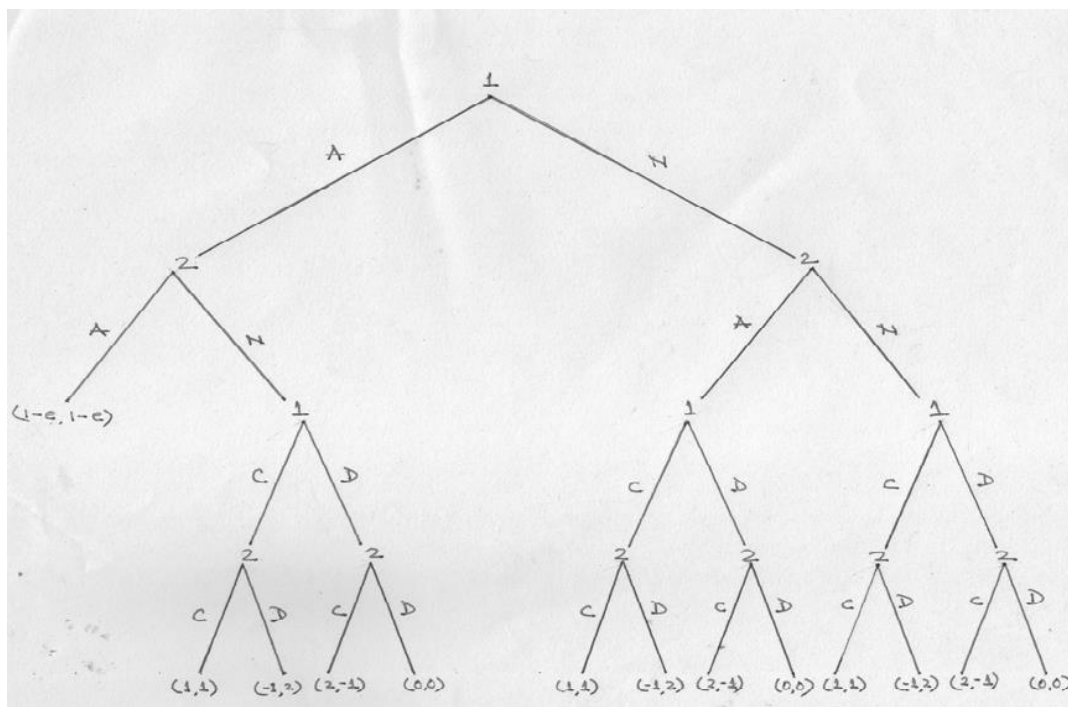


Diagram 1: Game Tree

|          |                                                                            |
|----------|----------------------------------------------------------------------------|
| Action A | Player consents to the binding agreement                                   |
| Action N | Player does not consent to the binding agreement                           |
| Action C | Player co-operates or does not sign BITs in absence of a binding agreement |
| Action D | Player defects or does not sign BITs in absence of a binding contract      |

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## PROMOTING UNIVERSITY'S INNOVATION THROUGH INTELLECTUAL PROPERTY RIGHTS: A MALAYSIAN PERSPECTIVE

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### ABSTRACT

*Innovation is inevitably important to elevate the nation's economic growth. For this reason, Malaysian government is committed to undertake various initiatives to significantly encourage and improve innovation activities towards achieving a high income nation. In conformity with the government agenda, university has always been recognised as a core to provide for new innovative development. It is very important for university to set their target to be considered as a highly creative and innovative university. Although many efforts have been put forward to encourage for promoting innovation, nevertheless there are some aspects which are not fully utilised especially on the role of intellectual property rights towards innovation in the university context.*

*Thus, the purpose of this paper is to examine to what extent that intellectual property rights play in promoting innovation and what challenges face by the university in promoting their innovation through intellectual property rights. For the purpose of the study, interviews were conducted with seven academics researchers who have developed their innovation in terms of viable research products.*

*This study identified that intellectual property rights play significant role in promoting innovation for the university. Nevertheless, it was also found that intellectual property rights provide challenges for university to foster its innovation. Findings of this study can be used as a guidance for academic researchers to strategically plan for a dynamic and successful innovative development in the university.*

*These findings are also valuable for policy makers in the university and government to promote innovative development for Malaysia as a whole.*

**Keywords:** *innovation, intellectual property rights, research products, university*

### 1. INTRODUCTION

Innovation has increasingly become an important agenda for the country to focus to be competitive and innovative. Although there is no single definition adopted by scholar so far, generally scholars agree that innovation refers to a process of transforming new ideas, knowledge, processes, products or services into a competitive advantage made by the organisations (Pino, Falzensztejn, Zwerg-Villegas, and Arias-Bolzman, 2016; Shqipe, 2013; Kalay, 2015, Klaus-Peter, 2008). The Manual of OECD defines innovation as 'the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations' (OECD, 2005, at p.46). Rather than referring to the technological innovation *per se*, etymologically, the concept of innovation should be treated in a more broader sense (Godin, 2008). However the concept is admitted to be a complex phenomenon (Pereira, and Ramero, 2013; OECD, 2015) and is attributed to numerous factors such as research and development (R&D) expenditure, technological advancement and organisation's capabilities (Dievernich and Tokarski, 2013). Thus, many companies now are recognising the interactive nature of innovation processes and the importance of non-technological activities to be implemented in their organisations (Mothe and Nguyen-Thi,

2012). Innovation according to Schumpeter is considered as a key element in economic cycles, which he described as 'creative destruction' (Schumpeter, 2003). In order to balance the availability of resources and to promote the creative society, the 'destruction' which has been referred by Schumpeter is needed for organisations, including the university context. For entrepreneurs, innovation is a mean in which they could transfer and exploit opportunity in developing their business (Drucker, 1985). In management, there are at least two types of innovation, technological and non-technological innovation. Technological innovation concerns when newly improved or introduced products are ready for entering the market, which enable the organisations to enhance their competitive advantage (Mannan, 2015); whilst non-technological concerns of an element of organisational innovative activities which directly gives positive impact to the management system of the organisation (Pereira, and Ramero, 2013; Mothe and Nguyen-Thi, 2012, Pino, Falzensztejn, Zwerg-Villegas, and Arias-Bolzman, 2016). In the university context, innovation involves creating and exploiting new ideas, concept, or transforming ideas into new knowledge or new research products to enhance its competitive advantage. There are many reasons why innovation is important in the university, such as, to strategically form a smart partnership with industry, to increase the productivity and to provide a solution to social problem. However, admitting the complex nature and multiple players in innovation, it is expected to become even more complex when it interfaces with intellectual property rights (IPRs). In order to improve and encourage for innovation in Malaysia, it has been made seriously through the implementation of the innovation policy. Under the Tenth Malaysia Plan (2011-2015), in order to strengthen the eco-system for innovation, greater investment in the R&D, commercialisation and innovation have been put forward by the government. This has been implemented by providing a conducive environment for innovation activities, providing some incentives for innovation activities, strengthening the intellectual property (IP) system and providing some fundings for R&D and commercialisation. Further, in the Eleventh Malaysia Plan (2016-2020) in order to increase the rate of innovation, commercialisation and R&D activities, a new approach will be adopted specifically to accommodate the weak innovation eco-system. R&D and innovations play a major role in the scientific endeavours particularly in the university. Recognising this potential, some of the research universities in Malaysia have been considered as pioneer and catalyst in promoting their research products to enter the market successfully (Ramli et al., 2013). This situation has created an opportunity for the university to create their own income (Ramli et al., 2013; Howitt, 2013; Han and Heshmati, 2013). For various reasons, universities now undergo major transformation to become competitive, some address this as an 'entrepreneurial university' status (Ramli et al., 2013; Karlsson, 2004; D'Este and Perkmann, 2011) and to some extent leaving some of their traditional functions of teaching and learning at jeopardy (Granstrand, 2003). In the United States for example, the introduction of the Bayh-Dole-Act 1980 (which was followed later by other universities around the world) has marked the importance step for universities to patent their inventions under federally funded research. Therefore, some of the universities have seen this transformation to become the top leading and most competitive universities (Rosenberg and Nelson, 1994). However, this might be against the traditional IP regime in universities for being oriented around science and open publications from research result, as compared to IP in industry for being more oriented around technology, secrecy, patents and other registered IPRs (Granstrand, 2003).

IP plays significant role in the global economy over the past decades (Aplin and Davis, 2013). In recognising the function that IP could play in promoting economic growth of the country, Malaysia has established the National Intellectual Property Policy in 2007. This policy was introduced with the aim to emphasise on the national IP through the commercial exploitation

of the IP. Thus, many industries, including university have set their strategies in enhancing their creations for IP protection. In 2009, the Ministry of Science, Technology and Innovation (MOSTI) has also introduced the Intellectual Property Commercialisation Policy for R&D funded by the Malaysian government. The main aim of this policy is to establish a common framework to regulate the ownership and management of IP from the creation, protection, innovation, exploitation, and technology transfer conducted using funding from the government. This policy generally provides that the recipient of the government R&D is the owner of the IP resulting from the research. These policies are important to enhance and encourage in promoting innovative development and productivity in the university (Ab Aziz et al., 2011). The full disposition of controlling intellectual property provides a room for research institutions in promoting their commercialisation and innovation activities (Azmi, 2014). Thus, since university creates and produces a lot of innovation through R&D, the role of IP is significantly crucial. However, tensions arise between innovation and IP. The question is, to what extent that IPRs could play their role in promoting or hindering innovation? In tackling the clashes, there is a need to understand the function of IP and rationale why IPRs were introduced. However, it is admitted that sometimes the actual role of IPRs and innovation is hard to ascertain (Granstrand, 2003,). The main purpose for the introduction of IPRS is to reward for innovative and creative efforts (US Council for International Business, 1985). Intellectual property right (IPR) is expected to encourage innovation by giving certain incentives or rewards to the right owner such as inventor or the creator to exploit his own creation for a certain period of time. There are at least three justifications for IPRs (for example, Torremans, 2013; Cornish and Llewelyn, 2013; Bently and Sherman, 2014; MacQueen, Waelde, Laurie, and Brown, 2010; Norman, 2004) as follow; (a) individual who creates has the right to possess their intellectual creations. He has the exclusive rights to prohibit the third parties from using his creation without his permission for the time and resources which he has invested; (b) other person are not permitted to reap the fruit of the intellectual creation except the right creator or inventor; (c) the creator or inventor should entitle to enjoy incentive for his creative and innovative activity, without which the creator or inventor would unable to reap the fruits of his creative endeavours. Despite these rationales for IP, there is no guarantee that to what extent IP (particularly patent) promotes innovation (Peritz, 2011). In case of patent paradox, firms may ignore their unimportant patents (Mansfield, 1986; Granstrand, 2003), and many patents ‘act as vanity art to decorate walls of inventors’ (Castle, et al., 2010, at p.44). Although patent aims to promote the progress of the technology however, it is still complicated on its impact on scientific research (Lee, 2015). Thus, many organisations including university avert the opportunity to create and exploit the value of IP from the innovative ideas. Thus, the purpose of this paper is to discuss what role that IPRs could play in promoting innovation in the university and to what extent that IPRs provide a challenge for promoting innovation in the university.

## 2. METHODOLOGY

This paper adopted a qualitative research using semi-structured interview questions. Eight academic researchers have been purposely selected for the interview. They were chosen based on these criteria; (i) different technical and scientific background; (ii) extensive experience in innovating research products; (iii) experience in intellectual property rights; (iv) extensive experience working with the industry; (v) represent the Malaysian public university. For the purpose of anonymity, the eight interviewees are identified as CP, TO, BH, RM, SY, MD, and LA.

The face-to-face semi-structured interview questions were developed based on the structure designed by Patton (2002). For each interview, the session was lasted approximately 1 to 1 ½



hour. The interviews were recorded and were transcribed verbatim. All data from the data were analysed based on axial coding.

The qualitative research questions were adopted in order to answer the following research questions:

- What role that intellectual property could play in promoting university's innovation;
- To what extent that intellectual property may become a challenge for promoting university's innovation.

### 3. FINDINGS AND RECOMMENDATIONS

The function of IPRS is increasing importance especially for innovative university (Candelin-Palmqvist, Sandberg and Mylly, 2012). IPRs deal with securing and enforcing the rights of the owner, or the creator of the innovative products. The owner or the creator has the right to exploit his own creation for a specific period of time. The issue of ownership, particularly patent ownership between employee and employer becomes critical in the university. Generally, any works done under the contract of employment shall be deemed to accrue to the employer, save in the absence of any provision to the contrary (Section 20 of Malaysia Patent Act 1983). However, the following proviso stated that in the case that the invention acquires economic value greater than the parties could reasonably foresee at the time of concluding the contract of employment, the inventor shall be deemed to be entitled to equitable remuneration (Section 20(1) of Malaysia Patent Act 1983). The invention is deemed to accrue to the employer where the employee invents in the fields of activities of his employer by using data or means placed at his disposal by his employer (Section 20(2) of the Malaysia Patent Act 1983).

Some academic researchers are cognizance to the IP policy relatively well, that although university might own the invention as employer, nevertheless, academic researchers will be equitably rewarded. This was agreed by interviewee CP *'we have IP policy applied by our university. This policy is to assist the protection and exploitation of IP created by the university. Generally speaking, under [the university] IP policy on ownership, university owns inventions made by its employees when those inventions are developed by a sponsored research agreement or using significant funds'*. Similarly, interviewee TO said that *'basically we are covered by few policies. The first policy is IP policy. That covers from research output, how to get research output patented until it reaches commercialisation stage. And then, there is another policy called commercialisation policy. That is the two main policies that we are having here'*. Basically, few policy and regulations for IP, R&D and commercialisation were adopted by many universities in Malaysia. Although all IP policies are adopted and put in their proper place, however, the critical issue is understanding and implementing those policies. There is always a stigma among academic researchers that they will get nothing upon their creations when the ownership has been transferred to the university. This situation, to a certain extent will diminish their innovation level.

However, academic researchers should remember that they will be equitably rewarded as evidenced from interviewee RM in which he stated that *'there are some advantages for researchers, through incentive or rewards, which have been provided by the university to pay back the staff who has involved in innovative and has reaching the commercialisation stage. Some of the universities have considered innovative products created by researchers as a way for their promotion'*. The fallacy of the 'ownership' concept need to be changed, but in fact it should be considered as a mean for promoting innovative research products in the university through the protection accorded by IPRs. Furthermore, since university has provided all facilities and the sources of funding, then it was 'unethical' to claim as stated by interviewee SY

*'we cannot simply commercialise it by our own because all the research products under the research grants are university's property, owned by the university. It was not ethical'.*

Generally, university will provide some opportunity to encourage for innovativeness among academic researchers. This was commented by interviewee RM *'research management centre (RMC) will try hard to ensure all needs and interest of researchers are met. I see their effort to protect and preserve the interdependence, values and interests of the university's research community. To me RMC really helps me along the way in commercialising my invention. This is because whatever happens, your invention will still belong to the university. So they [RMC] will always help you'.* In avoiding the clashes and preserving the interest of the university and academic researchers, a clear right of ownership should be made at the beginning of the research agreement, to avoid future collision between both parties.

In order to encourage and reward for innovation and creative activity in Malaysia, IP policy has provided a general guideline for income distribution. This sharing revenues and other income generated from commercial exploitation of the IPRs. The recipient particularly university in arriving at the relevant figure will deduct all reasonable expenses to divide such net revenues between recipient and inventor. The IP and Commercialisation Policy from MOSTI has provided a guideline for university to follow for income and revenue distribution, as shown in Table 1 below.

|    | Disbursable amount                    | Inventors | Recipient |
|----|---------------------------------------|-----------|-----------|
| 1. | First RM250,000.00                    | 100%      | 0%        |
| 2. | Next RM250,001.00 to RM1,000,000.00   | 80%       | 20%       |
| 3. | Next RM1,000,001.00 to RM2,500,000.00 | 60%       | 40%       |
| 4. | Next RM2,500,001.00 to RM5,000,000.00 | 50%       | 50%       |
| 5. | RM5,000,001 and above                 | 40%       | 60%       |

Table 1: Distribution Guideline, source, MOSTI

In recognition of creative idea generation and innovative research, the government will provide incentive schemes for inventors. The general guideline for the incentive is shown in the Table 2 below.

|    |                              |             |
|----|------------------------------|-------------|
| 1. | Upon disclosure of invention | RM500.00    |
| 2. | Upon filing of patent        | RM5,000.00  |
| 3. | Upon grant of patent         | RM10,000.00 |

Table 2: Payment of the Incentives: source, MOSTI

Most of the universities in Malaysia have adopted guideline provided by the MOSTI for income distribution to reward creative idea and innovative research. However, there is always a skeptical among academic researchers of the income distribution, as claimed by interviewee BH *'sometimes the researchers, they always suspicious of the university. I think it is a culture. Probably not only in our university, but other university too. For example they want to start up the company, they will said, I don't want 30% but I want 60%. Because this is my idea. In our university, 70% of spin-off company is belong to the university, 30 % will go to the researcher. I will always need to convince them [the researchers] that is the policy adopted by our university. I will said to them that you will start first with 30%, and the university is 70% and if your company is doing good, you can negotiate with the university'.* He further added that sometimes an increment will be given as an incentive for academic researchers. On the same

vein, interviewee TO also mentioned that *'when we talked about innovative products and commercialisation, we relate to the profit. I will not mention the figure, but the big portion of the profit will return to the researcher. The university is only taking a very small portion. IP is belong to the university, but you are the inventor of the commercial product. You have the right to get the profit. I think this is big encouragement. I don't know how other university divide the ratio of the profit, but ours are so big. They score a higher performance index. That was also a good point. But I think the most good point is the return. I would say again, nearly all of the return will go to the researcher, not the university'*.

The income distribution is available for the university to adopt in order to enhance their creative ideas and innovative research. There is always a room for an improvement and negotiation between university and researchers to deliberate on the distribution. However, there is always a challenge for university to convince the academic researchers, which very likely to hamper the innovative development in the university. Furthermore, as observed by interviewee MD that *'some industry people they do not prefer to collaborate with academic researcher due to the cost of IP application; university imposed a very high royalties and at the end will give minimum return to the business partner.'*

The complexity of the innovation is burdened by multifaceted nature of IPRs in terms of its subject matter and its requirements for protection. This is a challenge for academic researchers who are mostly from engineering and technological areas in identifying the right IPRs, and securing and exploiting IPRs for their innovative research. Interviewee TO said that *'among IP applications from our university, the number highest is copyright, but in terms of IP that successfully commercialise is patent'*. This was also agreed by interviewee BH *'researchers only get the patent, and then they just leave to the Technology Transfer Office (TTO) and ask to commercialise their innovative products. This is wrong. TTO is just to assist you. But the mentality of the researchers is when they get the patent, they already think that their research products are so good. But when it did not work, they put the blame to TTO. TTO have to bear all the consequences'*. Academic researchers should equip themselves with necessary information related to IP and how they should secure and exploit their IPRs. This responsibility should be fairly shared with the RMC or TTO, for not only manage to create a conducive environment but also manage to produce a highly innovative research products.

Thus, once innovative products have been created, academic researchers need to identify the most appropriate form of IPRs for their products. This was practiced by interviewee RM where he said that *'from the start, I know my product needs to be protected by IP. It is well known that producing innovative products until its reach commercialisation stage is not an easy task. One important lesson I learnt is to ensure that each patent file originated from a great and novel idea'*. It should be made clear that patent is not the only weapon for academic researchers to secure and exploit their innovative creations. Although patent may pre-occupy research funding agencies and government, nonetheless, its value is still disputed and attracted controversy (Castle, et al., 2010). There are various avenues for academic researchers, they may want to secure their information through confidentiality clauses, either via contractual agreement, non-disclosure agreement or research contract which limit the disclosure of any confidential information or any know-how information of their research information. By limiting themselves with the protection accorded by IPRs, they might miss the opportunity to secure and exploit the right IPRs which will later affected their innovative capabilities.

Admitting the complex nature of IP application process, interviewee BH stated that *'I would say that process of IP application is not easy. We need to explain to the researcher how actually the process is. It is something that beyond our control. There were at a time when a lot of applications sent by researchers. Most products applied for IP comes from IT (information technology) and environment. You know how rapid is when we talked about IP product'. Due to this complex process RMC should play its significant role. This was shared by interviewee CP 'usually researchers are worried that the commercialisation will limit their opportunity to publish or present at conference. So we at RMC will always help them to clarify this. Once IP is protected, you can publish your research and can talk about it freely. But in circumstances where the idea is not protected, they may be required to keep the work confidential. In all cases, the RMC representative will seek to develop the best strategy that meets the needs of that project'. However, the struggle of certain universities in Malaysia, especially newly developed university, is a problem to fully anticipate the function of RMC/ or TTO and IP related matters.*

Understanding of the IPRs and IP policy is a challenging task especially for engineers, technologist and scientists, since these documents were prepared by legal drafters. Most of the interviewees admitted that they have the difficulty in understanding IP and IP policy. Interviewee BH stated that before he was appointed as the director of RMC, he could not give any important meaning for IP and IP policy. He emphasised that *'before I entered into RMC, I know only a little but not to the point to know what are the policies (IP policy), or whatever. I do not know about that. It is not required for us to know, and yet we are too busy to give lecture. Before I joined RMC, I don't have any product to be commercialised. So I do not bother about IP policy as such. The thing is not important at all'. Most interestingly he shared, even there are many initiatives and programs made by the university to encourage for a clearer understanding of IP and commercialisation of their innovative research products, not many are really interested to focus. Interviewee BH added that 'for example when we do a seminar at the engineering faculty, we talk about spin-off company, and how you can form a spin-off company. We want to give a talk to the whole engineering faculty. Do you know how many of them turned up? We were given them a sufficient notice and advertisement about the programs, but only three people came. So basically you cannot force. Some of them only sent their students as their representatives.*

*That is the challenge. So to be honest with you, when we want to educate people, but if they do not really have the intention to learn, it is nothing we can do'.*

Since the wording of the IP policy is written in a legal terms, it is perplexing those who are not from the areas. Interviewee BH claimed that *'understanding IP policy is a challenge one, not only to me but also to other researchers. This is because the policy is always written by lawyers. The language is not straightforward. I do not like reading that, and sometimes I asked somebody read for me and explain to me'. Similarly, interviewee RM also stated that 'it was at the time where IP policy was only circulated through email in discussing briefly what the policy and IP are. But I just could not care less at all about the meaning.'* However, he further stated that researcher should make themselves well informed, as he claimed that *'but now, I am aware from my experiences that I have patented the product. Since we are in research university, we should be aware about this IP policy and IP related matters'.* This is not the matter from TTO alone to do it, as interviewee BH explained that *'it might be the role of TTO but the thing is even TTO do not really understand of that because they do not have legal people at that time'.* On a similar note, interviewee TO commented that *'I think in our university there was only two policies were implemented. I do not think that researchers are concerned about the policy because everything they still refer to us and ask us so many times. In fact we have told them*

*many times already*'. Lack of understanding about IP and IP policy is due to lack of expert in IP related matters assigned at the RMC or TTO offices. This was agreed by interviewee LH that *'the RMC is also not ready. There is no clear guideline or SOP (Standard Operating Procedures) on how to contribute to commercialise research product. We just a researcher. We need a help from someone that can assist in drafting the patents application and copyrights. We also do not know how to find industry. Hence, I ended up with unpatented products and cannot commercialise the research product to industry'*. Equally, this was also agreed by interviewee LA *'even though there is TTO in the university and they are expert in legal documents, but we still need a lot of helps [...] in term of negotiation and many more'*. However, it is interestingly to note that some universities have adopted and applied the IP management unit, as interviewee CP said that *'the selected research products with high potential will be channelled to various available pre-commercialisation funds to further develop the products to the market ready level. These research products will then be protected under IP. The IP Management Unit will assist in the IP application process, auditing and licensing agreement'*. Perhaps, other universities may follow the lead of adopting and developing the IP management Unit to specifically undertake any IP related issues to ensure the full capability of innovative products will be exploited securely through IPRs. The team of experts should be assigned especially in handling IP application process and IP related issues. Even there was a pro-active action has been taken by certain university, for example as interviewee TO shared that *'we have patent manager in our university. He was very expert, because he was a patent agent before he joined the university. I would say that they are very expert in the area'*.

#### 4. CONCLUSION

The generation of new knowledge especially in the university constitutes a major investment in innovation, which might be affected by IP system. In conformity with the innovation policy, many universities in Malaysia have adopted IP policy especially relevant to govern the protection and exploitation of their inventions and scientific creations.

There is always a tension between innovation and IP which might affect the innovative activities in the university. Therefore, university should adopt a clear policy in matching between innovation and IPRs in order to promote a more innovative society in line with the national agenda.

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## USING ACTOR-NETWORK THEORY TO ANALYZE THE USAGE OF MYEHALAL SYSTEM: A CONCEPTUAL FRAMEWORK

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### ABSTRACT

*In response to the government initiatives for e-government, JAKIM has introduced the e-application system, namely the MYeHalal to facilitate, expedite and streamline applications for halal certification. However, there has been resistance to use the system, as it is complicated and not user-friendly. Due to the necessity to have the halal certificate, there has been a tendency among some applicants resort to hiring consultants to help them apply the halal certificate online. Rather than facilitating the process of applying halal certificate, the online application seem to slow down the progress of their business, which gives impact to growth of the halal industry. Hence, there is an need to have a nuanced understanding of the factors that facilitate the use MYeHalal to suggest ways to facilitate the use of the online system. This paper initiates a discussion of this issue by proposing a conceptual model framed by Actor-Network Theory (ANT) to understand the interplay between the social and the technical actors in the application process using MYeHalal system. It is anticipated that this framework serves as a platform to enhance the use of MYeHalal that facilitates an efficient and fast application of halal certificate online.*

**Keywords:** Actor-Network Theory, MYeHalal System, Usage

### 1. INTRODUCTION

Consistent with the growth and increased usage of Information and Communication Technologies (ICT), most developed countries have taken steps to adopt e-government with the emphasis on ICT infrastructure (Van Deursen, et al, 2006; Folstad, 2008; Axelsson & Lindgren, 2010). Government worldwide has implemented various measures to adopt e-government services for the purpose of improving the service delivery system that is efficient, innovative and quality. Scholars (Carolyne, 2006; Jon, 2008; Ali, 2012) claim that e-government is a global innovation effort to achieve a better management and efficiency of government's functions through the use of ICT, especially in the developing countries. Malaysia has also taken the initiative to adopt ICT in the public sector with the aim to improve the quality of public service, to reduce cost of operation and to strengthen the relationship between government, its citizens and businesses (Razlini, 2012). Malaysia establishes a comprehensive platform for online services, and it has been implemented in many services. With the help of ICT expertise from Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), the



Department of Islamic Development Malaysia (JAKIM) as one of the government service has responded to this challenge. One of JAKIM's ICT initiatives is the adoption of online applications for halal certification (Department of Islamic Development Malaysia (JAKIM), 2011). As part of the efforts, online halal certification application has been developed to accommodate halal applicant in applying for halal certificate. This initiative is a response to the Government's objectives stated in the Third Industrial Master Plan (IMP3), 2006-2020 (Chapter 21) and 11<sup>th</sup> Malaysia Plan (RMK-11) (Chapter 8 and 18) aiming for Malaysia to become the global halal hub for the production and trade in halal goods and services.

### **1.1. The Halal Food Industry in Malaysia**

Muslim population has been increasing at 1.84% from 2013. It has been reported that the Muslim population was 2.04 billion in 2013 and 2.08 billion in 2014 (<http://www.muslimpopulation.com/World/>), and it is expected to reach more than 2 billion by the year 2030 (The Japan Times News, 2013). Consistent with the rapid growth of Muslim population, the halal food market is currently worth USD 650 billion and is set to grow by 35% over the next 20 years (Farouk, 2013). According to a recent report, published by the World Halal Forum, global trade in halal food and beverages is currently estimated to be worth around ca. USD 1.4 trillion annually (Farouk, 2013). With Islam now considered to be the second largest religion, and the fastest growing, Muslims are soon expected to represent the largest share of global consumer spending.

The world has recognized Malaysia as the major player in the global halal industry with halal eco-system of regular business and the quality of Malaysia's halal certification. The statistics from the Halal Development Corporation (HDC) indicate that the global market for halal products has reached US \$ 2.77 trillion per year, while Malaysia exported RM37.7 billion halal products abroad in 2014 compared with RM32.8 billion in 2013 (Standards Malaysia, 2014). In this case, halal certification becomes an important means of giving consumers the confidence to use the products. With the halal certificates, halal product companies have the advantage to penetrate halal industry at the international level. Realizing these opportunities, many entrepreneurs have taken the initiative to apply for halal certification in Malaysia through the e-application system MYeHalal entrusted under JAKIM.

The success story of Malaysia as the pioneer in the halal industry began in 1974 when the Research Centre for the Islamic Affairs Division in the Prime Minister's Office started to issue halal certification letters for products that met the halal criteria. The first halal standards released in 2000 was an important milestone for Malaysia as it became the first country to have a documented and systematic Halal assurance system. The standards became the impetus to a new revolution that had transformed the halal industry in Malaysia. The rapid development of Halal certification in Malaysia has also prompted the Department of Islamic Development Malaysia (JAKIM) to extend its halal section into a much bigger organisation in 2005, officially named JAKIM's Halal Hub. JAKIM was the world's first halal certification body responsible for monitoring the halal industry, leading to the amendment of Malaysia's Trade Description Act in 2011 which gives JAKIM a much stronger mandate to regulate the halal industry. JAKIM's recognition programme for international Halal bodies is the most stringent with over 50 international bodies registered to-date where as Malaysia Halal logo is the most globally-recognised hallmark that serves as a symbol for the country's reputation as the world's leading halal hub.

One of the initiatives in achieving Malaysia to become the global halal hub is through building up a credible and reliable system for halal certification. Halal certification is very much related to the economic growth. The macro-economic KPIs to be achieved by year 2020 are to obtain halal export revenue amounting to RM19 billion, creating 300,000 employments in halal

industry and to have at least 1,600 halal companies that export their products and services globally (Mustapha, 2016). In order to achieve the KPIs, there is a need of innovation in halal certification service, which in line with the use of technology as it can help the halal industry to become more profitable and competitive in the future (Mohd Iskandar et al, 2015).

## 1.2 MYeHalal System

JAKIM is the responsible body for halal certification process in Malaysia. Prior to year 2006, the certification process had been implemented manually. JAKIM eventually launched the E-Halal system in February 2006, with the aim to streamline the halal certification process as well as to ease the manufacturers and operators in getting halal certificates. The E-Halal system facilitates the online halal certification for the industry, provides database of halal companies or products and accessibility for any users to obtain halal certification for any businesses, products, including restaurants and hotels (Halal Malaysian Portal, 2011).

Starting from April 2014, JAKIM rebranded the Malaysian Halal Certification application systems to MYeHALAL. The branding involves improvements to the application form, which is classified into seven certification schemes, which are: (1) Food and Beverages Products; (2) Applied Products; (3) Food Premises; (4) Slaughterhouse; (5) Logistics; (6) Pharmaceuticals; and (7) Cosmetics and Toiletries (Department of Islamic Development Malaysia (JAKIM), 2015). Figure 1 shows the MYeHalal application system portal.

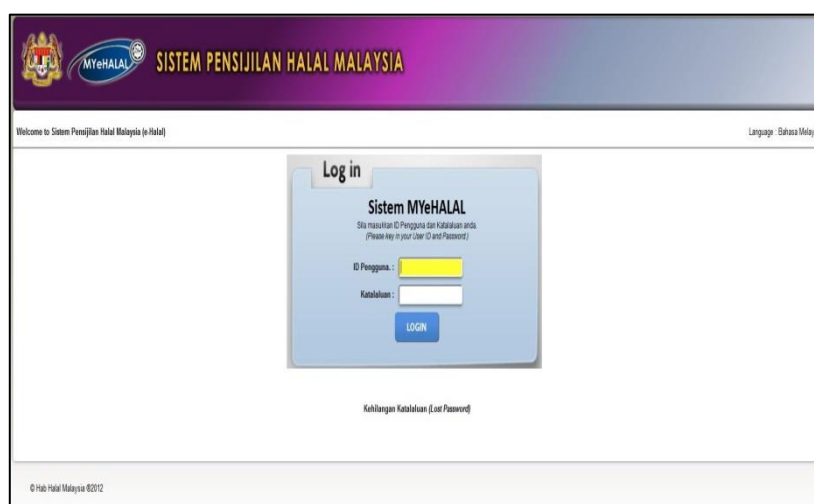


Figure 1 : MYeHalal Portal Site (<http://halal.gov.my>)

MYeHalal portal site is managed and entrusted under JAKIM. Application for the halal certificate and halal logo for national and international markets should be submitted as an on-line application completed with the attachment of required documents and relevant certificates. Applicants have to follow the instructions given, complete all the information needed and submit the application online after they have fulfilled all the requirements. To complete these tasks, the applicants need to have at least basic knowledge of information technology (IT) to use the MYeHalal system.

In this situation, it is vital for the applicants to be literate in IT to ensure the effective usage of this online system. MYeHalal web-based is designed with the objective to centralize and streamline the halal application process throughout Malaysia. Further, JAKIM introduced the MYeHalal online system for halal confirmation certificate application with the aim to make the process easier and quicker for the users or applicants. However, researches showed that MYeHalal web-based technology is not well organized and complicated to use (Sazelin et al,

2016b), especially in halal products, premises and abattoirs information (Zuhra et al, 2014). Furthermore, a few functions in the systems are found to be difficult to use; hence, needs improvement. Among them is the database in the system, which is not up-to-date and the language used available in Malay language only (Zuhra et al, 2014). These conditions have resulted in the resistance to use the online system.

The small businesses also complained that the process of applying the halal certificate is time consuming and complicated. In fact, there are companies who complained that they have to wait up to two years to obtain the halal certificate. The reasons why their application are rejected are such as: (1) Employers do not know the procedure; (2) MYeHalal system is difficult to control; (3) Employers do not have time to manage the documentation related to the application, which can reach to as thick as 300 pages; and (4) Employers do not have the knowledge of the requirements for the application. These problems, if they are not tackled may restrict the business growth of halal products in the local market as well international market. Some companies resort to solving this problem by hiring consultant to do the online application for their halal certificate. This has resulted in the proliferation of various agencies and consultants which impose unnecessary charges to the companies. However, this practice is not encouraged by JAKIM to avoid fraud and payment of unnecessary charges.

Motivated by the resistance and challenges to use the online system and the need to facilitate the process of halal certification, there is a need to investigate the use of MYeHalal system. A nuanced and holistic understanding of the usage of the MYeHalal system will help us to identify ways to facilitate the use of this online system, hence encouraging the applicants to apply the halal certificate online. For this purpose, this paper presents a conceptual model of Actor-Network Theory (ANT) as a tool to understand the interplay between the social and technical elements that takes place during the on application process using MYeHalal system. This conceptual model is expected to serve as a platform to enhance the use of MYeHalal that facilitates an efficient and fast application of halal certificate online. To date, no research has been carried out to develop a conceptual model of ANT in understanding the usage of MYeHalal system.

## 2. LITERATURE REVIEW

This study is framed by a review of literature related to research on online system provided by government sector or known as electronic government (e-government). A simple definition of electronic government (e-government) is “every governmental action that is based on the use of computer networks” (Montagna, 2005). The definition of e-government by the World Bank refers to the use by government agencies of information technologies (such as the internet and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends – better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions (The World Bank, 2015).

Nowadays, the focus of e-government services has changed from a government-centric concept to a citizen-centered concept, and the citizen is the key to the service. The concept of e-government using the citizen-centric approach has been widely used in many countries, such as the USA, Canada, England, Australia, Italy, South Korea and Singapore (Kanda et al, 2015). There are different types of e-government interactions and they can be distinguished into several categories: (1) government-to-government or G2G; (2) government-to-businesses or G2B; (3) government-to-citizens or G2C (Salleh, 2008; Norashikin et al., 2011; Hasmiah et al, 2013); (4) government-to-employees or G2E (Kanda et al., 2015); (5) Government to Non-

Governmental Organizations or G2NGO; and (6) Government to Non-Profit Organizations or G2NPO (Montagna, 2005). This research will be focusing on government to citizens (G2C), specifically on the MYeHalal system entrusted under JAKIM.

The technology is not the only factor in the successful integration and information exchange between the government sector and the users. It involves the integration of many factors: customer satisfaction (Shankar et al., 2003), service quality (Reichheld & Schefer, 2000), website design (Shih, 2004), user characteristics (Wind et al., 2002; Shankar et al., 2003), policy reinforcement and a strong host agency (Titah & Barki, 2006). A study showed that the perceived need of citizens to use e-government services is an important factor that contributes to the success of e-government (Lili, 2009).

Based on a research review in Malaysia, studies that address the difficulties in using MYeHalal on line system for halal confirmation certificate application is still non-existence. There have been several studies that investigate the e-halal system and halal certification in Malaysia. Among them are the study of e-Halal as the method and apparatus for halal product detection in Malaysia (Siti Salwa et al., 2015), studies on halal certification in Malaysia (Sazelin & Safiah, 2015; Muhammad Haziq et al, 2014; Sazelin et al., 2016a; Muhammad Haziq et al, 2015), a research on assessment on the utilization of current halal certification technologies (Zuhra et al., 2014) and the behavioral information search of halal products (Siti Zanariah et al., 2014). There are also studies in Malaysia that investigate the implementation of e-government based on a case study (Hasmiah et al., 2013), culture of e-consumers in e-government services (Norashikin et al., 2011) and citizens acceptance on government on-line systems (Maizatul Haizan et al., 2011).

In summary, studies related to the difficulties in using the MYeHalal system, is still non-existence. This study is important because it can help to facilitate entrepreneurs to go through the process of halal certification application without losing the credibility to secure the halal certification. The socio-technical model for the e-application of MYeHalal system proposed in this study can indirectly increase the business of the halal food operators and could strengthen the halal food industry around the world generally.

### 3. ACTOR NETWORK THEORY

ANT emerged from the field of science and technology studies during the 1980s, particularly associated with the work of three academics: Michel Callon, Bruno Latour and John Law. ANT refers to a theoretical framework which describes the world as a network of hybrid (social and technological) actants. It can more technically be described as a "material-semiotic" method. This means that it maps relations that are simultaneously material (between things) and semiotic (between concepts) (Law, 2007; Callon, 1986).

ANT also distinguishes itself from other socio-technical approaches by considering both human and non-human elements equally as actors within a network. ANT does not differentiate between science (knowledge) and technology (artifact). In other words, we should employ the same analytical and descriptive framework when faced with either a human, a text or a machine (Latour, 1996). These networks can include humans, things, ideas, concepts – all of which referred to as actors” in the network (Kathrin et al., 2010).

ANT is also viewed as a mechanism of telling a story and it can be presented as a complementary approach to information system studies, which have also largely avoided technologically deterministic hypothesis of causality between ICT innovation and particular organizational or societal effects (Carolyne, 2006). ANT diaspora also has spread to sociology, geography, management and organization studies, economics, anthropology and philosophy (Darryl, 2009). It uses all significant factors including human and non-human factors of a system and finds the inter-correlated of understanding between each factor in the effort to get

the comprehensive and understandable story of the whole system. ANT accepts the differences between human and non-human actors, but denies treating them separately (Panom & Ping, 2010). Therefore, each factor has equal treatment and interest regardless of their nature, either it is spoken or not, either it is visible or not. Carolynne (2006) argued that the understanding of power relationships in ANT means describing the way in which actors are defined, associated and obliged to remain faithful to their alliances. It is important to recognize that all actors in a system, in the sense that it can be seen or not seen in nature, as even wind which is unseen but can crack the trees.

#### 4. APPLYING ANT TO ANALYZE THE USAGE OF MYEHALAL SYSTEM

This study uses ANT as a conceptual framework to analyse and understand how exactly the social and technical factors take place in the application process using MYeHalal online system. There are several issues of difficulty and complexity faced by users during the application process of halal certification through MYeHalal system such as, the users’ ability to use the system as they have different level of knowledge in IT, the system is not user friendly in terms of its layout and its key function, and the user’s lack of awareness and knowledge of the rules, regulations and guidelines in halal application. To address the issues and problems of this study, this socio-technical approach will be appropriate for analysing the process of implementing e-government. The implementation of MYeHalal system involves human activities that are interrelated to various entities which interact with each other towards achieving a particular goal, namely to deliver efficient service.

As shown in Figure 2, the entities in this study are identified as:

- Users : applicants, system developer including their knowledge and skills (personal)
- Processes : e-application process for the Halal Confirmation Certificate for national and international markets.
- Organisations : JAKIM as the system owner in close collaboration with MAMPU.
- Guidelines : related guidelines, manuals, standards and acts.
- Technologies (System) : ICT, multi-media and software

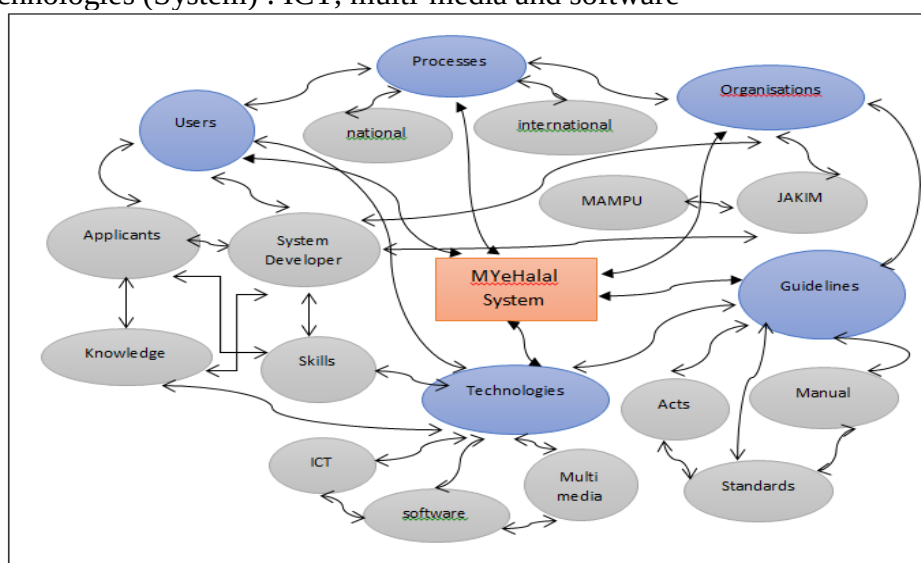


Figure 2 : The Possible Interactions of Various Entities

According to Figure 2 , all the entities in the network are interacting with each other and their interaction can affect the activities performed in the process of development and implementation of the system, which determines the successful or unsuccessful of the system.

In this study, ANT is used to investigate the roles, relationships and activities of all actors (entities) comprising of human and non-human (social and technological). All actors will then be analysed through the translation perspective of Actor Network Theory (ANT).

The translation process happens when the actors act and react to each other towards achieving the performance of using the system. The process of translation is conceptualised in Figure 2. The four stages involved in the translation process are (Callon, 1986):

- a) Problematization : indicates the most important actors, whether human or non-human, and define the problems so that other actors recognize them as their own problems.
- b) Interessement : Devices through which actants detach and reattach to lock allies into the problematization.
- c) Enrollment : is the outcome of the previous process, whereby more allies are attached whose roles must be defined and coordinated
- d) Mobilization : maintains the network by verifying the representativeness of the aliens by persuading them that their interests are the same as the translator's.

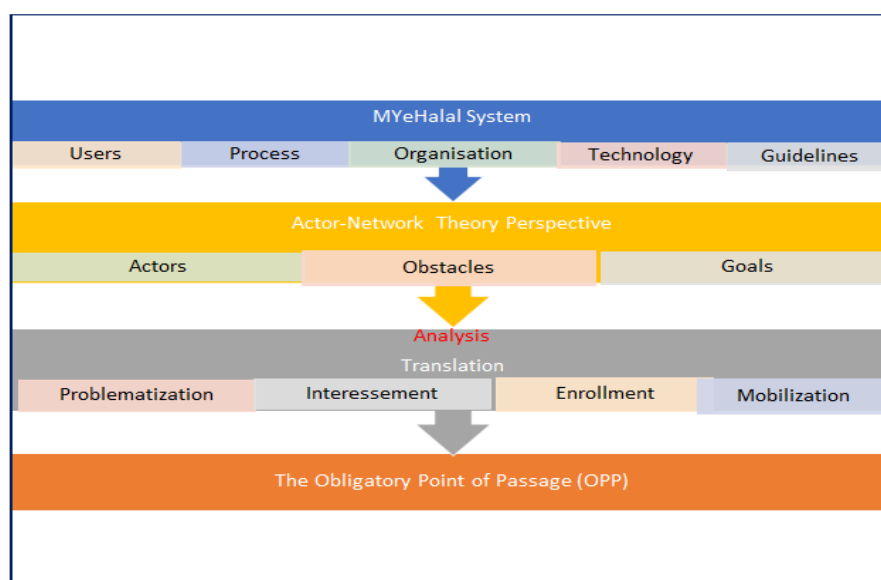


Figure 3 : The Translation Process (Adapted from Rhodes, 2009)

According to Carolynne (2006), the translation process is the mechanism whereby the network is progressively taking form, resulting in a situation where certain entities control others. This is where we can see the active and loud entities and how it affects the passive and quiet entities in the network. The obstacles in each step of translation then will be identified and negotiated between each other to seek an obligatory passage point or “OPP” at the end of the translation process. By analysing the different entities through the translation perspective of ANT, a holistic and nuanced understanding of difficulty and complexity faced by users during the process of halal certification application through MYeHalal system will be determined. The translation process will lead to the assumptions how to make this network stable and grow dynamically. The comprehensive understanding of the whole system works are the outcome of using ANT and this can help the user which is one of the actor to know what he/she should do and have prior using the system. Failure could be avoided if all actors know other actor's functions and role by stimulating understanding between them.

## 5. CONCLUSION

### 5.1 Contribution to knowledge

Findings of this study are expected to contribute to the generation of new knowledge on the usage of online technology. Rather than viewing the factors as direct cause and effect relationship, this study views the factors as interacting with each other, hence providing a more holistic understanding of the ways in which people use MYeHalal online technology.

### 5.2 Specific or potential application

This study coincides with the Malaysian Public Sector ICT Strategic Plan (2011-2015) outlined for all government bodies that encourage the adoption of e-government. Additionally, it also contributes to the development of Digital Malaysia that aims to achieve the widespread use of online technology among Malaysian entrepreneurs. Thus, this study will make unique contributions in the area of halal food industry, particularly related to online halal certification. The enhanced usage of MYeHalal system will facilitate the online application of the halal certificate. This directly helps to increase the number of registered halal companies, which eventually contributes to strengthen the halal industry in Malaysia as well as internationally. The facilitation of the online application thus improves the economy of our country, particularly the halal industry. The increased number of registered halal companies will also lead to the provision of safe and halal product that contributes to the improvement of the societal well-being of the nation.

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## RETURN AND VOLATILITY RELATIONSHIP IN U.S FINANCIAL MARKET: FINANCIAL RISK SPILLOVER IN US EQUITY AND BOND MARKET

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### ABSTRACT

*In this paper, we investigate the relationship between volatility and returns in bond and equity markets during the US financial crisis and EU crisis. We use the GARCH estimated volatility to measure stock and bond market volatility. Also VIX index is used to measure stock market volatility and robust check for result. We use vector auto regression (VAR) model and E-GARCH model with stock markets volume changes for measure relation between stock and bond, returns and volatility. Result shows that three important results. First, one lagged stock market volatility increase the short term bond market return. Second, stock market new information which is measured by stock volume changes affects bond market structure. Third, stock market volatility has asymmetric effects on short term and long term bond market volatility. Our findings show strong evidence of risk spillover between US stock market and bond market. Furthermore, our findings have some important implication for financial investor and policy makers for showing the linkage structure between stock market and bond market.*

**Keywords:** Stock market, Bond market, Financial risk spillover, E-GARCH model

### 1. INTRODUCTION AND LITERATURE REVIEW

International financial market are changing over time. Treasury bond yield and stock market index severely fluctuated due to the several financial crisis. Specially, development in computer science and internet technology makes easy to access and invest to international financial markets and it increase the fluctuation in financial markets. These circumstance are major problems and sensitive issues for international investor and policy makers when financial markets are in crisis. When one market volatility going higher, investor would change their invest plan and change their portfolio. These changing portfolio could affect other financial market return and volatility. Also, if financial market become risky, then it affects real economy factor and it becomes major concern for policy makers. So, find the linkage structure between financial markets is important problems for both investors and policy makers. In this paper, we investigate the relationship between two financial markets, Bond and Stock market. We find the relationship between volatility and returns of bond and stock markets and spillover effect from stock market to bond market because investor usually treat the bond market as safety heaven. Also one of most common risk diversification way is invest on both bond and stock. We'll find the relationship between these two markets and could help to adjust the risk diversification when stock market become risky. We can find some previous work to find relationship between stock and bond markets. Connolly et al (2005) show the co-movements of daily stock and Treasury bond returns. They find that bond returns tend to be high relative to stock returns when stock implied volatility increases. Their result also support that stock market uncertainty is important role in cross-market pricing and stock-bond diversification. Furthermore, Campbell and Taksler (2003) find that the effect of stock volatility on corporate bond yield. Their result shows that uncertain movement of stock volatility could affect corporate bond yield. Also they says that upward trend in equity volatility could explain increases in corporate bond yields. These two literature support that stock market risk affect bond market and there exist some relation between two markets. Also Felming et al (1998)

show the volatility linkage in the stock, bond and money markets. They use the future index of each market to measure the information movement and volatility linkage between markets. Specially, they find that the linkage have become stronger since the 1987 stock market crash. This paper support that information linkage between two market and cross effect between two markets.

Literatures in above show that relation between both market returns and volatilities but their approaches are limit in first order. In our paper, we approaches in second order term of bond market to analysis the bond market movement and changes in bond market structure. So, we review some papers about information transmission in international stock market. Papers called two basic hypothesis as MDH(Mixture of distribution hypothesis) and SIAH(Sequential information arrival hypothesis). Both hypothesis support that stock market information which is measured by stock volume changes transmit among international stock markets. Clark(1973), Epps(1976) and Harris(1987) show relation between volume and stock return with MDH hypothesis and, Coopeland(1976) and Jennigns(1987) show with SIAH hypothesis. We use theses hypothesis when analysis the bond market structure and show that stock market information spillover to bond market.

## 2. DATA

We use the S&P 500 index and US 3month and 10 year maturity bond to analyze relationship between two markets. Our data consist of daily closing price, from Bloomberg, for the period January 1 2006 to 14 March 2017. For stock market returns, we calculate the log daily returns of S&P 500. For bond market returns, we define the bond yield returns equation such that,

$$R_{B,t} = \ln\left(\frac{Bond_t}{Bond_{t-1}}\right)$$

where  $R_{B,t}$  is bond yield return at time t and  $Bond_t$  is bond yield at time t. Unlike the stock return, bond yield return's negative sign means that positive return in bond market because bond yield represent interest rate of future money when owns the bond. So, bond present value is more valuable when bond yield is in low. We also use the VIX and EGARCH(1,1) estimated volatility to measure stock and bond market volatility which considering the asymmetric shock effect.

Table 1 shows summary of data used in this paper. We test the autocorrelation, heteroscedasticity and stationarity of whole time series. We use Ljung-Box Q test and ARCH LM test with putting lag 20 to find autocorrelation and heteroscedaticity. For addition, we test the stationarity by using Perron's unit root test with structure break (Perron 1989). Whole time series have autocorrelation and heteroscedasticity.

*Table following on the next page*

Table 1. - Summary Statistics - showing statistics of stock and bond market in US. ‘\*\*\*’, ‘\*\*’, and ‘\*’ represent the significance level of 1%, 5%, and 10%, respectively.

|                                | <b>Bond 3M<br/>Return</b>     | <b>Bond 10Yr<br/>Return</b>     | <b>Stock Return</b>     | <b>Stock volume<br/>changes</b> |
|--------------------------------|-------------------------------|---------------------------------|-------------------------|---------------------------------|
| Observations                   | 2807                          | 2807                            | 2807                    | 2807                            |
| Sample Mean                    | -0.026                        | -0.008                          | 0.010                   | 0.002                           |
| Standard Error                 | 10.925                        | 0.958                           | 0.549                   | 10.705                          |
| <i>t</i> -Statistic (Mean=0)   | -0.126                        | -0.444                          | 0.930                   | 0.009                           |
| Skewness                       | -0.588***                     | -0.139***                       | -0.338***               | -0.287***                       |
| Kurtosis (excess)              | 23.374***                     | 3.091***                        | 10.779***               | 6.706***                        |
| Jarque-Bera Statistics         | 64060.633***                  | 1126.213***                     | 13642.214***            | 5298.149***                     |
| <b>Autocorrelation Test</b>    |                               |                                 |                         |                                 |
| Ljung-Box Q Test(20)           | 307.196***                    | 25.357                          | 115.261***              | 488.516***                      |
| <b>Heteroscedasticity Test</b> |                               |                                 |                         |                                 |
| ARCH LM Test(20)               | 16.867***                     | 10.148***                       | 75.339***               | 14.791***                       |
| <b>Unit Root Test</b>          |                               |                                 |                         |                                 |
| Perron Break Test              | -70.483***                    | -53.862***                      | -59.317***              | -80.979***                      |
|                                | <b>Bond 3M<br/>Volatility</b> | <b>Bond 10Yr<br/>Volatility</b> | <b>Stock Volatility</b> | <b>VIX</b>                      |
| Observations                   | 2806                          | 2806                            | 2806                    | 2808                            |
| Sample Mean                    | 211.609                       | 0.936                           | 0.273                   | 19.880                          |
| Standard Error                 | 1040.757                      | 0.660                           | 0.438                   | 9.562                           |
| <i>t</i> -Statistic (Mean=0)   | 10.770***                     | 75.140***                       | 33.093***               | 110.177***                      |
| Skewness                       | 17.360***                     | 1.386***                        | 5.360***                | 2.404***                        |
| Kurtosis (excess)              | 370.969***                    | 2.537***                        | 37.079***               | 7.641***                        |
| Jarque-Bera Statistics         | 1.623E7***                    | 1651.678***                     | 174173.299***           | 9536.229***                     |
| <b>Autocorrelation Test</b>    |                               |                                 |                         |                                 |
| Ljung-Box Q Test(20)           | 6996.064***                   | 45797.59***                     | 34249.988***            | 45501.769***                    |
| <b>Heteroscedasticity Test</b> |                               |                                 |                         |                                 |
| ARCH LM Test(20)               | -                             | -                               | -                       | -                               |
| <b>Unit Root Test</b>          |                               |                                 |                         |                                 |
| Perron Break Test              | -50.852***                    | -5.096***                       | -10.577***              | -6.178***                       |

We put the lagged component and estimate with white estimation (robust estimation) to solving autocorrelation and heteroscedasticity problems. Stationary result shows that whole series are stationary. Bond yield returns and stock return are negatively skewed, leptokurtic and non-normal distribution. Also, volume changes has same descriptions. All variables have autocorrelation and heteroscedasticity. Result of Perron break test shows all variables are stationary. Table 1 also contains the volatility statistics which measured by EGARCH(1,1) model. Estimation result of EGARCH(1,1) which considering asymmetric effect represents in Table 2.

Table 2.  
**E-GARCH(1,1) Model Estimation Result**

The table reports estimation result of EGARCH(1,1). Panel A shows the estimation result of mean equation ( $R_t = a_0 + a_1R_{t-1} + \varepsilon_t$ ). Panel B shows the estimation result of variance equation ( $\ln h_t = b_0 + b_1(|\varepsilon_{t-1}| - b_1\varepsilon_{t-1}) + b_2\ln h_{t-1}$ ). Parentheses are T-statistics. '\*\*\*', '\*\*' and '\*' represent the significance level of 1%, 5% and 10%, respectively.

Panel A. Mean Equations

|          | Bond 3M                 | Bond 10Yr          | Stock                 |
|----------|-------------------------|--------------------|-----------------------|
| Constant | -0.042***<br>(-4.297)   | -0.016<br>(-1.211) | 0.012*<br>(1.923)     |
| STR{1}   | -0.131***<br>(-149.052) | -0.010<br>(-0.447) | -0.064***<br>(-3.326) |

Panel B. Variance equations

|                |                         |                       |                        |
|----------------|-------------------------|-----------------------|------------------------|
| Constant       | -0.177 ***<br>(-21.968) | -0.083***<br>(-5.959) | -0.150***<br>(-9.483)  |
| B(1)           | 0.293 ***<br>(25.648)   | 0.105***<br>(5.683)   | 0.133***<br>(8.665)    |
| B(2)           | 0.995 ***<br>(921.235)  | 0.995***<br>(685.327) | 0.973***<br>(259.925)  |
| B(3)           | -0.181***<br>(-20.832)  | -0.037***<br>(-4.589) | -0.163***<br>(-12.274) |
| Log Likelihood | -8139                   | -3496                 | -1435                  |

Result supports that there are asymmetric effect in volatility among all financial markets. Also, table 1 results show that volatility indexes are stationary and autocorrelated. Result shows that all volatility indexes are non-normal, negatively skewed, leptokurtic and have non-zero means.

### 3. METHOD AND RESULTS

#### 3.1. VAR model

In this section, we investigate the relationship between returns and volatility. For avoiding autocorrelated problems, we use the vector autocorrelated regression (VAR) model. Also, we decompose the volatility into predictable part and unpredictable part with using AR processes. From this analysis, we find difference between predictable and unpredictable shock. We have a set of four equations as:

$$\begin{aligned}
 StockR_t &= a_0 + a_1BondR_{t-1} + a_2StockR_{t-1} + a_3StockVol_{t-1} + a_4BondVol_{t-1} + \varepsilon_{1,t} \\
 BondR_t &= b_0 + b_1BondR_{t-1} + b_2StockR_{t-1} + b_3StockVol_{t-1} + b_4BondVol_{t-1} + \varepsilon_{3,t} \\
 StockR_t &= a_0 + a_1BondR_{t-1} + a_2StockR_{t-1} + a_3PStockVol_t + a_4UPStockVol_{t-1} \\
 &\quad + a_5BondVol_{t-1} + \varepsilon_{1,t} \\
 BondR_t &= b_0 + b_1BondR_{t-1} + b_2StockR_{t-1} + b_3PStockVol_t + b_4UPStockVol_{t-1} \\
 &\quad + b_5BondVol_{t-1} + \varepsilon_{3,t}
 \end{aligned}$$

Where  $BondR_t$ ,  $StockR_t$ ,  $BondVol_t$  and  $StockVol_t$  represent bond yield return, stock return, bond market volatility and stock market volatility respectively. And  $PStockVol_t$  and  $UPStockVol_t$  represent predictable volatility and unpredictable volatility respectively. We estimate the coefficient with GLS method.

**Table 3-1**  
**VAR Model Estimation Result**

The table shows estimation result of VAR model. Panel A shows the result with estimated volatility and Panel B shows the result with volatility after decomposition. Parentheses are T-statistics. '\*\*\*', '\*\*' and '\*' show the significance level of 1%, 5% and 10%, respectively.

|                                          | GARCH Volatility      |                        |                       |                     |
|------------------------------------------|-----------------------|------------------------|-----------------------|---------------------|
|                                          | Stock                 | Bond 3M                | Stock                 | Bond 10Yr           |
| <i>Panel A. Volatility</i>               |                       |                        |                       |                     |
| Constant                                 | 0.010<br>(0.838)      | 0.102<br>(0.434)       | -0.007<br>(-0.400)    | -0.034<br>(-1.092)  |
| Stock{1}                                 | -0.102***<br>(-5.410) | 0.467<br>(1.286)       | -0.108***<br>(-5.254) | -0.047<br>(-1.308)  |
| Bond{1}                                  | 0.001<br>(0.701)      | -0.271***<br>(-14.628) | 0.009<br>(0.766)      | 0.003<br>(0.125)    |
| Stock Volatility{1}                      | 0.013<br>(0.535)      | -1.526***<br>(-3.226)  | -0.010<br>(-0.376)    | -0.056<br>(-1.232)  |
| Bond Volatility{1}                       | 0.000<br>(-1.386)     | 0.001***<br>(6.481)    | 0.022<br>(1.289)      | 0.045<br>(1.497)    |
| <i>Panel B. Volatility Decomposition</i> |                       |                        |                       |                     |
| Constant                                 | 0.011<br>(0.942)      | 0.111<br>(0.476)       | -0.007<br>(-0.366)    | -0.033<br>(-1.059)  |
| Stock{1}                                 | -0.115***<br>(-6.057) | 0.457<br>(1.249)       | -0.120***<br>(-5.865) | -0.064*<br>(-1.770) |
| Bond{1}                                  | 0.001<br>(0.756)      | -0.271***<br>(-14.634) | 0.009<br>(0.776)      | 0.003<br>(0.129)    |
| Predictable Stock Volatility             | 0.010<br>(0.415)      | -1.569***<br>(-3.381)  | -0.013<br>(-0.508)    | -0.065<br>(-1.469)  |
| Unpredictable Stock Volatility{1}        | 0.448***<br>(5.585)   | -0.047<br>(-0.030)     | 0.448***<br>(5.582)   | 0.589***<br>(4.179) |
| Bond Volatility{1}                       | 0.000<br>(-1.456)     | 0.001***<br>(6.531)    | 0.022<br>(1.324)      | 0.047<br>(1.563)    |

Table 3-1 shows estimation result with using GARCH volatility. Panel A shows the result with estimated volatility and Panel B shows the result with volatility after decomposition. We use AR(L) model to decompose volatility in to predictable volatility and unpredictable volatility. L is lag difference determined with Bayesian information criterion. Panel A result shows that lagged bond yield returns don't affect the stock return while lagged stock return decrease the stock return. Stock volatility decrease the 3 month bond yield return and it means that increasing of stock volatility cause decreasing in bond yield return. It shows that rising in stock market risk causes increasing in short term bond return. However, stock market volatility is not significant role in stock return equation and long term bond return. Panel B result shows the role of predictable stock volatility and unpredictable stock volatility. Predictable stock volatility decrease short term bond yield return. It shows strong evidence that if investor predict rising volatility in stock market, then they change their invest decision and invest in short term bond market. So, predictable stock volatility increase the bond market return. In contrast, unpredictable stock volatility decrease the long term bond return. In this case, unpredictable stock market volatility increase stock market returns and it comes from active trading in stock market. So I guess investor more focus on stock market and they invest more money in stock market instead of bond markets. This results consistent in VIX volatility case.

**Table 3-2****VAR Model Estimation Result – Continues on the next page**

The table shows estimation result of VAR model. Table 4-2 shows estimation result with using VIX volatility index. Panel A shows the result with estimated volatility and Panel B shows the result with volatility after decomposition. Parentheses are T-statistics. '\*\*\*', '\*\*' and '\*' show the significance level of 1%, 5% and 10%, respectively.

|                                          | VIX Volatility        |                        |                       |                    |
|------------------------------------------|-----------------------|------------------------|-----------------------|--------------------|
|                                          | Stock                 | Bond 3M                | Stock                 | Bond 10Yr          |
| <i>Panel A. Volatility</i>               |                       |                        |                       |                    |
| Constant                                 | -0.005<br>(-0.187)    | 0.661<br>(1.416)       | -0.004<br>(-0.165)    | 0.011<br>(0.251)   |
| Stock{1}                                 | -0.100***<br>(-5.230) | 0.310<br>(0.844)       | -0.109***<br>(-5.243) | -0.058<br>(-1.586) |
| Bond{1}                                  | 0.001<br>(0.700)      | -0.269***<br>(-14.500) | 0.009<br>(0.767)      | 0.002<br>(0.091)   |
| Stock Volatility{1}                      | 0.001<br>(0.828)      | -0.048**<br>(-2.234)   | 0.00<br>(-0.209)      | -0.004<br>(-1.623) |
| Bond Volatility{1}                       | 0.00<br>(-1.429)      | 0.001***<br>(6.143)    | 0.022<br>(1.127)      | 0.063*<br>(1.839)  |
| <i>Panel B. Volatility Decomposition</i> |                       |                        |                       |                    |
| Constant                                 | -0.002<br>(-0.080)    | 0.692<br>(1.484)       | -0.002<br>(-0.084)    | 0.014<br>(0.335)   |
| Stock{1}                                 | -0.024<br>(-0.761)    | 2.349***<br>(3.930)    | -0.030<br>(-0.953)    | 0.060<br>(1.080)   |
| Bond{1}                                  | 0.001                 | -0.273***              | 0.010                 | 0.003              |

|                                   |          |           |          |          |
|-----------------------------------|----------|-----------|----------|----------|
|                                   | (0.524)  | (-14.764) | (0.841)  | (0.152)  |
| Predictable Stock Volatility      | 0.001    | -0.050**  | -0.001   | -0.005*  |
|                                   | (0.684)  | (-2.342)  | (-0.571) | (-1.947) |
| Unpredictable Stock Volatility{1} | 0.029*** | 0.754***  | 0.030*** | 0.044*** |
|                                   | (3.108)  | (4.269)   | (3.245)  | (2.754)  |
| Bond Volatility{1}                | 0.000    | 0.001***  | 0.030    | 0.075**  |
|                                   | (-1.482) | (6.068)   | (1.513)  | (2.179)  |

Table 3-2 shows estimation result with using VIX volatility index. Result are very similar with table 3-1 result. Stock volatility decrease short term bond yield return. In volatility decomposition case, predictable stock volatility decrease short term bond yield return and unpredictable stock volatility increase stock market return and bond markets yield returns.

### 3.2. EGARCH(1,1) with volume changes

We set the EGARCH(1,1) model of bond market with adding stock volume changes in variance equation to identify the financial information spillover effect from stock market to bond market. Also, we add stock volatility and decomposed volatility in variance equation to robust check. We set up the mean equation and variance equations as:

$$BondR_t = a_0 + a_1 BondR_{t-1} + \varepsilon_t$$

$$\ln h_t = b_0 + b_1(|\varepsilon_{t-1}| + b_3 \varepsilon_{t-1}) + b_2 \ln h_{t-1} + b_4 StockVC_t + b_5 StockVol_{t-1}$$

$$\ln h_t = b_0 + b_1(|\varepsilon_{t-1}| + b_3 \varepsilon_{t-1}) + b_2 \ln h_{t-1} + b_4 StockVC_t + b_5 PStockVol_t + b_6 UPStockVol_{t-1}$$

Where  $BondR_t$ ,  $StockR_t$ ,  $BondVol_t$ ,  $StockVol_t$ ,  $PStockVol_t$  and  $UPStockVol_t$  represent bond yield return, stock return, bond market volatility, stock market volatility, predictable volatility and unpredictable volatility respectively. Also  $h_t$  represents dynamic variance of mean equation error term. We add asymmetric term in variance equation to check asymmetric effect of shock. Table 4-1 shows estimation result with stock volatility and Table 4-2 shows estimation result with decomposed stock volatility.

*Table following on the next page*



**Table 4-1**  
**E-GARCH(1,1) with Volume Change**

The table 4-1 reports estimation result of EGARCH(1,1) with volume changes and stock volatility in volatility equation. Parentheses are T-statistics. '\*\*\*', '\*\*' and '\*' represent the significance level of 1%, 5% and 10%, respectively.

Panel A. Mean Equations

|          | W/O volatility        |                    | GARCH volatility      |                    | VIX volatility        |                    |
|----------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
|          | Bond 3M               | Bond 10Yr          | Bond 3M               | Bond 10Yr          | Bond 3M               | Bond 10Yr          |
| Constant | -0.046***<br>(-5.267) | -0.003<br>(-0.256) | -0.042***<br>(-7.955) | -0.001<br>(-0.068) | -0.045***<br>(-5.096) | 0.001<br>(0.077)   |
| STR{1}   | -0.128***<br>(-6.254) | -0.020<br>(-1.150) | -0.127***<br>(-8.236) | -0.019<br>(-1.083) | -0.129***<br>(-6.047) | -0.019<br>(-1.119) |

Panel B. Variance equations

|                     |                        |                       |                        |                       |                        |                       |
|---------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|
| Constant            | -0.173***<br>(-21.974) | -0.084***<br>(-8.106) | -0.167***<br>(-19.536) | -0.084***<br>(-8.007) | -0.152***<br>(-15.214) | -0.092***<br>(-8.322) |
| B(1)                | 0.289***<br>(25.342)   | 0.104***<br>(7.986)   | 0.287***<br>(23.493)   | 0.1***<br>(7.816)     | 0.288***<br>(22.675)   | 0.102***<br>(9.176)   |
| B(2)                | 0.995***<br>(967.841)  | 0.995***<br>(599.199) | 0.997***<br>(950.937)  | 0.994***<br>(766.328) | 0.997***<br>(857.842)  | 0.993***<br>(515.818) |
| B(3)                | -0.183***<br>(-18.427) | -0.036***<br>(-4.985) | -0.188***<br>(-19.554) | -0.031***<br>(-4.648) | -0.188***<br>(-17.805) | -0.031***<br>(-4.510) |
| Volume Changes      | -0.004*<br>(-1.880)    | 0.027***<br>(12.909)  | -0.005**<br>(-2.313)   | 0.028***<br>(12.618)  | -0.005**<br>(-2.156)   | 0.028***<br>(12.346)  |
| Stock Volatility{1} | -                      | -                     | -0.04***<br>(-5.226)   | 0.01***<br>(2.653)    | -0.001***<br>(-4.033)  | 0***<br>(2.773)       |
| Log Likelihood      | -8139.066              | -3431.921             | -8126.690              | -3429.053             | -8130.928              | -3428.484             |

**Table 4-2**  
**E-GARCH(1,1) with Volume Change - (Continues on the next page)**

The table 4-2 reports estimation result of EGARCH(1,1) with volume changes and decomposed stock volatility in volatility equation. Parentheses are T-statistics. '\*\*\*', '\*\*' and '\*' represent the significance level of 1%, 5% and 10%, respectively.

Panel A. Mean Equations

|          | GARCH volatility       |                  | VIX volatility        |                   |
|----------|------------------------|------------------|-----------------------|-------------------|
|          | Bond 3M                | Bond 10Yr        | Bond 3M               | Bond 10Yr         |
| Constant | -0.042***<br>(-67.134) | 0.001<br>(0.079) | -0.045***<br>(-5.182) | 0.000<br>(-0.039) |

|                                    |                        |                       |                        |                       |
|------------------------------------|------------------------|-----------------------|------------------------|-----------------------|
| STR{1}                             | -0.129***<br>(-75.077) | -0.019<br>(-1.146)    | -0.131***<br>(-80.952) | -0.019<br>(-1.009)    |
| <i>Panel B. Variance equations</i> |                        |                       |                        |                       |
| Constant                           | -0.167***<br>(-23.476) | -0.086***<br>(-9.075) | -0.146***<br>(-15.653) | -0.091***<br>(-8.300) |
| B(1)                               | 0.281***<br>(27.379)   | 0.102***<br>(8.577)   | 0.277***<br>(22.244)   | 0.1***<br>(8.317)     |
| B(2)                               | 0.996***<br>(1128.098) | 0.994***<br>(687.339) | 0.997***<br>(980.759)  | 0.993***<br>(495.197) |
| B(3)                               | -0.183***<br>(-28.160) | -0.032***<br>(-5.362) | -0.185***<br>(-20.222) | -0.03***<br>(-4.199)  |
| Volume Changes                     | -0.005***<br>(-2.674)  | 0.028***<br>(13.525)  | -0.007***<br>(-3.490)  | 0.028***<br>(11.234)  |
| Predictable Stock Volatility{1}    | -0.029***<br>(-3.523)  | 0.009**<br>(2.379)    | -0.001***<br>(-4.505)  | 0***<br>(2.614)       |
| Unpredictable Stock Volatility{1}  | 0.726***<br>(5.849)    | -0.156<br>(-1.573)    | 0.029***<br>(4.684)    | 0.002<br>(0.458)      |
| Log Likelihood                     | -8110.698              | -3428.047             | -8121.496              | -3428.404             |

GARCH coefficients are similar with result in table 2. Volume changes in stock market are significant role in volatility equation of bond market in all cases. Volume changes in stock market decrease short term bond market volatility while increase long term bond market volatility. It shows that investor increase their long term bond portion when actively invest in stock market for risk diversification. But short term bond portion decrease when actively invest in stock market because long term bond is safer asset than short term bond. Also in this model, stock market volatility affects bond market volatility. Result shows that stock market volatility significantly increase long term bond market volatility while decrease short term bond case. It supports previous VAR result. Table 4-2 shows result with volatility decomposition. Volume changes effect results are similar to the result in 4-1. Also predictable stock volatility decrease bond market volatility while unpredictable volatility are not. This result shows that unpredictable stock market volatility, risk, spillover to bond market and change the bond market volatility structure.

#### 4. CONCLUSION

In this paper, we find 3 major findings in US financial markets.

First, stock market volatility increase the short term bond market return. We find that one lagged stock volatility decrease the short term bond yield return and it means that stock volatility increase the bond market return. Furthermore, expected stock volatility increase bond market return but unexpected stock volatility decrease bond return. It shows that finance investor actively change their invest decision when stock market become volatile.

Second, stock market new information which is measured by stock volume changes affects bond market structure. Changes in stock volume decrease the short maturity bond market volatility and increase the long maturity bond market volatility. It supports that information changes in stock market move to the bond market and change the invest structure in bond invest. However, the sign of volume changes are different in short term bond and long term bond. It is

weird result but short term bond is more risky than long term bond. So I could be explain as investor balance their portfolio with safe asset when new information arrive in stock market. Third, stock market volatility affect the bond market volatility. Specially, predictable stock volatility has asymmetric effect on short term and long term bond market volatility. It shows the investor's risk diversification behavior. Increase in stock market volatility means that risk increasing in stock markets. Bond market treat as safety heaven and flight to quality shows that increase demand in long term bond market when financial markets become risky. So they would invest more safe assets and it causes increase volatility in long term bond and decrease in short term bond. Also unpredictable stock volatility increasing the short term bond market volatility shows contagion phenomenon. Risk in stock market also spillover to bond market and it causes that increasing in bond market volatility.

Our findings show that financial risk spillover in US equity and bond markets. It shows that one markets situation can affect other market structure and change the market circumstance. It has some important implication for risk diversification who invest in US financial markets. Also it can help for policymakers for policymaking when financial shocks occur. Finding the linkage structure between financial markets can show effectiveness of policy for preventing the financial shocks.

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## **BOND MARKET SPILLOVERS AND BILATERAL LINKAGES: EVIDENCE FROM EMERGING ECONOMIES**

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### **ABSTRACT**

*Although there are numerous studies that have looked at the spillover effects in equity markets, little attention has been paid to explore the integration of bond markets of developed and emerging economies. Our paper is an attempt to fill this void by quantifying the spillovers from developed countries on the bond markets of 25 emerging economies. We apply volatility and return spillover models to quantify the extent of the spillovers from developed markets (i.e. the US, UK and Japan) into emerging bond markets. We find that the extent of the return spillovers and volatility spillovers has not been symmetric across emerging markets. We explain these differences using bilateral factors such as trade volume, portfolio investment, cultural and geographical factors. The bilateral trade volume turns out to be the leading explanation for the extent of spillovers between our set of countries.*

**Keywords:** *Bond market integration; Volatility; Spillover; Bilateral trade*

### **1. INTRODUCTION**

Since the last three decades, financial systems in emerging economies have become progressively integrated with the financial system of developed markets. There are two main driving forces behind the broadening and deepening of cross-border financial ties between emerging and developed markets (Wooldridge et al. 2003; Bekaert and Harvey 1997 & 2000). One is the advances in information and computing technology that has provided impetus to local market participants, seeking higher returns and diversification opportunities, to invest abroad. The second is the liberalization policies pursued by several emerging economies, that have encouraged capital inflows by removing restrictions on international financial transactions, and deregulating domestic financial markets through implementing market based reforms in monetary, exchange and credit management. At the same time, the progress towards financial integration is further complemented by formal trade and investment agreements among various groups of countries (such as, EU, ASEAN, GCC etc.) that have provided greater impetus to regional as well as global integration.

Although greater financial integration has facilitated emerging economies through optimal allocation of capital and sharing of idiosyncratic risks, thereby promoting higher economic growth; the string of financial crises in the past two decades has cautioned policymakers that, regardless of potential gains, financial integration can entail considerable costs. This is for the reason that in a world with imperfect markets, financial integration may enhance an emerging country's vulnerability to economic and financial shocks. The recent global financial crisis

(GFC) of 2007-08 is a case in point, that has clearly exhibited that economic and financial shocks can spread from the developed to emerging markets. For instance, in the aftermath of the GFC, emerging and developing economies across all regions experienced a substantial decline in output growth: real GDP growth dropped from 8.3 percent in 2007 to 2.5 percent in 2009 (IMF 2009 & 2010). Similarly, Didier et al. (2012, p. 2052) established that “contrary to popular perceptions, emerging economies suffered growth collapses (relative to the pre-crisis levels) comparable to those experienced by developed economies”.

Although there are cross-country differences in the degree of financial integration, the available data clearly point that emerging economies, at present, are more closely integrated with developed economies than they were in the past. As emerging markets mature, they become more exposed to the shocks originating from developed markets, implying that a financial shock can be even more costly for these markets. So the question remains as to how vulnerable are emerging economies if there is a slowdown in the global economy? This calls for an in-depth assessment of the degree of financial integration between emerging and developed markets i.e. how deep are the financial links across developed and emerging world?

On the specific question of financial interconnectedness between developed and emerging markets, there is growing body of evidence which largely point towards an effective transmission of volatility between emerging markets and their developed counterparts. For example, Rejeb and Boughrara (2015) concluded that financial integration amplifies volatility transmission between emerging and developed markets. Balli et al. (2015b) found evidence of considerable spillovers (both returns and volatility) from developed markets to emerging markets in Asia and Middle East and North Africa (MENA) region. Balli et al. (2015a), using a different methodology, found similar results for emerging markets of Asia, the GCC, Eastern and Central Europe, Africa, and Latin America. Neaime (2012) established strong financial linkages between MENA stock markets and other developed financial markets. Several other studies have examined the same phenomenon for specific emerging market regions (such as, Guyot et al. (2014), Balli et al. (2013b) for the MENA region; Yilmaz (2010), Tay and Zu (2000), and, Chanchaoenchai and Dibooglu (2006) for the ASEAN region; Abugri (2008), Chen et al. (2002) and Diamandis (2009) for the Latin American region; and, Balli et al. (2013a) and Al-Deehani and Moosa (2006) for the GCC region.).

In contrast to widespread studies analyzing the integration of equity markets of emerging economies (as listed above), few studies attempt to disentangle the driving forces behind the integration of emerging bond markets. This is the main focus of our study. Amongst the few studies on emerging bond markets, Dell’Erba et al. (2013) found strong evidence of spillover effects in the sovereign bond market from advanced to emerging economies. Jaramillo and Weber (2013) estimated that domestic bond yields in emerging economies are significantly influenced by global risk appetite and liquidity conditions. On the contrary, Pierce (2010) showed that greater foreign participation in the government bond market tends to reduce volatility in bond yields in emerging markets. In addition, greater foreign participation is found to considerably reduce long-term government yields.

Giving the limited research and inconclusive findings on emerging bond markets, our paper attempts to fill this void by quantifying the spillovers from developed countries on the bond markets of emerging economies. Specifically, we apply volatility and return spillover models to gauge the extent of the spillovers from developed markets (i.e. the US, the UK and Japan) into 25 emerging bond markets. We find that the extent of the return spillovers and volatility spillovers has not been symmetric across emerging markets. This result point to a crucial

question as to what factors might explain the cross-country differences in the extent of the spillovers originating from developed markets. Subsequently we address this question by exploring the factors that affect the bond market spillovers in emerging markets. In this vein, a relatively recent strand of research has looked at the role of economic factors, cultural affinities and geographical proximity in explaining the spillover effects. For instance, in case of sovereign bond market for emerging economies, Dell’Erba et al. (2013) showed that geographical proximity, along with trade and financial linkages are the key determinants of spillovers from advanced economies. Interestingly, the authors found trade linkages to be a relatively stronger transmission channel than financial linkages. Balli et al. (2015a) found that bilateral trade, security investments, a common language, and market capitalization are significant in explaining shocks in a large sample of 39 emerging markets of Asia, the GCC, Eastern and Central Europe, Africa, and Latin America. In another study on emerging economies of Asia and MENA region, Balli et al. (2015b) concluded that trade volume, portfolio investment and distance are the leading determinants of the spillover effects. Similarly, Ben Rejeb and Boughrara (2015) make the point that geographic distance is the leading determinant of the transmission of shocks to emerging markets. Covering the period 1999–2007, Büttner and Hayo (2011) found that market capitalisation, interest rate spreads and business cycle synchronisation are the major determinants of stock market integration among EU countries. Jaramillo and Weber (2013) showed that fiscal fundamentals, financial sector openness and the external current account balance play a leading role in explaining the global spillovers in the emerging bond markets.

Based on the aforementioned survey of literature, we examine the determinants of return and volatility spillovers originating from developed countries using bilateral factors such as volume of trade, portfolio investment, cultural and geographical factors. We find that bilateral trade volume between developed and emerging markets is a leading explanation for the extent of spillover: a higher trade volume leads to a higher degree of spillover from developed to emerging markets. We conjecture that real sector linkages may result in strengthening financial linkages that eventually trigger spillovers from mature to emerging markets. The rest of the paper is organized as follows. In Section 2, we describe the construction of the variables and the data sources. The estimation findings are discussed in detail in Section 3. Finally, Section 5 concludes this paper.

## 2. DATA

We apply the Government Benchmark Bid Yield from Datastream for 25 emerging countries and the US, UK and Japan. The emerging markets are divided into four regions: South America – Argentina, Brazil, Chile, Colombia and Mexico; Europe – Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia; Asia – China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, Taiwan, Thailand, Turkey and Vietnam; and Africa – South Africa. This grouping enables us to figure out the regional differences in the degree of spillovers from developed markets, that may arise because of geographical differences and other region-specific macroeconomic factors. We extract the weekly yields from 10 October 2005 to 20 October 2014, that in aggregate comprises 472 observations (after minor adjustments). We use weekly data, which is helpful in addressing non-synchronous data problems associated with daily data. We also use logarithmic rates of return that are calculated by taking the logarithmic growth rates of the bond indices, as commonly used in empirical literature. The list of variables considered in the cross-section analysis includes (i) the volume of bilateral trade between emerging economies and their developed country counterparts; (ii) the market capitalization of the emerging economy (in US dollars); (iii) having a colonial relationship; (iv) sharing same language; (v) sharing same border; and, (vi) the geographic distance between the capital cities of the countries in sample. Bilateral trade data containing information on exports and imports

of goods between emerging markets and the developed economies of the US, UK and Japan, are obtained from the United Nations Conference on Trade and Development (UNCTADstat) database. Bond market capitalization represents the total volume of bonds outstanding, which is collected from the World Federation of Exchanges (WFE).

In addition, the variables of having a colonial relationship, sharing same language, common border, as well as the geographic distance between the capital cities are all collected from the French Research Center in International Economics (CEPII).

### 3. METHODOLOGY

In this paper, we follow Bekaert and Harvey (1997), Ng (2000), Bekaert et al. (2005) and Balli et al. (2013), who build return and volatility spillover models for stock returns in international equity markets; however we build spillover models for emerging bond markets.

#### 3.1 Variance Ratios

In order to measure the magnitude of shocks from the UK, US or Japan on the volatility of the unexpected return from each emerging bond market, we build the following variance ratios in the constant spillover model:

$$VR_{i,t}^{us} = \frac{\phi_{us,t-1}^2 \varepsilon_{us,t}^2}{h_{i,t}}, \quad (1)$$

$$VR_{i,t}^{uk} = \frac{\phi_{uk,t-1}^2 \varepsilon_{uk,t}^2}{h_{i,t}}, \quad (2)$$

$$VR_{i,t}^{japan} = \frac{\phi_{japan,t-1}^2 \varepsilon_{japan,t}^2}{h_{i,t}}, \quad (3)$$

Where  $VR_{i,t}^{us}$ ,  $VR_{i,t}^{uk}$ ,  $VR_{i,t}^{japan}$  measure the effect of shocks from US, UK or Japan aggregate bond indices at time  $t$ , respectively. The variance ratios are useful to explain how strong the spillover effects are in affecting the unexpected return of each emerging bond market with the influences of its own shocks. We can evaluate the relative magnitude of all shocks from the volatility of the emerging bond market by comparing the average of these variance ratios.

#### 3.2 Cross-section Analysis

After accessing the magnitude of all the external shocks through variance analysis from the variance ratios of the US, UK and Japan, we now focus on their potential underlying determinants. We presume that the range of shocks towards the emerging bond markets is related to the volume of bilateral trade (TRADE), market capitalization of the emerging economy (CAPT), having a colonial relationship (COL), sharing same language (LANG), sharing same border (CONTIG), as well as physical distance (DIST).

In order to measure the influences of these hypothesized factors, the cross-section analysis for the variance ratio of the emerging bond market is given:

$$\widehat{VR}_i^j = \alpha_0 + \alpha_1 TRADE_i^j + \alpha_2 CAPT_i^j + \alpha_3 LANG_i^j + \alpha_4 CONTIG_i + \alpha_5 COL_i^j + \alpha_6 DIST_i^j + \varepsilon_i \quad (4)$$

Where  $\widehat{VR}_i^j$  is the variance ratio that implies the corresponding magnitude of shocks from the developed bond market which is the US, UK or Japan ( $j$ ) to the emerging bond market( $i$ ).  $TRADE_i^j$  is the magnitude of trade among the emerging markets ( $i$ ) and the developed markets ( $j$ ).



We apply the volume of export and import to stand for the independent variable  $TRADE_i^j$ .  $CAPT_i^j$  is the volume of market capitalization that can be considered to stand for the size of the emerging bond market (i), and independent of the developed bond markets.  $LANG_i^j$  is a dummy variable and equals 1 when the emerging market and the developed country share same language, otherwise,  $LANG_i^j$  equals 0.  $CONTIG_i^j$  is a dummy variable and equals 1 when the emerging country (i) shares the same boarder with the developed country (j), otherwise, it equals 0.  $COL_i^j$  is a dummy variable and equals 1 when the emerging country (i) had or has a colonial relationship with the developed country (j), otherwise, it equals 0.  $DIST_i^j$  is the physical distance between capital cities of the emerging country (i) and the developed country (j). The cross section is estimated in two ways by following equation (14). First, we merge the data for the aggregate cross-section estimations, and then using the equation (14), the total observations are  $25 \times 3 = 75$  from all the developed markets. Second, we estimate the data separately. The estimations take on all the emerging markets for each of the developed countries (j). For each estimation the observation is  $25 \times 1 = 25$ .

## 4. Empirical Analysis

### 4.1 . Variance Ratios

As explained in the methodology section, variance ratios measure the intensity of spillover effects from developed bond markets (the US, UK, and Japan) to their counterparts in emerging markets.

Table 1 reports the percentage mean variance ratios of three shocks –  $VR_{i,t}^{us}$ ,  $VR_{i,t}^{uk}$ ,  $VR_{i,t}^{japan}$ , whereas Table 2 presents the percentage median variance ratios of these shocks.

Across the South American markets, we find a higher magnitude of spillovers from the US market (around 34% on average) as compared to UK and Japanese markets (around 20% and 11%, respectively). As established earlier, Mexican bond market is highly influenced from the US market (63.65%). Moreover, except Chile, all other markets in South America witness a high level of spillovers from the US market. The mean variance ratios in case of the UK bond market are also higher for South American countries; for example, Brazil (47.25%), Chile (26.76%) and Argentina (23.31%). For the other regional countries (Colombia and Mexico), the variance ratios of the UK spillovers are only around 3%. Table 3 further supports these findings wherein median variance ratios show that the US market has, on average, around 32% spillover effects on South American markets. This is considerably high compared to the spillover effects of UK (9%) and Japanese (6%) markets.

For European bond markets, mean variance ratios (Table 2) show that the magnitude of the spillovers from the US and Japanese market dominates, while the effect of the UK market is relatively small. In particular, around 50% of the shocks to bond markets in Latvia, Czech Republic, Poland and Slovakia can be attributed to shocks originating from the US market. Similarly, the impact of Japanese market is substantially large for Croatia (62%), Slovakia (44%), Lithuania (43%), Czech Republic (40%) and Hungary (32%). The impact of UK market is rather limited, except for Latvia (36%) and Slovenia (32%). Table 3 confirms that the spillover effects from UK on the emerging European markets are quite low on average, compared to those from the US or Japanese markets.

In Asian emerging markets, the impact of the Japanese spillover shocks is substantially higher than the other two developed markets: it is around 41%, on average, for Japan, and 17% and 12% for the US and UK markets, respectively. In particular, the spillover effects from the

Japanese market are very high for Indonesia (64%), Malaysia (58%), India (57%), Turkey (50%), Hong Kong (46%), and China (42%). It appears that the spillover effect is higher for those countries that have greater bilateral trade and financial linkages with Japan. The dominance of the Japanese bond market is reconfirmed by the median variance ratios, as reported in Table 3.

For South Africa, spillovers from US market are 51%; whereas spillovers from Japan are less than 10%, and those from UK are almost negligible (0.02%).

Overall, Tables 2 and 3 show that there are substantial differences across regions with regards to the intensity of shocks as reflected by variance ratios. For instance, we find the dominance of US shocks in South American emerging markets, while most shocks to European bond markets emerge from both the US and Japanese markets. Likewise, for the Asian region, significant spillover effects originate from Japanese market only.

#### 4.2 Cross-Section Analysis

In this section, we go one step further and quantify the determinants of spillovers from the US, UK and Japan to bond markets of 25 emerging economies. Tables 4 and 5 present our main findings based on the cross-section estimations of Equation 14, where the dependent variable is the variance ratio ( $\widehat{VR}_i^j$ ) indicating the corresponding magnitude of shocks from the developed market (j) to the emerging bond market (i). Empirically, we test if the variance ratios are affected by bilateral trade, market capitalization, common language, sharing same border, colonial ties, and the physical distance between the capital cities. To begin with, we examine the determinants of spillovers from all the three developed markets as a group (Tables 4 and 5); while later on we estimate the model for each of the developed market separately (Tables 6 and 7). The aggregate estimation with the mean variance ratio is presented in Table 4. We present the regressions by including the determinants one by one, and finally report the estimates of the full model in the last column. First and foremost, our variable of interest is the measure capturing the trade volume between developed markets and their counterparts in emerging economies. The trade measure comes out to be positively significant in all models (Columns 1 and 7), implying that the higher the bilateral trade between developed and emerging markets, the greater will be the magnitude of shocks to emerging markets. In the full model (Column 7), a percentage point increase in bilateral trade is found to produce spillovers of 0.33% from all the three developed markets. Similar results of a strong association between trade flows and equity market integration are documented by Bodurtha et al. (1989), Campbell and Hamao (1992) and Bracker et al. (1999). Balli et al. (2015 a & 2015b). For instance, in case of 39 emerging equity markets, Balli et al. (2015b) calculated that a 1% increase in trade flows causes spillovers of 0.19% from the US, 0.41% from Euro area, and 0.64% from Japan. Table 5 shows the estimation results for the median variance ratios. As established earlier, bilateral trade flows appear to be the leading determinant of spillovers to emerging bond markets. The coefficient is positive and significant at the 1% level, suggesting that higher trade flows lead to higher intensity of shocks to emerging markets. The proxies for market capitalization, common language, sharing same border, colonial ties, and physical distance are found to be statistically insignificant in the full model (Column 7). Overall from Tables 4 and 5, we are not able to observe any prominent role these factors play in causing spillovers from the developed markets to 25 emerging bond markets. Overall, our findings indicate that trade flows play a predominant role in explaining the return and volatility spillovers from developed to emerging bond markets; while the other factors such as market capitalization, common language, sharing same border, colonial ties, and physical distance have limited role in explaining shock spillovers to these markets.

We contribute to the literature by finding that economic factors (such as bilateral trade) are relatively important determinants of spillovers to emerging markets, as compared to cultural and geographical factors.

## 5. CONCLUSION

Although there are possible cross-country differences in the degree of financial integration, the available data clearly point to significant integration of emerging markets with the global financial system. This paper quantifies the extent of bond market integration of a sample of 25 emerging markets with the developed markets. We find that the extent of the return spillovers and volatility spillovers originating from developed countries are heterogeneous among the emerging economies.

We explain these differences using bilateral factors such as trade volume, portfolio investment, cultural and geographical factors. The bilateral trade volume turns out to be the leading explanation for the extent of spillovers between our set of countries.

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*Appendix follows on the next page*

**Table 1 – Variance Ratios:**

Mean:

|                      | US     | UK     | JAPAN  |
|----------------------|--------|--------|--------|
| <b>South America</b> |        |        |        |
| Argentina            | 24.70% | 23.31% | 10.33% |
| Brazil               | 36.20% | 47.25% | 17.46% |
| Chile                | 6.92%  | 26.76% | 10.68% |
| Colombia             | 41.16% | 2.64%  | 13.82% |
| Mexico               | 63.65% | 3.83%  | 6.01%  |
| <b>Europe</b>        |        |        |        |
| Croatia              | 2.19%  | 15.72% | 62.13% |
| Czech                | 42.33% | 0.10%  | 40.07% |
| Hungary              | 17.95% | 8.96%  | 32.26% |
| Latvia               | 56.21% | 36.74% | 0.21%  |
| Lithuania            | 9.13%  | 10.54% | 43.41% |
| Poland               | 54.44% | 8.67%  | 14.25% |
| Slovakia             | 46.58% | 0.42%  | 44.17% |
| Slovenia             | 12.19% | 32.39% | 28.86% |
| <b>Asia</b>          |        |        |        |
| China                | 32.26% | 3.51%  | 42.33% |
| Hong Kong            | 3.72%  | 24.85% | 46.44% |
| India                | 1.15%  | 12.46% | 57.25% |
| Indonesia            | 3.88%  | 0.37%  | 64.15% |
| Malaysia             | 1.90%  | 9.57%  | 58.31% |
| Philippines          | 51.62% | 3.08%  | 17.24% |
| Singapore            | 9.34%  | 17.88% | 52.08% |
| Taiwan               | 10.40% | 28.60% | 21.31% |
| Thailand             | 47.88% | 6.10%  | 8.66%  |
| Turkey               | 12.95% | 11.91% | 50.51% |
| Vietnam              | 21.04% | 16.38% | 38.04% |
| <b>Africa</b>        |        |        |        |
| South Africa         | 51.44% | 0.02%  | 9.49%  |

**Table 2 – Variance Ratios:**

**Median:**

|                      | US     | UK     | JAPAN  |
|----------------------|--------|--------|--------|
| <b>South America</b> |        |        |        |
| Argentina            | 18.52% | 16.03% | 3.45%  |
| Brazil               | 29.34% | 13.52% | 16.21% |
| Chile                | 1.82%  | 13.08% | 2.67%  |
| Colombia             | 35.10% | 0.91%  | 5.68%  |
| Mexico               | 76.84% | 1.38%  | 1.49%  |
| <b>Europe</b>        |        |        |        |
| Croatia              | 0.57%  | 6.21%  | 73.96% |
| Czech                | 37.51% | 0.03%  | 33.74% |
| Hungary              | 10.62% | 4.71%  | 24.28% |
| Latvia               | 62.66% | 30.39% | 0.03%  |
| Lithuania            | 3.09%  | 3.46%  | 39.19% |
| Poland               | 60.57% | 3.93%  | 5.90%  |
| Slovakia             | 47.67% | 0.12%  | 39.98% |
| Slovenia             | 5.99%  | 24.84% | 20.71% |
| <b>Asia</b>          |        |        |        |
| China                | 21.69% | 1.27%  | 38.36% |
| Hong Kong            | 1.55%  | 14.65% | 48.09% |
| India                | 0.31%  | 4.59%  | 65.85% |
| Indonesia            | 0.69%  | 0.05%  | 77.86% |
| Malaysia             | 0.52%  | 3.25%  | 67.31% |
| Philippines          | 58.21% | 1.07%  | 6.73%  |
| Singapore            | 3.78%  | 9.90%  | 57.49% |
| Taiwan               | 5.02%  | 23.73% | 12.28% |
| Thailand             | 48.44% | 2.83%  | 2.34%  |
| Turkey               | 6.46%  | 5.55%  | 54.68% |
| Vietnam              | 12.94% | 9.24%  | 31.62% |
| <b>Africa</b>        |        |        |        |
| South Africa         | 53.91% | 0.01%  | 3.19%  |

**Table 3 – Aggregate Cross Section Analysis**

**Mean**

| MEAN                         | 1         | 2        | 3         | 4           | 5         | 6         | 7           |
|------------------------------|-----------|----------|-----------|-------------|-----------|-----------|-------------|
| <b>Trade (TRADE)</b>         | 0.2658*** |          |           |             |           |           | 0.334143*** |
|                              | 0.065554  |          |           |             |           |           | 0.153658    |
| <b>Capitalization (log)</b>  |           |          |           |             |           |           |             |
| <b>(CAPT)</b>                |           | -0.00291 |           |             |           |           | -0.009011   |
|                              |           | 0.011378 |           |             |           |           | 0.013701    |
| <b>Language (LANG)</b>       |           |          |           |             |           |           |             |
|                              |           |          | -0.074778 |             |           |           | -0.09317    |
|                              |           |          | 0.057705  |             |           |           | 0.081104    |
| <b>Contiguous(CONTIG)</b>    |           |          |           |             |           |           |             |
|                              |           |          |           | 0.401488*** |           |           | -0.032083   |
|                              |           |          |           | 0.024995    |           |           | 0.189801    |
| <b>Colony (COL)</b>          |           |          |           |             |           |           |             |
|                              |           |          |           |             | -0.048122 |           | 0.032592    |
|                              |           |          |           |             | 0.055986  |           | 0.093184    |
| <b>Distance (log) (DIST)</b> |           |          |           |             |           |           |             |
|                              |           |          |           |             |           | -0.016903 | 0.008485    |
|                              |           |          |           |             |           | 0.029487  | 0.030042    |
| <b>R-squared</b>             | 0.074071  | 0.000767 | 0.017367  | 0.056994    | 0.005267  | 0.004058  | 0.112696    |
| <b>Observations</b>          | 75        | 75       | 75        | 75          | 75        | 75        | 75          |

The table present the cross-section analysis results for these three developed markets together following the equation:

$$\widehat{VR}_i^j = \alpha_0 + \alpha_1 TRADE_i^j + \alpha_2 CAPT_i + \alpha_3 LANG_i^j + \alpha_4 CONTIG_i + \alpha_5 COL_i^j + \alpha_6 DIST_i^j + \varepsilon_i \quad (14)$$

\*, \*\*, \*\*\* indicate that the t-statistics are significant at the 10%, 5% and 1% levels respectively.

**Table 4 – Aggregate Cross Section Analysis**

| <b>Median</b>                |             |           |          |             |           |           |             |
|------------------------------|-------------|-----------|----------|-------------|-----------|-----------|-------------|
| <b>MEDIAN</b>                | <b>1</b>    | <b>2</b>  | <b>3</b> | <b>4</b>    | <b>5</b>  | <b>6</b>  | <b>7</b>    |
| <b>Trade (TRADE)</b>         | 0.356202*** |           |          |             |           |           | 0.390293*** |
|                              | 0.08936     |           |          |             |           |           | 0.194526    |
| <b>Capitalization (log)</b>  |             |           |          |             |           |           |             |
| <b>(CAPT)</b>                |             | -0.003344 |          |             |           |           | -0.012236   |
|                              |             | 0.012819  |          |             |           |           | 0.016048    |
| <b>Language (LANG)</b>       |             |           | -0.0649  |             |           |           | -0.06976    |
|                              |             |           | 0.063428 |             |           |           | 0.088829    |
| <b>Contiguous(CONTIG)</b>    |             |           |          | 0.571814*** |           |           | 0.068755    |
|                              |             |           |          | 0.029855    |           |           | 0.249779    |
| <b>Colony (COL)</b>          |             |           |          |             | -0.063136 |           | 0.013435    |
|                              |             |           |          |             | 0.066363  |           | 0.102814    |
| <b>Distance (log) (DIST)</b> |             |           |          |             |           | -0.019776 | 0.008162    |
|                              |             |           |          |             |           | 0.031343  | 0.0326      |
| <b>R-squared</b>             | 0.096496    | 0.000735  | 0.009489 | 0.083864    | 0.006577  | 0.00403   | 0.131875    |
| <b>Observations</b>          | 75          | 75        | 75       | 75          | 75        | 75        | 75          |

The table presents the cross-section analysis results for these three developed markets together following the equation:

$$\widehat{VR}_i^j = \alpha_0 + \alpha_1 TRADE_i^j + \alpha_2 CAPT_i + \alpha_3 LANG_i^j + \alpha_4 CONTIG_i + \alpha_5 COL_i^j + \alpha_6 DIST_i^j + \varepsilon_i \quad (14)$$

\*, \*\*, \*\*\* indicate that the t-statistics are significant at the 10%, 5% and 1% levels respectively.

*End of the paper*



## UNCOVERED INTEREST RATE PARITY AND MONETARY POLICY

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### ABSTRACT

*In this paper the validity of the uncovered interest parity (UIP) between the Turkish Lira (TRY)/US Dollar (USD) and Turkish Lira (TRY)/Euro (EUR) are examined. First, we explore the long-run relationship between the expected rate of depreciation of the exchange rate and interest rate differential using the bound testing approach developed by Pesaran et al. (2001). Secondly, we adopt an error correction model to test causality between the variables. Our estimates show that the UIP hypothesis does not hold for either case. In addition, we find that when exchange rate between the TRY/USD depreciates, interest rate differential increases. Therefore, we conclude that the CBRT may increase the domestic interest rate when the Turkish Lira depreciates against US Dollar with the aim of controlling capital movements. This is consistent with the McCallum (1994)'s argument suggesting that monetary policy behavior may distort the UIP condition.*

**Keywords:** ARDL; exchange rates; uncovered interest parity

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*Full paper is not available upon Authors' request*

## CLUSTER AS A MANAGEMENT TOOL INSTRUMENT AIMED AT BUSINESS EFFICIENCY IMPROVEMENT

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### ABSTRACT

*In economically advanced countries, the concept of clusterization is a generally accepted and extensively used practice. While reasons for the establishment of clusters are numerous, the most notable ones are the influence of clusters on productivity, innovation, development of new businesses and encouraging exports. Clusters enhance the competitiveness of enterprises, stimulate the production of goods and services which will generate revenue in domestic and international markets. Croatia, as a transition country, is faced with many problems, such as declining competitiveness, lack of direct foreign investments, decline of export. Additionally, a major problem is the fact that there are a lot of small enterprises in Croatia that compete with each other. While a number of years is necessary for cluster development from the bottom up, the state is trying to influence cluster development and accelerate the process of cluster assembly. The Poljomehanizacija cluster is one the more successful examples in Croatia, while it clearly shows all the positive effects of clusterization on increasing small enterprise productivity inside a cluster, as well as a cluster in general.*

**Keywords:** *cluster, competitiveness, strategic alliances, economic growth*

## 1. CLUSTER IN MANAGEMENT ECONOMY

### 1.1. Evaluation and prediction of the demand

The composition and character of the domestic market usually has a disproportionate effect on how companies receive, understand and respond on customers' needs. A nation has a competitive advantage in the industry where the domestic demands are giving their companies a clearer and simpler picture of the emerging customer needs, and where the more demanding buyers are forcing to innovation and accomplishing of a higher level of a sophisticated competitive advantage over foreign rivals. The terms of the domestic demands are helping in the building of competitive advantages when some industry segment is bigger or more visible on the domestic market than on the foreign market. A bigger market segment in the nation is receiving most attention from the national companies (Porter, 1990).

For evaluation and prediction of the demand inside the cluster there is a process of strategic planning going on which consists of three steps:

#### *1. SWOT analysis with whom we are answering on the question: where are we now?*

SWOT analysis is the matrix analysis that is based on: strengths, weaknesses, opportunities and threats. The analysis is based on analysing the position of the entrepreneur, in this case the whole cluster, in relation to the mentioned parameters from where are further business decisions made, and the model is coming on the market. The goal of the results is not only to evaluate the existing situation, but they have to serve for the defining of future clusters. The strategy and program that will be developed, will strengthen the strength and chances in that region and it will consider how to improve the fields that are weak and threatened.

It is impossible to correct all weaknesses. The one that cannot be corrected, anyhow, has to be mentioned, because they will influence on the decision about what types of jobs will this strategy do. The SWOT analysis will serve for getting precise information about the strengths and weaknesses of the very economic subjects, apropos about the region and the chances and the limitations in their environment where they are acting in the moment of the establishing of the real, apropos the starting level, and define future goals.

SWOT analysis permits and demands a detailed analysis of the functioning of all processes and business technology in relation to the achieved organisational culture and the abilities of available resources.

*2. The defining of the vision, mission and goals of the cluster answers the question: what is the reason for our existence?*

For the assessment of the strategic focus and the shaping of the statement of the mission it's important to discuss about the main trends (chances and threads) with which the region is facing, the values of the inhabitants of the region and the jobs in relation to economic changes and quality of life. The results of the discussions will serve as the basis of the statement about the vision. The statement about the mission should serve for the assessment of particular goals, which should be the types of jobs that are the local strength and new chances for growth in a particular region.

*3. Strategic planning of the development, answers the question: how to accomplish that?*

An activity program is developed, step by step, towards the accomplishing of the vision and goals. The acquirement of the strategic goal with the application of the appropriate strategy will depend on the whole of the organisation strategy where there is a hierarchy of goals and strategies, from the strategic to the operative level, with the existence of organisational parts that are a support to this levels (Horvat, Kovačević, 2004).

If companies want on a proper way to evaluate and predict the demands for products and services that the cluster is providing, there has to be an analysis of the momentary positions of a company inside a cluster, so a SWOT analysis. That way it will be possible to make conclusions in what segments to expect the greatest demands, and what less attractive products and services to make better. The next step is to define the reason of existence of the cluster, which includes the defining of the vision, mission and goals. The last step is to define the way on which the cluster is trying to realise the given goals, which includes the defining of the appropriate strategy. For the evaluation and prediction of the demands on the market, of great importance is also the nature of the domestic buyers. If it's about very demanding, sophisticated buyers of products and services, national companies will get a competitive advantage. In fact, demanding buyers allow insight in advanced needs of buyers, they are making pressure on companies to achieve high standards and they encourage them on improvement, on innovation and improvement to higher, advanced segments. By expressing their needs, buyers can help companies in recognition of early indicators of global market trends.

## **2. EXPENSE CONCEPT OF THE CLUSTER**

### **2.1. The financing of the cluster**

The financial sources of every single cluster are coming from incentive stakes gained by inclusion in various programs of institutions and state bodys, from inaugural roles of cluster members, roles of the new cluster members and periodically paid membership by the participants of the cluster. Furthermore, clusters can be financed with money from foreign fonds and programs that are meant for the regional development of the state, and with money from other persons promotional involved in the activities and the work of the cluster (Horvat,

Kovačević, 2004). As a way of the cluster functioning, it's advisable to use a combination of various finance sources.

The projects of the clusters are usually financed by the members, but for good projects it's possible to get support from the state and units of local self-administration, as from European funds. So the main finance sources can appear as:

1. Forms of internal financing: membership fees, services that are provided to the membership, services towards common projects of the membership;
2. Forms external financing: incentive resources and subventions of state bodies and agencies, sponsorship, donations, EU funds and international projects (Horvat, Kovačević, 2004).

The financing of subjects that direct with the work of the cluster is being done by the norms of the calculation. The supervisory board brings on the proposition of the board the annual finance plan which has a plan of the income and expense sources that have to be balanced. The positive difference between incomes and expenses on the end of the annual calculatory season will be transfered on the next year or the membership price will be lower. The negative difference by the annual calculation is being covered by calculation enhancing in the next year (Horvat, Kovačević, 2004). The system for the financing of the work of the economic subject that will manage the work of the cluster consists of inaugural stakes, membership of the participants, stakes of new members and of the financing of the cluster members in percentage of realised sells (Horvat, Kovačević, 2004).

## **2.2. Inaugural stakes**

Inaugural stakes are important for the success of the whole project of the cluster members which in the first year have to receive much more, and take only a small part from the inaugural stakes, so they could feel the income during the first sensitive phase of the project. After that it's necessary with the membership fee to downsize the share of the potential recourses that was taken away from other sources, mainly because that were recourses of the state subvention programs. The inaugural stake of every single cluster founder can be divided in several categories, with a view to the financial ability of the cluster members that every founder is paying according to the proposition in the Contract of cluster establishing (Horvat, Kovačević, 2004). With the establishing of the cluster, once the common interests are settled, it's important on a proper way to define the inaugural roles. This is particularly important when you are opening a cluster as a d.o.o., where there are needed greater initial finance recourses for projects. When it's about a citizen organisation, then everything is much easier because the expenses are lower, but also the motives and outcomes are different. EU offers a possibility to get specific resources, but there have to be already invented programs that get that resources. Every cluster has expenses on the beginning, starting with simple one like founding costs, accountancy costs or webpage. Once there is an agreement among the participants, the start-up expenses, for the cluster inauguration, are not a big problem (<http://klasteri.com/FinanciranjeKlastera.html> 20.08.2016.).

## **2.3. Membership fees of the participants**

The basis of the cluster financing is the membership fee. If the intention is to start only the basic activities, a symbolic amount will be enough that the members are paying once a month, quarterly or annually. The membership fee should be defined on the very beginning, with a clear explanation for what this resources will be used for. The amount of the membership fee represents also the basic power in decision making. One of the often used financing models is a different amount of the membership fee depending on the strength of the members (employee

number, ultimate profit, asset amount). A bigger amount of the membership fee means also a bigger number of votes in the managing organs. The size of the membership fee depends on the benefit that the members are getting from the cluster. The bigger the benefit, usually the bigger the membership fee. The size and the periodicity of the membership fee payments defines and proposes the supervisory body of the subject that manages the cluster. One of the models of establishing the membership fee is defined by determining various membership fees regarding by the criteria which are classifying the economic subjects into categories by the number of employees, by the entire income and the size of assets (Horvat, Kovačević, 2004)

Table 1 criteria for membership fee defining and authorizations in euros

| Category | Size of the economic subject | Criteria 1<br>Number of employees | Criteria 2<br>Entire income  | Criteria 3<br>Assets        | Amount | Number of voices |
|----------|------------------------------|-----------------------------------|------------------------------|-----------------------------|--------|------------------|
| A        | Micro                        | to 10                             | to 3.000.000                 | to 2.000.000                | 250    | 1                |
| B        | small                        | 11-50                             | from 3.000.000 to 8.000.000  | from 2.000.000 to 5.000.000 | 500    | 2                |
| C        | Middle                       | 51-250                            | from 8.000.000 to 16.000.000 | from 5.000.000 to 8.000.000 | 1000   | 4                |
| D        | big                          | od 251                            | 16.000.000 and more          | 8.000.000 and more          | 2000   | 6                |

Source: Horvat Đ. i Kovačević V., *Clusters, the way to competitiveness*, 2004, page 88.

From table 2 it can be seen how the amount of the membership fee and the number of voices depends on the size of the economic subject, the number of employees, entire income and the asset of the company. What is important to highlight is that the number of voices that are gained with the entering in a category has to be added to the number of voices that are gained with the payment of the membership by the defined criteria and then quartered.

#### 2.4. The stakes of new members

Depending on the strength and phase of the development, usually the question is asked what expenses new members have to cover, when they joined afterwards and when they are entering in a well formed organisation. In early phases there can be asked for an inaugural stake, and imperatively there must be asked for a membership payment. If it is about an operational cluster with attractive projects, it's possible to ask for an additional participation. The stakes of new members are very important in the membership payment system what is a complex field that responds to the state of supply and demand for membership in the cluster. If the cluster makes positive results and if future members see that with a membership they can accomplish bigger benefits than to work independent, the size and structure of the membership of every single cluster should be adapted to that.

Every new member that approaches in such circumstances to the cluster should pay:

- The inaugural stake according to the financial ability
- The membership fee according to the established amounts on the conference of the subject that governs the work of the cluster, whereas it uses with the already gained positive image of the cluster
- A special kind of fee by which they compensate the gained image and the established results of the cluster (Horvat, Kovačević, 2004).

## **2.5. Financing of the cluster members in the percentage of the accomplished selling**

As one more resource sources for clusters there is also the participation of the members in projects. The projects often represent an additional investment and the members participating in them are co-financing the projects according to their interest (Horvat, Kovačević, 2004). The model of financing the cluster members, can be applied in a common project, which means financing of the subject that manages the work of the cluster so that from every sold and invoiced product among the members there is separated an agreed percentage, apropos an amount of money that goes on a common account and serves for the cluster management.

## **2.6. Other expenses of the cluster**

Considering that the creating of the cluster is a very important project for the whole region, and that it enables the development of rural areas, and it is interesting to big economic subjects from other industries. Big economic subjects are ready to invest part of their money in promotional purposes as help to the community in which they are. Because they care for the environment and common interests, it's possible with the products of the representatives of those economic subjects to ensure a big part of the money meant for the cold drive of the subject which will manage the cluster (Horvat, Kovačević, 2004). Serious cluster initiatives are basing their work on official documents and analyses like studies of justification of the founding, plan and work program, which make needs to be financed. Production clusters also have expenses of investment studios or technological study. This documents in effect represent the cluster to all partners, its possibilities and activities. Regardless from the legal form of the organisation, clusters need to have an annual financial plan. This is made by the congress or the board of directors on the proposition of the president or cluster manager. The finance plan is based on predicted sources of incomes and expenses that, at an organisation, have to be equable, because the majority of clusters are registered as non-profit vocational organisations. At clusters registered as association with a limited responsibility, its desirable to plan incomes that are a little bit bigger then the planned expenses and investments, because only a cluster with a positive business and a well-planned project can attract bigger incentive resources from the state. The ministry of entrepreneurship and trades is regularly co-financing the making of all key documents until a maximum of 75% from the entirely acceptable expenses through the program „entrepreneur impulse“. Additional expenses of the cluster are also represented by the consulting services, that occur in the early phases of the cluster initiative, so it's smart to prepare certain resources for management consulting services until the cluster hasn't become enough financially strong so it can hire its own cluster manager.

## **2.7. Decision making structure in the cluster**

Joining in a cluster can help every company, and so can the whole industry in competing on the most sophisticated way by using the most advanced skills and technologies. Thereto, administrations have to broaden their way of thinking outside their organisations and industries, because vertical integration maybe was once adequately, but in today's conditions companies have to make good connections with customers, suppliers and other institutions of cluster organisation. Exactly by acting in the cluster framework companies are creating cooperation

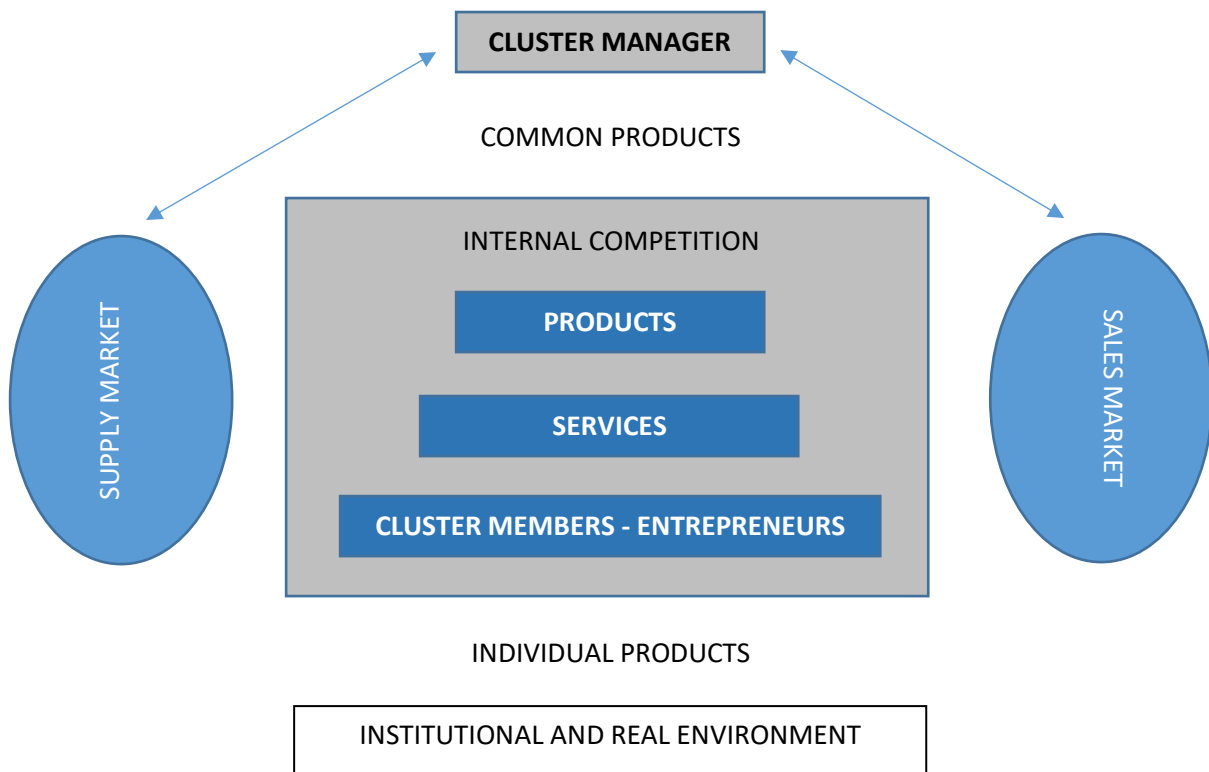


and business connecting with the named business subjects. For cluster organising it's needed to examine the location, local acting, cluster upgrade and the collective acting (Porter, 1998). According to Porter, the way of acting of the cluster stimulates the collective activities in the private sector. For clusters that make small and middle companies, there is a big need for collective bodies so sensitive functions can be made. With the common acting of the government and the private sector conditions are made that promote growth, and the clusters are providing a constructive way of changing the nature of the dialog between the private and the public sector (Porter, 1998.). The circumstances in what the cluster arises, as the very content and industry branch within what it works influences the way on what the management and decision structure is shaped. The cluster doesn't represent the traditional organisation model, therefore the traditional leading and management model is not adequate. Additional aggravating circumstances for the establishment and managing of the cluster is also the big social dimension of the cluster which is reflected in its basic settings, communication and coordination between the members. However, the aforesaid elements are in the same time a big challenge for the modern management, and particularly for the leadership, because of the joining of various resources and competences from a certain economic community for the purposes of bigger collective, but also individually competitive advantage of separately acting. In order to maximise the benefits of the acting of the cluster, companies have to actively participate and establish a significant local acting. The members of the cluster, companies can have great benefits by increasing their acting beyond its standard acting as a cluster member.

## **2.8. Organisational structure of the cluster**

After establishing the way of acting, it's needed to specify also the form of the organisation that the cluster represents. The cluster represents a set of companies, apropos networking along with simultaneously keeping individuality of every single cluster subject. Then it's obvious that the cluster is a decentralised form of organisation that consists of a number of micro organisations (Sikavica, 1999). It's very important that the participants of the cluster understand the influences on productivity and how the cluster stimulates the same. The stakes of the private sector and the government has to be the same. An early and continuously communication and discussion, and education of the participants of the cluster about the competitiveness help in changing the mind-set. Also, a common attitude is needed about the competitiveness of the private sector, the government and the connected institutions of the cluster, and union and non-government organisations. Cluster of organisations is one of the forms of divisional organisational structures used in organisations that are using simultaneously a larger number or various strategies. Unlike a pure divisional organisation, which would be a more proper form of organisation in companies with a strategy of connected diversification, the structure of a cluster is used in companies oriented on a strategy of unconnected diversification, apropos on mixes strategies. On the other hand, clusters represent decentralised form of organisation. When it is about companies, the cluster can have in itself a larger or smaller number of profit centres, and some of the clusters are also called strategic business units. So, as the strategic business units consist of a larger number of business units apropos divisions, so also the clusters consist of a larger number of profit centres (Sikavica, 1999). Cluster management involves management of all cluster members for the purpose of creating a common database, knowledge, skills, available technologies, work power, that the cluster members can share one with another, and therefore its necessary all the time to invest in building of social capital. Encouraging communication among members, as well as common research and development influences the enhancement of productivity. Picture 2 shows a cluster structure and the relationships with the environment. On the picture is the cluster manager shown on the top of the cluster, namely, he manages and coordinates the cluster. Inside the cluster, the members share common products, however, companies can also specialize for particular individual products.

PICTURE 2 Cluster structure and the relationships with the environment



Source: analysis of interested units of local self-administration

The cluster consists of members doing associated services, and the task of the team that governs the cluster is to stimulate companies to rationalisation and specialization, so that each of the companies could take its place on the market and potential customers.

The key parameters of an efficiently cluster management are:

- trust;
- perseverance on common interests of the members;
- involving of quality mediators;
- reliance on entrepreneur leaders in common development projects (Langen, 2002).

The most often coordinated activities on the cluster level are:

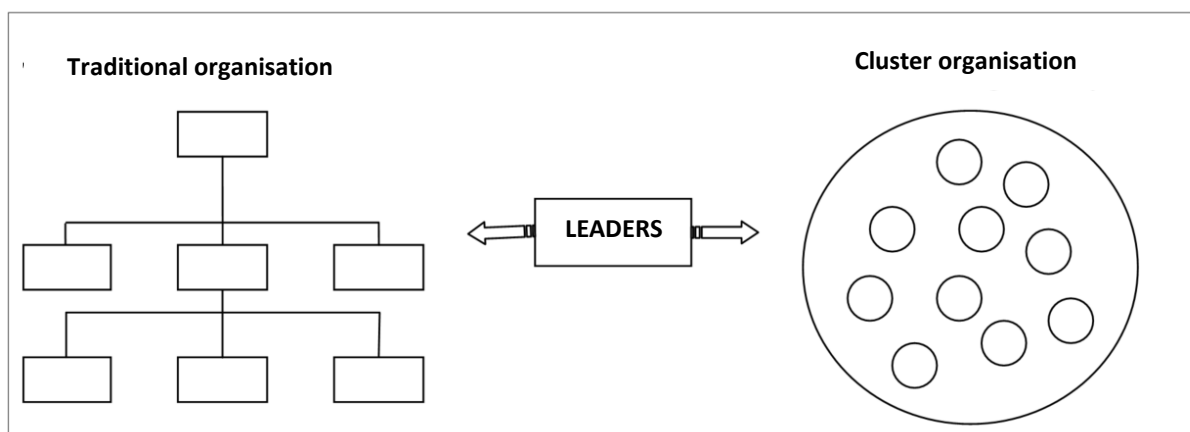
- market research and development;
- integrating offers;
- common supply of raw materials and reproductive materials;
- staff education;
- common forming of the market brand;
- common storage and transport;
- lobbying towards central and local state;
- the investment coordination of the private and public sector (European Commission, 2002.).

## 2.9. Cluster manager – cluster leader

The cluster manager is faced with the challenge to lead non-traditional organisations. Picture 3 is showing the difference between bureaucratic organisation and a cluster, it visualises why a

cluster leadership is different than a traditional management, and therefore it needs particular skills and roles. Namely, in a traditional organisation we can clearly see that it is a hierarchical organisation where the positions of particular employees are clearly defined, whereas in a cluster everybody are equal.

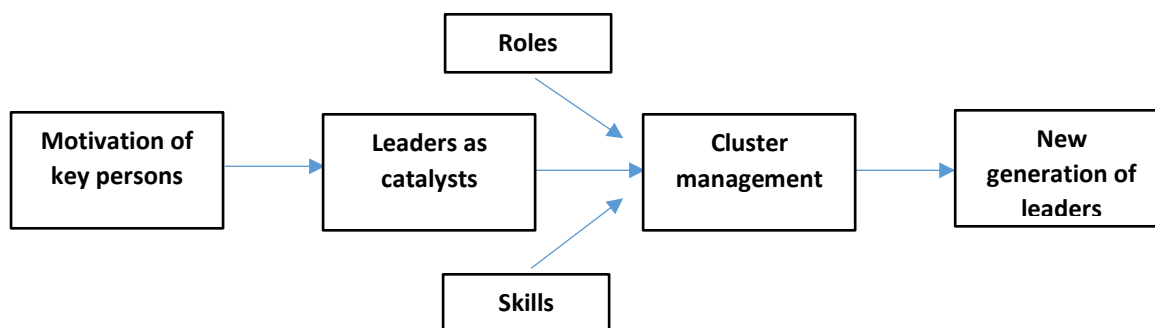
Picture 3 - Traditional organisation vs cluster organisation



Source: Brown, L. D.: *Development Partnership: Problem-Solving at Institutional Interfaces*. Paper presented at the American Society for Public Administration meeting: Boston, April 1987

Henton defines the leader as the centre of the economy community building process. Namely, leaders are connecting the community and the economic cluster, and are also called leader „civil entrepreneur“(Henton, 1997). As per the model of sustainable leader team, after the motivation of key persons and their involvement in the process, skills are adopted and roles of classic managers are conducted to develop the full potential of the leader team, apropos to create a generation of leaders. The leader team should act as a development catalyst, and not as a process administrator (Martinez, 1998).

Picture 4 Model of sustainable leader team



Source: Martinez, C.: *Industry clusters: Competitive Advantage through Innovation, Industry Clusters Studies Number 1, HURDO 1998, str. 40*

It's necessary to motivate the key people, to convey optimism and energy to them for the benefit of the cluster. Motivation can be made through an active and direct approach, analysis of common needs and desires, and organisation of a leader forum. The first step in motivation of the key persons is with an active and direct approach to develop trust inside the business

community, using the goals of the cluster for development of relationships of cooperation. By analysing the common needs and desires of the key companies, and their potential leaders, a strategy of the cluster will be developed in relationship to the connection with the aforesaid elements. As a final step in the motivation of the key persons there is the „forum of leaders“ where the main executive persons will discuss and analyse the advantages of the inclusion in the cluster leadership, on the basis of the represented strategy of the cluster and the relationship of the same with its current situation of key companies. Also, it's necessary to develop awareness about the importance of the leadership as an innovative process that will help in the development of the sustainable cluster (Martinez, 1998).

By definition of the OECD, a cluster manager is a person that organises the work, directs and insures its performance. He turns agreed jobs and development plans into practical jobs and development actions, communicates with the cluster members and with appropriate institutions in his environment. The cluster manager is a highly educated expert with experience, and he uses his coordination abilities especially well and successfully and he skilfully leads all the activities in the cluster (OECD, 2005).

In order to be operative, the cluster has to have a cluster manager responsible for managing the companies-members, and their mutually relations.

Tasks of the cluster manager are:

- promotion of the cluster concept;
- development of social relations;
- promotion of common projects (in financing, marketing, communication, logistic, IT, development of the distribution channel, international cooperation);
- stimulation of cooperation with ancillary institutions, educational and institutions for research and development;
- stimulation of education and training of the cluster, stimulation of the free flow of people, information, raw materials, products within the cluster and the cluster environment (OECD, 2005)

Considering all the previous definitions quoted by eminent experts, there could be made a conclusion the cluster manager is the main operative and coordinator, that direct and control all companies in the cluster, makes plan and activities for the cluster on a for all members in an appropriate way. He is responsible for trust building between the members. By hiring a professional cluster manager, the cluster becomes operative. The cluster manager manages the cluster on a transparently and an appropriate way. He takes care for the individual, but also the common interest of the cluster members.

### **3. LAUNCHING OF CLAUSTERISAZION IN CROATIA**

For cluster development in Croatia it's the priority to launch a development of new, creative abilities and to change the way of thinking and behaving of the cluster members. The potential areas for the cluster development should be analysed and the way of their development created, priority sectors and locations for development identified, and pilot projects based on the most successful experiences made. So to apply a successfully cluster policy, it's important that the clusters emerge in a dynamic local environment with a developed infrastructure, a good approach to man power, near to a university and research institutions, so the advantages of the local environment, that the competition won't be able easy to copy, will be used (Dragičević, Obadić, 2013.).

### **3.1. The role of the state in the cluster development**

The support of the cluster can be in the form of a law that stimulates the development of the cluster, tax relief and incentive resources, but also on other ways (forming of expert teams for help and survey of the clusters business activities, organisation of education employed in the cluster et cetera).

The state has the role to strengthen the already following clusters through the following steps:

1. research for the purpose of determination of the development level of the individually cluster;
2. establishment of needs;
3. creating measures for enhancement of the work of the cluster (Bošković, Jovanović, 2009.).

The role of the state in the cluster development would be removing of obstacles of the cluster development. It's in the states interest to stimulate the cluster development, because they increase export, bring foreign investors and on that way they create a stronger position for the country.

State support of the cluster development can be classified in three measure groups:

1. removal of restrictions and limitations;
2. finance relief;
3. support of the cluster development (Bošković, Jovanović, 2009.).

The policy of cluster forming is not an independent policy, but it relates on a set of politics that influence the cluster development (regional, industrial politics, policy of innovation stimulation). Some countries don't have structured policies of cluster forming, but they have developed policies that stimulate cluster forming. This is justified with the fact that many countries don't have a developed strategy of cluster forming. It is particularly needed to develop incentive policies of cluster forming in developing countries and in transition countries that are seeking their place on the international marker (Ketels, 2004.). Reasons for public acting for the sake of shaping cluster policies are coming from solving problems related to systematic irregularities from a network as a type of public acting. That enables a much broader identification of cluster policies tools. Based on a number of studies and schemes, policies are developed on a national, regional and cluster level (Obadić, 2013). States and regions in the world where the cluster concept is developed and often applied accomplish a significant economic growth, namely, not only companies that are cluster members are accomplishing, but also everyone connected with the cluster on that area. In regions where a cluster is built on the principles from bottom to the top, the state has the role to intervene and invest in the building of the cluster. The motivation of the state to invest in the clusterization in regions that have the potential for cluster development, is that the cluster influences the benefit of all participants, but also on the inhabitants on that area.

#### **3.1.1. Policy of cluster development in Europe**

European Union emphasises particularly clear attitudes about the importance of clusters in economic growth. Thanks to the exactly cluster development, many European regions have developed their comparative advantages in specialised products and services (Obadić, 2013). According to Roelandtu and den Hartog we distinguish four policy models or four different ways that governments in Europe use to make cluster policies. They are: national advantages, network model for small and middle companies, regional model of cluster development, and a research and industry relation model (Roelandt, denHartog, 1999).

Although the approaches and phases of each cluster policies in EU differ one from each other, each national policies share a certain number of key goals and characteristics:

1. cluster policies are seen as a means for promotion of economic development and structure changes, often through increasing of the innovative capacity;
2. the policies are based on aa enhanced business cooperation and networking, which can demand stimulations of society processes;
3. the policies also highlight the connecting of companies with the regional technological infrastructure of institutions for education, research and development, where knowledge stimulates the regional economy. Policies particularly strive to support new technologies for regional networks of small and middle companies and it means stimulation of regional innovation systems;
4. the policies emphasize the role of public or half-public organisations that have a middleman role in the stimulation of network development between companies and common projects. Especially in the early phase of the cluster building, the third party should take care of information flow, creating of mutual trust between the cluster members, as of the support of the organisations of business networks;
5. the policies emphasize also the need for improvement of the innovation abilities for knowledge managing in companies;
6. the basis of cluster policies is in the need to stimulate the creation of specialised factors and specialised knowledges, especially in regional clusters (European Commission, 2002.).

The European commission provides a political framework for actions of the cluster policy for the accomplishing of a greater level of excellence and openness of the cluster, and his framework in EU is made of:

- The European memorandum of clusters – represents an important step towards cluster stimulation;
- The European group for the creation of cluster policies – serves to help individual countries of the EU in cluster support;
- The European cluster alliance – serves to promote better communication;
- (Obadić, 2013.). The European Cluster Observatory – a service that informs companies about clusters (Obadić, 2013.).

The current role of the European Commission in the support of the development of strong clusters in Europe can be shown on the following way:

- First, refilling of the regional and national cluster policy by the continuation of removing obstacles that are emerging during sharing, investments and migration inside Europe. This is a key factor for the enhancement of economic activity, regarding that the cluster phenomenon depends on open competitiveness within the European regions. The implementation process of the unique European market is an adequate tool for the opening of the competitive market that allows resource removal, thus improving the patterns of geographic specialisation and clusterization.
- Second, to motivate and strengthen the regional and national cluster politics, by development and promotion of strategic approach to the cluster policy in Europe. The strengthening of cluster initiatives depends on the systematic approach and the approach based on cluster politics facts, including impact evaluation. In this regard many things are learned in the last few years and Europe has a chance to apply acquired experiences in new actions. Supporting the cluster is also a part of small and middle companies politics developed on the EU level.

- Third, supporting the creation of regional and national clusters by strengthening the knowledge basis in Europe and enable a better usage of research in innovative processes, new leading market initiative and programs of political cooperation. In addition, the commission has recently started with the initiation of politics that are directly related to clusters, to provide support to relevant programs and cluster initiatives that could be in the future additional adjusted with regional and national policies, on that way accomplishing the maximum of potential effects.
- Fourth, particularly stimulate the development cross-border clusters as well as the genesis and strengthening of strong European clusters through trans-European cluster policies. Sharing of strategic information is the key sign of successful cluster initiatives (European Commission, 2007.).

European initiatives should be, at their cluster support, complementary to national and regional efforts, so that the synergy is better used and the priorities of each country are better supported. On the other hand, regions and countries should use maximum the advantages of financial instruments available on the level of European Union, so they can strengthen their clusters and open them to transnational cooperation (European Commission, 2007.). The European Union gives its contribution to national and regional cluster policies and initiatives by removing of trade, investment and migration barriers, stimulating and strengthening regional and national cluster policies, and stimulating cross border interregional clusters (European Commission, 2007.).

### **3.1.2. Policy of cluster development in Croatia**

In its beginnings in Croatia, the cluster policy was a set of various attempts of policy creating with two famous approaches applicable also in the area of European cluster policies: the approach „from bottom to the top“ and „from top to the bottom“. Cluster initiatives were initiated by companies aspiring to realisation of a stronger cooperation and networking with regional partners (Dragičević, Obadić, 2013.). The world economic crisis left a trace on all countries of the world, thus also on the economic situation in Croatia. Companies are faced with many difficulties in business such as decline of export and the employment rate, the external debt is increasing, companies have lack of credit for development and investments in big development projects are disabled. As a form of development of economic subjects, clusters have to ensure such a development plan of the economic sector in Croatia that will be able to adapt in the ruling worlds understanding of the competitiveness of structures. That implies the application of a proper plan of restructuring in addition with developing of the models of cooperation between processes within the production network and services with infrastructural institutions and establishing of the vision, mission and goals of the industrial sector in Croatia (Horvat, Kovačević, 2004.). There is a difference between the European, national and regional cluster policies (Visuell, 2012). In whole Europe it is considered that the clusters are connected with prosperity, and the national initiatives for the strengthening of cluster development are directed towards: economic growth, bigger competitiveness, innovations and technology transfer and high-tech initiatives (European Commission, 2006.). With its cluster policy the Croatian government wants to strengthen the existing regional advantages, and with that also the competitiveness and innovativeness. Exactly because clusters have a very big impact on productivity growth, they are of great importance for the economic growth of Croatia. Some of the programs and initiatives for the strengthening of cluster development are:

- CIP – framework program for competitiveness and innovations. This program connects support with innovations, energy and informational and communicational technologies. Within its subprogram „Program for entrepreneurship and innovations“ which particularly supports small and middle companies, Croatia also participates with the project – „Enterprise Europe Network“ which runs the Croatian Economic Chamber.

- PRO\_INNO EUROPE – an initiative that has as its goal to become the centre for analysis and development of innovation, learning and development policies in Europe. This initiative is particularly directed towards small and middle companies that are established on knowledge such as towards that ones that represents the connection between industry and research. Within this initiate Croatia is participating as a partner in the project Cluster-Excellence.eu
- FP7 – a program that with finances supports activities in the area of research and development of almost all scientific disciplines.
- EUREKA – a program that in the long run supports strategic important industry initiatives. Its basic goal is strengthening of competitiveness of Europe by supporting companies, research centres and universities in their European projects (Croatia government, 2011.).

The time development of the cluster system in Croatia can be divided in a few phases:

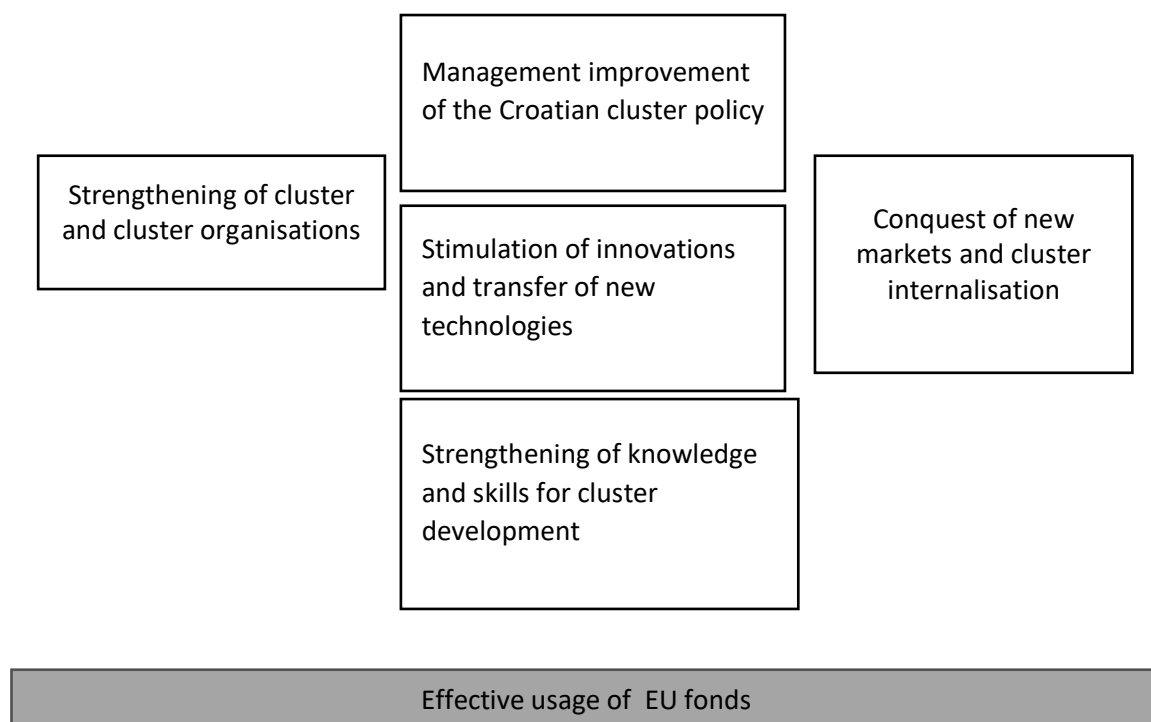
1. 2004.-2005. –the first cluster initiatives are emerging in HUP;
2. 2005.-2006. –the number of cluster initiatives is growing
3. 2006.-2007. - the number of initiatives of cluster development increased, the Ministry of Economy, Work and Entrepreneurship and the Croatian Export Offence start „Project Clusters“ – by joining to success, at the end of 2007 the statutory meeting of the Cluster Community took place in the Croatian Economic Chamber;
4. 2008. –the first meeting of Cluster Community Council took place at HGK;
5. 2010. –The following issues pointed out as the most important goals of the Cluster Community at HGK: support of existing and new clusters through education and other activities, cooperation with authorized bodys with whom there should be a good partnership, and the more intensive connecting with scientific institutions;
6. 2010.-2011.–On the invitation of the Ministry of Economy, Work and Entrepreneurship there were published public invitations financed by the European Union under the name „Support to the cluster development“; this year was the „Strategy of cluster development in Croatia 2001-2020“ adopted (Obadić, 2013).

Croatia has cluster development strategy until 2020 and the following project „Support to the cluster development 2011-2020“ as support for the realisation of this strategy. The general goals of the cluster development strategy in Croatia are structuring by management improving of the Croatian cluster policy, stimulating innovations and transfers of new technologies and strengthening of knowledge and skills for cluster development. The general goals are shown on picture 4.1 (Government of Croatia, 2011).

*Picture following on the next page*



Picture 6 General goals of the cluster development strategy in Croatia



Source: Government of Croatia, MINGORP, *cluster development strategy in Croatia 2011.-2020.*, Zagreb., 2011., page.12

The government of Croatia said in the strategy the Croatian policy will connect with the carrier of the cluster policy of EU, and define the appropriate measures for active participation in the programs of EU. In the measures is the mapping of the cluster particularly emphasized. Mapping of the cluster will be done for the purposes of improvement of the Croatian cluster policy management. The goal of the mapping is to provide an overview of the existing clusters and their mutual relations as a goal for defining of the appropriate future activities in the framework of the cluster development strategy (Government of Croatia, 2011). In view of the clusterisation, Croatia tries to follow the example of European more developed counties, nevertheless, it's clear that it cannot expect the same results as west-European countries. Here comes the role of the state, which needs to apply the cluster development strategy in cooperation with experts from various fields.

### 3.2. The impact cluster establishment on the development of economy and society

Clusters have an impact on the productivity growth. The contemporary competitiveness depends on productivity, and not anymore on the approach to inputs or the size of industrial companies. Productivity relies on the ways of competing, not on sectors, because the conventional paradigm of competitiveness has gradually moved from a centred business logic towards multiple industrial and economic interactions (Dragičević, 2012.). Clusters have a huge role as geographically concentrated competitive domains, where the common infrastructure, complementary expertize and business activities, and a sophisticated competition create synergy in the form of greater productivity, sharing of knowledge and innovative initiatives (Dragičević, 2012.).

As a result of growth of competitive economies, the governments of states have to use all their possibilities for the enhancement of the efficiency of their own economies. The impacts of cluster establishment on the development of the economy and society are:

- creating new local demands for equipment, food and other supplies with what speeds up the growth of the existing industries and the creation of new ones, revive business activities and new markets;
- growth of urbanisation through the continually growth of constructions and renovation of touristic capacities;
- help in the growth of profit of states that are necessary to developing countries for the reduction of deficit
- redistribution of capital between developed and developing countries;
- multiplication effects with the economy (Mathieson, Wall, 1982.).

The industry development in some region or country has a multiple development meaning. Namely, clusters doesn't only lead to incensement of competitiveness in some industry or region, but they also enhance employment, mutual trust of cluster participants and their social responsibility. The aforesaid is confirmed by experience, not only of developed countries, but also less developed and some post-transitional countries (Dragičević, 2012.). Dragičević particularly emphasizes that clusters are stimulating a new way of thinking about national, state and local economies and their development. They assume flexible strategies of companies, governments and the rest of institutions in increasing competitiveness (Dragičević, 2012). Clusters can indirectly influence the participative form of the development of some economy and society, for following reasons:

1. They enable participation – by the definition of creation and expansion, they represent active participation of all interested parties. By the basic assumption and determination, transformation of society assumes participation of all relevant participants of development and their partnership, and that should be on a consensus base. That means transparency, openness and participation of business, public and civil sector. Participation doesn't have a critical role only on creating of social capital, but also social involvement and cohesion. It is necessary for the strengthening of motivation and change of consciousness, which are presumptions of development as transformation of society (Stiglitz, 2002.).
2. They assume connection of strategies – in that sense, cluster assume a development strategy as transformation of society which also means that all development strategies of the private public and civil sector on the level of local communities regions and countries, have to be connected and complementary, but also consistent with the global environment that is constantly and linearly changing. Important is that mutual openness of the country is in the function of development as transformation of society, and not of the creation of a dual economy and society where can exist only individual projects stimulating development. Strategies should be more flexible „way-marks“ that create and change the participation of all parties interested in change.
3. They support the expansion of the existing and creation of new knowledge – as all countries have limited resources, it's important that the development strategy determines the priorities and order of changes and to define areas that are for some country a competitive advantage based on research of existing and possible clusters. Thereby it's important that the priorities become clusters sharing knowledge, and that the strategic managing of their development, which is complementary, is in the focus of implementation of strategies. Important are the elements of long-term focus on cluster and developing of social capital that is very valuable for the speed of the transformation of some economy and society.

4. Important form of development stimulation as public good – so that the social implementation of all interested parties in creating development strategies of the cluster will be based on trust, dialogue, participation and consensus, and the development become a public good (Dragičević, 2012).

Looking at all previous explanations of influences of cluster establishment on the economy and society it could be concluded that it has a great and positive effect. Cluster create a stronger economic position of the country, stimulate enhancement of export and increase competitiveness on the level of the entire economy.

### 3.3. Examples of successful clusters in the economy of Croatia

There are many factors that have an impact on the realisation of a successful cluster joining, in table 4 are shown the assumptions for a successful cluster joining. In table 4.1 it can be clearly seen that it is of exceptional importance to clearly define the goals of the very cluster existence, and to accomplish mutual trust between companies – members, while the member number in the cluster is not of critical importance.

Table 2 Assumptions for a successful cluster joining

| Factor                                                                  | Very important | Important | Neither import nor not important | Not important | Not important at all |
|-------------------------------------------------------------------------|----------------|-----------|----------------------------------|---------------|----------------------|
| <b>Clearly defined goals of the cluster</b>                             | 88,9%          | 11,1%     | 0,0%                             | 0,0%          | 0,0%                 |
| <b>mutual trust between companies – members</b>                         | 84,2%          | 15,8%     | 0,0%                             | 0,0%          | 0,0%                 |
| <b>full time employed cluster-manager</b>                               | 52,6%          | 31,6%     | 15,8%                            | 0,0%          | 0,0%                 |
| <b>Financial means necessary for the work of the cluster</b>            | 47,4%          | 52,6%     | 0,0%                             | 0,0%          | 0,0%                 |
| <b>Existence of a company that will be the cluster leader</b>           | 15,8%          | 15,8%     | 42,1%                            | 26,3%         | 0,0%                 |
| <b>Previous successful business of companies-members</b>                | 5,3%           | 63,2%     | 26,3%                            | 5,3%          | 0,0%                 |
| <b>Non-existence of competitive relations between companies-members</b> | 5,3%           | 31,6%     | 52,6%                            | 10,5%         | 0,0%                 |
| <b>The bigger number of companies-members</b>                           | 5,3%           | 31,6%     | 31,6%                            | 21,1%         | 10,5%                |

Source: BIOS, cluster in Croatia 2011.

Business joining in Croatia is developing significantly slower than in developed countries of EU. Analysts often allege as a cause for such a condition the political situation or the mind-set. In Croatia there is a large number of clusters on paper, that don't have any real projects. The governments on the state or local level sometimes perceive clusters as a solution for economic problems, however, they are only a means, a tool for the enhancement of competitiveness (Dragičević, Obadić, čl.br. 06-03, 2006.).

#### 1. BIOS cluster

According to the database about clusters in the world of the Institute for strategy and competitiveness, Business School Harvard, at MIT, 2004 was for the first time a cluster registered in Croatia, in BIOS from Osijek (Dragičević, 2012.). The idea of running a graphic cluster emerges in the middle of 2004 in the entrepreneur incubator BIOS in which are working four companies that are engaged in complementary graphics. A non-formal alliance of

companies was created in which on the beginning participated also an external partner. Their interest was a common appearance on the market and an offer of the entirely product on competitive prices on the local market (Dragičević, Obadić, 2013.).

BIOS cluster is geographical local/regional concentrated. After the initial period the need for further expansion of the products and services palette is noticed and the number of cluster doubled and expanded beyond the area of Osijek. Currently the graphic cluster BIOS consists of 10 members, and the work of the cluster is coordinated by the Entrepreneur Incubator BIOS. Some of the products and services of this cluster are a concept solution such as making of web pages, business web applications, making of the complete visual identity and book of standards, making of promotion materials, making CD-s, visit cards, analogue photography etc. The vision of the cluster is to become a recognizable supplier of quality graphic services. This cluster emerged and developed on the basis of the „from bottom to the top“ approach and it is one of a few in Croatia that developed on this way.

## 2. Cluster of shipbuilding.

Cluster of small shipbuilding originated in autumn 2007, when 21 Croatian shipbuilder, equipment manufacturers and material suppliers decided to join forces and create a cluster. The cluster was created with the combination of the approach „from bottom to the top“ and „from top to the bottom“ apropos on the initiative of the manufacturers of small ships in Croatia and the Croatian Export Offensive that was supported by the Government of Croatia, in fact MINGORP (Dragičević, Obadić, 2013.). The cluster of small shipbuilding is geographical nationally concentrated, and has a regional/global broadness of security chain, namely, it finds its buyers on foreign markets, especially in countries of the Middle East, Africa and EU. Initiators of the cluster establishment are the Ministry of Economy, Work and Entrepreneurship (MINGORP) and small entrepreneurs in the shipbuilding production. The reason for the creation of a cluster is a high share of import component and a low level of mutual cooperation. The goal of the cluster is in the next period to attract new members in the cluster regarding that in Croatia are working about 80 small shipbuilding and about 60 remount and service centres (Dragičević, 2012.).

## 3. Wood cluster of northwest Croatia

It was created in 2005, it was established by the most important wood processor of the region on the initiative of HGK – the County Chamber Varaždin. Geographical it is concentrated in the Varaždin County, and the broadness of its security chain is regional, national, but also global. The reason of creating it is the connecting of companies in the wood industry for the promotion, development and enhancement of the wood industry and the increase of competitiveness on the more and more demanding market. The main activities are focused on connecting and strengthening of the cooperation between all companies that are involved in the chain of the creation of additional values, close cooperation with educational, development and research institutions and connecting with state institutions and local management for the creation of the most possible favourably environment for the achievement of goals.

The wood cluster of northwest Croatia is one of the leading clusters of the promised future that is visible to the awareness of the members by the importance of knowledge, innovation, creativity and participation in scientific-research projects that are very important to this cluster (Dragičević, 2012.). In Croatia most of the clusters is created on the principle of the bottom up approach to cluster development. The running of a cluster in most cases are stimulating the very entrepreneurs, but often at the initiation the state is also giving its support. Regarding to its size, Croatia has a large number of founded clusters. However, only a small number of clusters in Croatia is doing business actively and is making profit. The entering of Croatia in the EU is

opening a path to new markets as to means from EU funds. If small entrepreneurs want to conquer new markets, they need an adequate amount which they can reach only by joining into clusters. There is a big potential for cluster opening in front of small and middle entrepreneurs, especially in areas of agriculture, wood industry, shipbuilding and IT industry.

#### **4. ANALYSIS OF CLUSTERIZATION IN CROATIA ON THE EXAMPLE OF THE "POLJOMECHANIZACIJA D.O.O." CLUSTER**

##### **4.1. Initiative for cluster creation**

The cluster poljomehanizacije d.o.o. began with its work at the end of 2006 under the name Croatian cluster poljomehanizacije under the operative leadership of HUP National Centre for Clusters, with the support of the Osječko-baranja County, City Osijek, European Commission and the Ministry of Economy, Work and Entrepreneurship. By the conclusion of the Trade Court in Osijek, from 14.July 2009, under the title Cluster poljomehanizacije d.o.o, with its headquarters in Osijek, the company was recorded in the court register. The initial initiative of the cluster was a combination of "bottom up" and „top down“ approaches and was directed on recognizing of the interests of business subjects and products that have a possibility for development and the production of agriculture mechanisation and its parts, as for domestic, so for the foreign market (<http://www.klaster-poljomehanizacije.hr/o-nama/> 20.08.2016.). The vision of Cluster poljomehanizacije is by the development of trust and mutual cooperation of all its members along with the strengthening of agriculture possibilities based on innovation, research and development to become the leaders of the production of agriculture mechanisation on the market of south eastern Europe, with the support of the institutions of the state of Croatia on the national and regional level. The mission of Cluster poljomehanizacije is to achieve a profitable growth through the production of innovative, high quality and specialized products of agriculture mechanisation and equipment as services in the function of sustainable and ecological approach to agricultural production. Through a positive usage of a synergistic effect as with a better economic usage with all production resources and with the rationalisation and specialisation of the production the efficiency and productivity will increase, which will finally result with bigger satisfaction of the customers (<http://www.klaster-poljomehanizacije.hr/o-nama/misija-i-vizija/> 20.08.2016.). The cluster was created in April 2007, and by 2009 it managed to increase and connect all its members (Dragičević, Obadić, 2013.). Cluster poljomehanizacije is one of the first clusters in Croatia and in only two years it managed to gather all its members. It aspires to achieve a competitive advantage not only on the domestic, but also on the foreign market, and it is focused on export increase. Cluster poljomehanizacije was organised as an industrial cluster, and it gathers the most outstanding manufacturers of agriculture mechanisation in Croatia.

##### **4.2. Participants of the cluster**

During the forming of HKP contact is made with 81 companies and 2 scientific institutions from which entirely 42 companies signed intention letters for approaching to the clusters, and the biggest number of companies comes from the county of Osijek-baranja. The cluster members in this period are employing altogether 3.843 labourers.

(<http://www.klaster-poljomehanizacije.hr/clanice/> 20.08.2016.)

The founders of Cluster poljomehanizacije d.o.o. are:

(<http://www.klaster-poljomehanizacije.hr/clanice/> 20.08.2016.)

- OLT d.d.
- Standard MIO d.o.o. (Eurometal d.o.o.)
- Hittner d.o.o.
- Gramip-TPS d.o.o.

- POD d.o.o.
- Hidraulika-Kutina d.o.o.
- Pecka d.o.o.
- Labinprogres-TPS d.o.o.

Except the mentioned companies, the cluster consists also of societies, scientific institutions and institutions for entrepreneurship and innovation promotion, so that the cluster in this moment counts, through contracts about permanent consortium, as through contracts about business cooperation, altogether 23 members. Companies that signed the contract about permanent consortium – joined members (<http://www.klaster-poljomehanizacije.hr/clanice/20.08.2016.>) are:

- Potens d.o.o.
- Solus d.o.o.
- B.M.V. Metal d.o.o.
- Same Deutz-Fahr Žetelice d.o.o.
- Agroservis proizvodnja d.o.o.
- Tofrado d.o.o.
- TANG Tvornica alata d.o.o.
- Strojarstvo Čalopek
- Megametal
- Leško d.o.o.
- Stijeg d.o.o.
- Čipčić d.o.o.
- Metalac CO
- Mario-Laser d.o.o.

The cluster integrates manufacturers of agriculture mechanisation from whole Croatia, it includes in itself also supporting institutions, and as a result of investing in export stimulation, it pledges for connecting of clusters not only with partners in the country but also abroad. The strategic buyers of the clusters are (<http://www.klaster-poljomehanizacije.hr/o-nama/poslovi/20.08.2016.>):

- industrial-agricultural combinatory;
- family agricultural economies;
- buyers of agricultural mechanisation from the weekend-program and the hobby-program;
- Foreign buyers – export of agricultural mechanisation on the European market, with a focus on markets of countries from close environments (market of south eastern Europe), such as the market of north Africa, Russia and USA.

#### **4.3. Basic products of clusters**

In Cluster poljomehanizacije are a few companies acting that are for years representing themselves as manufacturers of professional and hobby equipment – agricultural mechanisation, machines and gadgets for agricultural production: ploughs, sowing machines, harrows, spreader of mineral fertilizer, sprayers and cultivators – and all to manufacturers of agricultural tractors and combine harvester. There are also a few manufacturers of machines and gadgets from the so called weekend-programs. Moreover, a good part of the companies has big capacities for making of tools and machine processing of metals for iron casting and the production of various kinds of castings for various programs – from shipbuilding and car industry to utility programs and common goods. A number of companies is doing service jobs with finished products for established world brands such as Honda, Bertolini, YAMA, MTD

(<http://www.klaster-poljomehanizacije.hr/o-nama/> 20.08.2016.) With the process of business networking within clusters mutual relations are built on the principles of cooperation and establishing cooperative relations in the making of certain final products, mutual cooperation on the program of casting of various casts, machine processing of metals, making of various tools, springs and cogs and services of painting, heating processing etc. (<http://www.klaster-poljomehanizacije.hr/o-nama/poslovi/> 20.08.2016.).

#### **4.4. Cluster activities**

Cluster poljomehanizacije is doing market analysis and its internationalisation, it participates in the making of European projects and development prototype products and cooperates with colleges and schools for cluster development. In the beginning its activities went in three directions (<http://www.klaster-poljomehanizacije.hr/o-nama/aktivnosti/> 2008. 2016):

1. Activities directed towards market efficiency of the members of the Cluster poljomehanizacije:

- reducing of input expenses of raw materials and help materials;
- enhancement and finding of new possibilities of selling on the market;
- initial steps in the establishment of higher forms of business cooperation and foreign partners;
- creating of marketing conception of common appearance on the market

2. Activities directed towards improvement of internal processes of KP and its members:

- the synthesis and analysis overall data;
- directing of the members towards international standards of quality ISO 9001:2000
- making of strategic plan of cluster initiatives, defining the vision, mission and operative plans;
- qualification of cluster manager and cluster team;
- Enforcement of further activities in the building of the cluster.

3. Activities directed towards internationalisation and international cooperation of KP:

- development and internationalisation of KP;
- connecting and cooperation with compatible EU clusters through strategic partnership in the framework of the project HUP NCK INNO-Nets within the main EU innovation platform PRO INO EUROPE;
- Education about important activities of the cluster development process.

#### **4.5. Advantages and disadvantages of Cluster poljomehanizacije d.o.o.**

Cluster poljomehanizacije is organized as an industrial cluster, and it gathers the most successful manufacturers of agricultural mechanisation on the area of Croatia. The cluster is doing well in business already 10 years and from year to year it achieves better and better results. Cluster poljomehanizacije d.o.o. gathers the most relevant manufacturers of agricultural mechanisation in Croatia. It's of an open type for further joining, with the goal of implementing innovative solutions, investing in research and development of production and strengthening of competitiveness. The cluster was twice, 2011 and 2015, proclaimed the most successful cluster in Croatia from the government of Croatia and the Ministry of Economics (<http://www.agroklub.com/partner/klaster-poljomehanizacije-d-o-o/3700/> 30.08.2016.). A big advantage of a cluster is that the management is aware of the importance of conquering of new markets and buyers. The engagement of the cluster in this regard is visible through a number of appearances on the most prestige fairs of agricultural mechanisation that enables the cluster members getting in contact with existing and potential buyers. Among them the most outstanding are the fairs Agritechnica in Hanover, where the cluster exhibited more times on its own exhibit space, as well as the fair EIMA in Bologna, and SIAM in Maroko. Fairs of that

type that are very specialized for agricultural mechanisation are very important in the enhancement of visibility of every relevant manufacturer of mechanisation, and on a long run it contributes for sure to the increase of the selling and export. Through often representing by its members of their products and services on the most famous world fairs, on various cluster conferences and forums, Cluster poljomehanizacije turned into a recognizable brand on the domestic, but also on the foreign market. To participate on such big, expensive and demanding fairs, Cluster poljomehanizacije and its members need financial support. Expenses of exposure on fairs potentially could have caused problems to the cluster, and disabled the appearance on the same, however, the potential of Cluster poljomehanizacije was recognized and they got the needed financial support from the Croatian Economic Chamber, Ministry of Economics and the Ministry of entrepreneurship and trade. The result of international activities has for its consequence the export of cluster members of even 70% of its production. With the entering of Croatia in the EU, new markets are opening, but also the approach to resources from structural funds. For getting resources from EU funds, the Strategy for cluster development in Croatia will be of great help, as a kind of ticket for EU funds, because without such a kind of support it's impossible to plan and to get resources. Cluster poljomehanizacije achieves on various applications successfully support from EU, which is just another mark of successful business of the same cluster. On the very development beginning of Cluster poljomehanizacije, the resources were get on the application of the European Commission through the project Pro Inno Europe CEE Network. Moreover, through the project "Cluster development Program" the means for the integral education program are achieved, namely management of Cluster poljomehanizacije invests much in the education of its members, that refers to the improvement of knowledge of the management and namely prior in the segment of selling negotiation skills, as in communicational and presentational skills. The cluster members headed by the leading management emphasise on investment in new skills and knowledge, in marketing activities with the goal to strengthen competitiveness and recognisability of the cluster, as well as on development and procurement of new technologies that lead to the improvement of products, production and creation of new values. The headmaster of the cluster, Željko Erkapić, puts a big accent exactly on the expansion of the cluster on new markets and internationalisation of business making. The two most important things on what is the business of the cluster directed are the production and export. About the success of the cluster also speaks the fact that the cluster members did found their place on many foreign markets, among other on the African market. The European Commission also recognized what great efforts the cluster members are putting in the concentration and increase of competitiveness, so they become also ambassadors of the European Commission. Another advantage of cluster poljomehanizacije is also the supplying of members with useful program packages, so they could on a better way network and be compatible. Such program packages speed up the production process in the way that they adjust the needed time for designing, and with precise calculation of usefulness the waste gets reduced. It's hard to speak about the flaws of Cluster poljomehanizacije, because with its great engagement on various fairs, focus on production and export, trust between members, mutual cooperation, investing in the education of members, on a good cluster leader, it bypassed all the potential consequences and flaws of cluster forming. However, the biggest problem of Cluster poljomehanizacije is the fact that with earlier bad politics, cooperative movement was destroyed as a form of rational and economic business. It's a fact that there are cases of irrational buying of various agricultural machines, that are not used to a proper extend, as well as the usage of outdated, almost forgotten machines. In that part there are significant improvements possible and the agricultural mechanisation as an important factor of successful agriculture would significantly contribute to the efficiency and enhancement of the production (<http://www.agroklub.com/tekstovi/partner/klaster-poljomehanizacije-d-o-o-3700/> 29.08.2016.).



The biggest flaw in Croatia, as the youngest country and country in transition, concerning clusterization, is distrust among entrepreneurs that are entering into the cluster, that are in the same time competitive to each other. The strategy of cluster development has to be based on solving the mentioned issue. As another critical problem there is also a deficit of cluster managers, because of lack of adequate education of entrepreneurs.

## 5. CONCLUSION

The market globalisation forced small and middle companies to take additional measures to keep their place, their share on the market. So companies, for a big concentration of related companies on one place, are using the concept of clusterization, they joining into a strategic alliance so they could on that way overcome the mentioned situation on the market. We are defining clusters as a geographical concentration mutual connected, related companies, they are characterized connection of companies within a cluster through various mutual business relations, but also geographical concentration of connected companies. Joining into clusters represents a successful way of overcoming challenges, with which are small and middle entrepreneurs of contemporary globalisation processes faced. The key element of a cluster is common acting and it includes the transfer of knowledge, technology, skills, information and ideas that have a positive impact on the creation of innovative environments and achieving competitive advantages.

States and regions in the world in what the cluster concept is developed and often applied, achieve also a significant economic growth. The motivation of a state to invest in clusterization in regions that have potential for cluster development, is a positive impact of the cluster on the benefit of all participants, but also inhabitants on that area. In Croatia there is noticed an increase of numbers of clusters, and with the strategy for cluster development, the intention of the state to involve more seriously in the process of the cluster creation is thereby additionally confirmed. The clusterization in Croatia is stimulated because of the positive consequences that such joining of entrepreneurs brings. It increases export and the entire competitiveness on the international market. Regarding clusters in Croatia, Cluster poljomehanizacije particularly pointed out, and it is on the XV. National counselling about economics and entrepreneurship pronounced the most successful in Croatia in the category of clusters. On the example of Cluster poljomehanizacije d.o.o. there are clearly shown all advantages of joining into a cluster, and this leads us to the growth, not only of involved companies, but also the whole environment.

Clusters create a strong economic position of the country, stimulate increase of export and improve competitiveness on the level of the whole economy.

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## DEVELOPMENT OF SUSTAINABLE CONSUMPTION THROUGH CONSUMER EDUCATION

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### ABSTRACT

*In the article, we have analyzed recent findings on issues like ethical consumption and consumer education. Although, these are discussed very often in foreign journals, very little is known in Slovakia. We really lack relevant information on family consumption habits and patterns. Thus, it could be perceived as a good starting point for our future research on consumer education in order to develop sound consumption habits and sustainable consumption. Foreign researches proved, that the excessive consumption is becoming a serious problem. Consumer education might be a partial solution, which could help to develop better consumer competencies and increase a consumer literacy not only for children, but also for their parents and elderly people, who are not experienced enough to resist modern marketing tools.*

**Keywords:** *Consumer education, consumerism, ethical consumption*

### 1. INTRODUCTION

The child recipient is nowadays exposed to an unprecedented variety of marketing stimuli; marketers themselves stress the importance of building up their relations with the child recipient from the earliest periods of its development. Since their psychic and mental development is not yet complete, children are prone to be influenced by a manifold of marketing forces (Wilcox, et al., 2004). The family could play the role of a positive contra force in this respect; however, parents often lack skills and experience in guiding their children to adopt reasonable consumer habits. An alternative solution of the problem could be the so-called consumer education enabling the parties involved to become familiar with company practices. The main aim of such education should be the endeavor to change existent consumer habits and attitudes as well as to raise awareness of the problem since these goals are crucial for assisting children in learning how to live in the materialistic and consumption-directed society of today.

### 2. CHILDREN AND MARKETING

The issue is not unknown in the world today. Children marketing witnessed intensive development especially as a follow-up of the emergence of the first modern mass media (Cook, 2004). What marketing practices often rely on is the motif of children being misunderstood by adults; and, thus, these practices tend to portray children as autonomous and mature beings (Buckingham, 2000). In this respect, one may encounter two distinct opinions: one group of authors questions the idea of negative effects of marketing on children (Hastings, et al., 2006) despite the fact that there is empirical evidence supporting the existence of such correlation (Gambaro, 2011). Some research findings point to a relation between children marketing and a growing rate of obesity in children (Shaw, 2009) as well as to a connection between children marketing and children violence (Wilcox, et al., 2004). The reasons stem from an excessive marketing pressure put on the child recipient (Wilcox, et al., 2004).

There are three reasons why companies direct their marketing campaigns toward children (Shaw, 2009):

1. Children and young adults (up to 18 years of age) are a profit-yielding source of financial resources (pocket money, short-term jobs in case of older children) (Scragg, et al., 2002 cited in Shaw, 2009),
2. Children influence shopping practices of their parents to a significant extent (Buckingham, 2007),
3. Children and young adults will eventually turn into consumers; they are important for brand awareness and loyalty as well as for strategic investments,

Child consumers efficiently influence consumer decision-making in the family (Benn, 2004). The US advertising market aimed at the child recipient reaches 15-17 billion US dollars (Linn, 2004; Lagorio, 2007). According to other research findings, children spend from 15-thousand to 18-thousand hours per year in front the TV set while at school they spend only approximately 12-thousand hours (Bagdikian, 2004). At present, Internet proves to be an efficient and sophisticated tool of children marketing (Shaw, 2009; Gambaro, 2011), especially by means of the so-called stealth marketing (Gambaro, 2011). Its development is interconnected with the development of social networks. The ability of stealth marketing to exert a significant influence on children stems from its capability to carry out communication in such a way that it has the character of an entertainment (Calvert, 2008). As Gambaro (2011) asserts, the company-child relationship is disproportionate due to the dichotomy between vast company resources and a relatively low ability of children to protect themselves from the activities of the company. In spite of the tendency to derogate a negative impact of marketing on the child recipient (Hansen, et al., 2002), research findings point to the gravity of the problem, which requires urgent measures to be taken.

### **3. EDUCATION AND LEARNING DIRECTED TOWARDS MARKETING**

Education and learning are essential processes that significantly influence an individual's perception of the world. They include a number of procedures which result in building up one's experience (Čáp, 1997, cited in Vysekalová, et al., 2012). One might often come across the term of the so-called "formal education" which is set at school within the triangle including the pupil – the student – the learning material (Benn, 2002). As far as the current processes of consumer decision-making are concerned, they most often relate to a "non-formal form of learning" which resembles personal experience or transfer of behavior models in the family environment, from friends or other reference groups. Nowadays, parents spend little time with their children and they compensate for this lack of time by buying goods (Buckingham, 2007). Learning and subsequent formation of consumer habits and models should start with parents who form children through their own example. Sonia Livingstone (2006) claims that parents often cannot keep pace with their children as far as the new media are concerned. Children try to adapt their consumer behavior to their surroundings and, thus, to lessen the risk of social exclusion, mental, or physical harm (Kotler, Keller, 2007). Learning process is an important psychological factor in consumer decision-making. In other words, consumer decision-making is the result of one's learning in the process of acquiring new consumer experience. Describing this process of learning as a whole is not easy but one might suppose that it results in the changes of the consumer's behavior.

*Consumer education and consumer literacy*

New marketing practices and tools represent a challenge not only for producers but also for consumers who are not able to evaluate all offers on the market in a rational way; especially in case of new marketing tools which blur the border between marketing and entertainment (Buckingham, 2007; Gambaro, 2011). What proves to be the side effect of the liberalization of the market is the problem associated with the state legislature that does not discuss these areas of consumer protection (Buckingham, 2007). Therefore, it is important to support other forms of initiatives – media education, financial literacy, or consumer education – so as to enhance public awareness of these issues. Consumer education can be defined as a process of developing and enhancing knowledge and skills that help us make sufficiently informed and pre-thought decisions which apart from one's own profit and needs take into account also social values and needs of the whole society (Anon., 2009). The result of this process is an educated student who acts as a sensible and thoughtful consumer (Benn, 2004). In contemporary postmodern world, consumption has become a way of self-expression and development of one's own identity. Consumer education predominantly deals with the following three areas – household management, household economics and education (Benn, 2002). It also includes such aspects as raising awareness of consumer rights, personal finances and sustainable consumption (Anon., 2009), which is a long-term and permanent process. According to OECD, consumer education is most often realized by means of (Anon., 2009) formal education (educational institutions), specialized courses (courses, training), and within non-educational institutions (through discussions). Regardless of the form, it is a lifelong process; therefore, it needs to be continually adjusted so that consumer education would reflect the changing media and marketing environment. Apart from OECD, there are other organizations concerned with defining consumer education, such as UNESCO, EU, or UNEP (United Nations Environment Program). European Union included consumer education in the field of consumer protection (Anon., 1997) which defines consumer education as the right of the European consumer. EU should contribute to enhancing the protection of health, safety, consumers' economic rights, their access to information; as well as guarantee the consumers' right to organize themselves in order to protect their interests (Anon., 2012).

Consumer education includes such activities that aim at acquiring skills and understanding necessary for everyday life (Langrehr, Mason, 1977); the consumer should maximize his satisfaction by relying on his own resources and means. Education should result in sustainable behavior and raising awareness of one's own consumer behavior. EU created a module of consumer education which should assist in forming a critical and analytical attitude towards consumption (McGregor, 2005). Should the consumer education be successfully integrated into the education process, the result will be an informed consumer (Keller, 2007) who will potentially represent a challenge for traditionally operating companies based on old marketing models. Simultaneously, this consumer might create new, more effective possibilities for companies willing to accept innovative marketing approaches. A similar concept relates to a so-called strong consumer who is able to make rational decisions as he has access to relevant information (McGregor, 2005). The subjects which to a significant extent support the development of informed consumers include:

*Government and government institutions*

Strong consumers use available information and competitive market while acting as educated, well-informed, self-confident, and assertive individuals who rely mainly on themselves. They can clearly express their needs and defend these needs in everyday consumer situations. Government and corresponding government institutions should create favorable conditions for the development and support of educated and self-reliant consumers. In the world, it is possible

to pinpoint quite a few governments which are directly involved in supporting consumers in their efforts for “consumer emancipation”; though, it needs to be mentioned that sometimes such efforts receive a lot of negative criticism from the business sector. Governments either create or they participate in forming specialized committees and bodies whose aim is to change consumer behavior, especially in such spheres as raising financial awareness and literacy or warning against dangerous products by means of rapid alert systems (Trade Inspection, veterinary administration, etc.)

#### *Sector entities and institutions*

At present, the business sector is becoming aware of the growing consumer power (McGregor, 2005), which is regarded as an important market factor (Kotler, Keller, 2007). Contemporary consumers are confident that the real power is in their hands. The key factor of consumer decision-making is the ability to use relevant information. Literature on the subject defines this type of consumer as “powersumer” – an expression which points to a high negotiating power of the consumer. This power relates especially to the capability of drawing information from various sources, combining and using it as the foundation of one’s decision-making. One of the tasks of consumer education is to teach the consumer on how to deal with a flood of information and products available. From a historical perspective, the contemporary consumer is in a completely new situation; he needs specific instructions for faster orientation. Therefore, relevant institutions are beginning to evaluate activities of the business sector regarding its ethical and moral values (Takala, 1991, cited in Uusitalo, Oksanen, 2004).

#### *Institutions carrying out consumer education*

This category also includes organizations, institutions, or movements whose aim is to enhance consumer education and to raise awareness of key issues related to consumer practices. From the perspective of their type and character, they may exist in various forms and structures. In respect with the relation to the consumer, they act as information providers or advisory bodies that try to facilitate consumer orientation in current challenging and often non-transparent market conditions. Well-informed and smart consumers demonstrate the following types of behavior and shifts in understanding their own consumer status (Freire, 1968, cited in McGregor, 2005):

- They are aware of the fact that someone else controls them or their situation; that their access to sources is limited. Therefore, they might feel helpless and act suspiciously.
- They analyze their situation so as to discover the limiting forces, including their inner feelings (prejudice, lack of skills).
- They face the questions which emerge from their critical evaluation because they are looking for answers to long-term and unsolved presuppositions.
- They perceive the world in a critical way and pose questions that would foster concealed values.
- They discuss with others so as to learn how their contemporaries view similar problems.
- They ask: “What am I going to do right now? What steps am I going to take so as to identify hidden problems?”

The characteristic feature of the consumer formed in such a way is a very reserved and careful attitude towards marketing activities of the company. Another author uses the term of a so-called “smart consumer” who is in comparison with the consumer mentioned above more engaged, more informed; who takes initiative, and assumes responsibility for his own consumption (Keller, 2007; Kotler & Keller, 2007).

#### 4. CONSUMERISM AND CONSUMER SOCIETY

Although existent efforts towards ethical consumption seem to be a natural way of development, the situation in reality is different (Uusitalo, Oksanen, 2004). At present, we see a permanent increase of consumption in all areas of existence. Consumerism has become due to social changes on the level of the whole society a global, universal and unifying movement (Benn, 2004); the movement which also encompasses young people. Consumer society draws on four paradigms: consumer independence, power of producers, a balanced position of both sides, and ethical actions of both sides which are guided by the principle of goodness in their actions (Benn, 2002). Consumption tends to be reflected on two levels – sociological and psychological; consumer education should affect both levels bringing about positive changes in one's behavior in the form of careful thinking, acting, and the ability to manage household (Benn, 2002). In contrast to the past, contemporary consumer is surrounded by a multiplicity of products and services (Clow, Baack, 2008). Thus, the world today creates an illusion of choice; however, a variety of authors claim that we have entered an era of a "risky society" (Beck, 1992), which the consumer finds hard to deal with.

#### 5. ETHICAL AND SUSTAINABLE CONSUMPTION

The concept of sustainable consumption is a part of the issue of sustainability which is a current challenge of the society as a whole. The main goal is to adjust our consumption in such a way that it would not negatively affect future generations (Džupina, 2013). Both corporations and consumers carry responsibility for the whole society (Uusitalo, Oksanen, 2004). The model of sustainability is efficient enough for initializing changes in the society as a whole (Reid, 2005). Literature related to the field distinguishes several principles of sustainability (Hugé, Waas, 2011). In relation to the consumer, it is important to realize that the consumer is in his decision-making guided by his attitudes and norms – normative principle (Robinson, 2004). For the purposes of sustainable society, which is to a significant extent influenced by the consumption, it is important to follow the principle of justice – the intergenerational, geographic, procedural justice and interspecies justice (Hugé, Waas, 2011). Sustainability appeals to meeting both present and future needs (Gibson et al., 2005, cited in Hugé, Waas, 2011). Last but not least, it is important to become aware of the high dynamics of social changes and mutual interactions in the society (Hodge & Hardy, 1997, cited in Hugé, Waas, 2011). John Elkington (1999), the founder of the concept of "triple bottom line", discusses the notion of sustainability in current society. It is the consumer who may play an important role in this context. Ethical consumption is a symbolic consumption through which the consumer positively directs ethical behavior of corporations (Uusitalo, Oksanen, 2004). This idea builds on the concept of the so-called CnSR (consumer social responsibility) (Morrison, Bridwell, 2011), which views the consumer as an important factor and initiator of changes related to the behavior of market operators. Ethical approach, which is often misunderstood, expects a higher effort and personal engagement of the consumer (Devinney, et al., 2010). One often encounters only declarative responsibility for following ethical principles as far as the consumer's choice is concerned (Burns, 1995, cited in Bird, Hughes, 1997). Regarding their ethical attitude, consumers can be divided into the following categories (Bird, Hughes, 1997):

1. Ethical consumers
  - They are primarily motivated by their attitudes towards ethics.
  - They are willing to exchange the advantages of particular products (brands) for a feeling of satisfaction.
  - They are willing to pay higher prices and to contribute to charity.
2. Semi-ethical consumers

- They are primarily motivated by the perceived quality of the products and the status which a certain brand guarantees.
  - They view the advertised brands with suspicion but they are open to being persuaded.
3. Selfish consumers
- The most important factors related to their decision-making are quality or price.
  - They take a skeptical attitude toward social engagement.

Despite a relatively sufficient amount of available information related to negative effects of their own actions on the society and their surroundings, contemporary consumers often fail to make ethical decisions (Devinney, et al., 2010).

## 6. CONCLUSION

From a practical perspective and with regard to present needs and requirements, it is of high necessity to understand consumer education in a broader sense; the sense which is not solely individual or household-limited. Consumer education, as we understand it, should be concerned with issues that cross the boundaries of an individual consumer and his needs by taking into account the whole history of a certain product (Benn, 2002) or service; conditions under which a particular product was manufactured or produced. Thus, consumer education would also include education toward sustainable consumption. On an academic level, one can meet several approaches that have been elaborated in order to foster consumer education. These approaches are reflected in an image of a stronger and more confident consumer and a more permanent sustainable consumption (McGregor, 2005; Sandlin, 2004; Flowers, et al., 2005).

*Table1: Four types of consumer education and the respective consumer formed by each type.*

| 1. Consumer information, protection and defense                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fundamentals of consumer education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Type of consumer formed by such education                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• to learn how to deal with the challenges of the consumer world and how to make better decisions;</li> <li>• to gain access to information,</li> <li>• to become aware of one's rights and responsibilities;</li> <li>• to acquire particular technical skills (related to budget, interests, etc.);</li> <li>• to prevent market malpractices;</li> <li>• to become aware of the principles related to consumer protection;</li> <li>• to defend the consumer and bring about necessary remedies.</li> </ul> | <ul style="list-style-type: none"> <li>• The consumption is good and natural.</li> <li>• The consumer must participate in the consumer society.</li> <li>• The consumer views consumption as a means of his own development and realization.</li> <li>• The consumer identifies success with money, prestige, accumulation of material goods, and brands.</li> </ul>                                                       |
| 2. Individual criticism for one's own interest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fundamentals of consumer education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Type of consumer formed by such education                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• to learn how to answer the question of "what role does consumption play in my life?";</li> <li>• this question leads to changing one's consumer schemes and lifestyle.</li> </ul>                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• The consumer focuses on his personal interests.</li> <li>• The consumer is only beginning to pose questions regarding consumer society.</li> <li>• The consumer acts on an individual basis so as to facilitate his lifestyle.</li> <li>• The consumer is too busy so as to perceive existing problems related to the dichotomy between market forces and consumerism.</li> </ul> |



| 3. Critical approach for one's own interest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fundamentals of consumer education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Type of consumer formed by such education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• to teach people on how to take a critical attitude towards their role of the consumer;</li> <li>• to become critical in terms of our consumption.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Some people turn into ethical, green or anti-consumers.</li> <li>• They are aware of the degree of influence and power associated with consumption.</li> <li>• They do not accept consumerism as a natural part of human life.</li> <li>• They perceive consumer society in an ironic way as a means of fight against consumerism and consumer society.</li> <li>• They try to distract everyday consumer lifestyle (by pinpointing its negative aspects).</li> <li>• Their main effort is to become free from the market influence.</li> </ul> |
| 4. Strengthening common interests                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fundamentals of consumer education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Type of consumer formed by such education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• It moves type 3 consumers even further on the scale from personal to common interests.</li> <li>• It tries to seek inner strength and potential in other people.</li> <li>• It teaches people on how to apply pressure on contemporary global, national, and local systems.</li> <li>• It helps people to think outside their personal sphere toward general and common interests.</li> <li>• It extends the notion of learning by its social and human dimension.</li> <li>• It shows that we have a potential to create a more authentic culture.</li> </ul> | <ul style="list-style-type: none"> <li>• These consumers view themselves primarily as citizens, only afterwards as consumers.</li> <li>• They have discovered their inner strength and potential to create a better world.</li> <li>• They are not afraid to change the system rather than people and their lifestyles.</li> <li>• They have acquired a holistic view of the world.</li> <li>• They know that a strong consumer lays the foundations of sustainable consumption.</li> <li>• Their value system is deeply-rooted and helps them protect their whole life.</li> </ul>      |

(Source: McGregor, 2005; Sandlin, 2004; Flowers, et al., 2005)

The aforementioned types of consumer education and their respective consumer groups may be regarded as potential instructions to follow so as to use consumer education more efficiently; to bring about permanent changes in the consumer behavior; and to reach a higher level of consumer sustainability. However, it is still necessary to identify all important measures to take so that we were able to positively influence the consumer in such a way that he would begin to “require” that his rights were observed and that he would adopt more responsible behavior models by applying pressure on enterprises and producers. What seems to be a suitable starting point is elaborating the concept of consumer education which should bring about a sort of “consumer enlightenment” by means of exerting influence on young consumers, child consumers, but also on parents who are often unable to sufficiently affect the process of building up rational consumer habits. Despite continuously changing social conditions which support the role of consumerism as an effective element of socialization and raising awareness especially in case of young people, it is necessary to guide people towards sustainable and ethical consumption which will eventually apply significant pressure on corporate subjects. Because family environment often lacks competence in forming consumer behavior, it is important to consider the possibility, even necessity, to elaborate the concept of purposeful consumer education which has the potential to positively influence key areas related to consumer world.

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## **DETERMINANTS OF THE SOCIAL NETWORKING USE WITHIN THE TECHNOLOGY-ORGANIZATION-ENVIRONMENT FRAMEWORK: ACROSS INDUSTRY SECTOR**

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### **ABSTRACT**

*The main goal of the paper is to measure the influence of technical, organizational and environmental factors on the degree of social network usage in Montenegrin companies. The conceptual model is based on a Technology-Organization-Environment (TOE) framework. The data was analyzed applying regression models for each industry sector of Montenegrin companies. The results revealed substantial variation of the significance ratio of the observed technical, organizational, institutional and environmental factors across industries. The results of this research can be a useful input for managers and ICT policy makers in opportunities and barriers analysis, for a more successful approach to social networks. In other words, the results of this research can be helpful in better understanding of the factors which have the greatest influence in a specific industry. Also, the systematization of the offered characteristics of these three factor categories can be used for future research.*

**Keywords:** *Social media, Social networking, TOE*

### **1. INTRODUCTION**

From the moment it was realized that social networks were not only instruments for individual social interactions but also instruments for carrying out business activities, the number of studies on their commercial use and their business potential has been on the rise. However, regardless of the growing awareness of this issue, the degree of use of social networks in companies in developing countries is still far lower than that in companies in more developed market economies.

*These differences are not only from an economic standpoint, but they also concern political, environmental and social as well as cultural factors (Rahayu and Day, 2015, pp.142-150). In this regard, the authors felt that it would be useful to conduct a study in order to identify and understand the factors which determine the degree of use of social networks.*

Since the aim of the research was to examine to what extent technical, organizational and environmental factors influence the degree of use of social networks, a *Technology-Organization-Environment (TOE) framework* was used to identify factors from these groups, whereas a multiple regression analysis was employed to measure the differences in the significance of these factors in certain industries.

Since the studies conducted so far have shown that the specificities of industries are often more relevant than the specificities of the country where a study is conducted (Oliveira and Martins, 2010, pp. 1337-1354; Lin and Lin, 2008, pp. 135-145), the authors conducted a study for companies from five more ICT-intensive economic industries (commerce, tourism, telecommunications, banking and finances, and the public sector). The survey was conducted for companies from Montenegro.

Thanks to the results of this survey, employees in the marketing sector can obtain information where to focus efforts so as to achieve a greater use of these technologies and how to promote this concept among employees, other stakeholders and the general public. Furthermore, the offered systematization of criteria may be useful for future research on higher degree of use of social networks in companies.

The paper is structured as follows: in the next section, reference is made to the results of previous research on this subject, as well as the literature which spurred this study. The third section outlines the theoretical development which includes the conceptual model and the research question. In this section the authors outline the research methodology i.e. data collection and sample, measures and instrument validation. In the fourth section the results of the study are presented, and then discussed. The paper ends with concluding remarks and a reference to the implications and limitations of the present study and offers recommendations for future studies in this field.

## 2. RELATED WORKS

An increased demand for social interactions online and an ever greater use of all the more up-to-date tools for activities of current and potential users have been accompanied by a growing body of research on social networks.

By studying the available literature it can be concluded that there is no consensus as to its definition, as there is no singular research focus.

In the pioneering papers on this subject, social networks were observed as an instrument for building social capital among users (Resnick, 2001, pp. 647-672), some time later as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd and Ellison, 2007, pp. 210-230) and, as of late, social networks have growingly been regarded as commercial platforms (See-To and Ho, 2014, pp. 182-189; Leonardi et. al., 2013, pp. 1-19; Edosomwan et. al., 2011, pp. 79-91).

In terms of the degree of acceptance and use of these technologies two lines of research have developed: one in the domain of individual acceptance (Cheung and Lee, 2010, pp. 24-30; Jackson and Wang, 2013, pp. 910-921; Bolton et al., 2013, pp. 245-267; Park et al., 2014, pp. 138-146; Sang et al., 2015, pp. 333-343) and the other in the domain of acceptance and use by companies (Trainor et al., 2014, pp. 1201-1208; Perrigot et. al., 2012, pp. 539-565; Sarosa, 2012, pp. 244-254 ). After reviewing the available literature it is easy to conclude that the number of studies for companies is much smaller than the number of studies for individuals.

Reviewing the studies on the acceptance of this concept by companies it can be concluded that they are focused on either specific social networks (Cheung and Lee 2010, pp 24-30; Skeels and Grudin 2009, pp. 95-104) or only some aspects of the existing networks (Heller and Parasnis, 2011, pp. 30-37; Subramani and Rajagopalan, 2003, pp. 300-307). In other words, there is a lack of comprehensive studies covering a larger number of social networks and all aspects of commercial presentation on them. It is in this research gap that the authors have found the motive for this research.

Studies conducted so far on ICT adoption and use were based on various theoretical approaches and models. (Ngai et al., 2015, pp. 33-44) The TOE framework for studying the impact of the

technological, organizational and environmental factors on the acceptance and use of social networks is supported by the fact that the use of social media is enabled by the development of Internet technology, that it requires organizational capacity such as human resources, ability to learn and knowledge management, and that it can be shaped by the incentives and pressures of the environment.

### 3. RESEARCH METHODOLOGY, STUDY QUESTIONS AND, SELECTION CRITERIA

In accordance with the aim of the study, the authors of this paper sought a response to the basic research question: Is the degree of use of social networks to the same extent affected by technical, organizational and environmental factors, irrespective of the industry to which a company belongs?

In order to obtain the answer to this question, the authors used the TOE framework and on the basis of it, they defined 11 independent variables from the domain of technical, organizational and environmental factors. The conceptual model is presented in Figure 1.

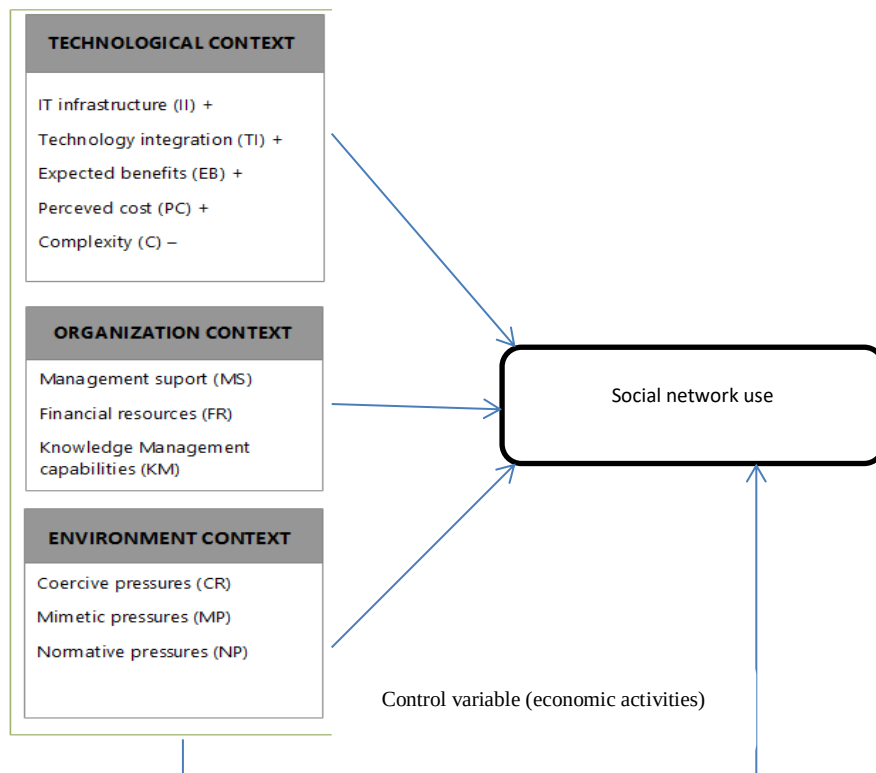


Figure 1: The conceptual model

In order to answer the research question the authors developed a survey for companies which belong to the ICT-intensive industries and operate on the territory of Montenegro. The data collected from ICT and marketing experts from 203 companies were used in the research. A pilot survey, which was aimed at investigating the content validity of the survey was carried out in Montenegro by 11 ICT and marketing professionals. Their suggestions and proposals were used to develop the final form of the survey. The survey featured 29 questions and to define them the authors used 11 criteria which covered technical, organizational and environmental factors of the basic TOE framework.

In addition to these 29 questions, the survey contained one question regarding the industry to which the company belongs. A 7-point Likert scale was used to assess the effects of the defined factors on the use of social networks.

The survey lasted 60 days and out of 1000 surveys sent, 405 were returned fully completed from 203 companies.

The control variable in this study is industry. Individually or as part of a group of control variables, it has already been used in studies on the subject of acceptance and use of ICT (Oliveira and Martins 2010, pp. 1337-1354; Ifinedo, 2011, pp. 255-281).

To determine and analyze the difference in the impact of the proposed factors, a multiple regression analysis was employed.

The information on the size of the samples, the coefficient of determination, standard error estimates, and an F-test (statistics and probability test) are offered in Table 1.

#### 4. RESULTS AND DISCUSSION

An analysis of the impact of all the factors across the total sample (a regression model across all companies) is summarized in Table 3. This analysis showed that the impact of all three groups of factors on the degree of use of social networks is statistically significant. From the obtained results we can see that technical factors exert the greatest influence, which is followed by environmental factors, whereas the smallest impact is that of organizational factors.

The obtained results were to be expected because the analysis conducted so far have already shown that the influence of technical factors is not the same in different stages of acceptance and diffusion of a system. Therefore, having in mind the results obtained in other studies (Martin et al., 2016, pp. 19-33; Zhu et al., 2006, pp. 1557-1576), the authors hypothesized that the degree of significance of technical factors will be the greatest since Montenegrin companies (as compared to companies in developed market economies) are mainly in the initial stages of the use of social networks. This means that an appropriate ICT platform and ICT expertise are at this moment the most crucial factors and that each of the following steps in the use of social networks will mostly involve access and a routine use of the system.

The fact that the impact of environmental factors is greater than that of organizational factors confirms that information about favorable outcomes of using ICT solutions for others often encourages companies to resort to the same technology or to follow the good practice of other companies (Martins et al., 2016, pp. 19-33). It is obvious that companies which use social networks have the need to be accepted from others on the one hand, and on the other, by using the system to create and ensure a favorable impression on the environment.

Although not in accordance with earlier results (Chong and Chan, 2012, pp. 8645-8654), the findings that organizational factors have the least significance seem at this point quite logical. The awareness of the benefits of presentation on social networks is in Montenegrin companies still low and this especially applies to the awareness of the necessary organizational and management adaptations and input-output relationship in terms of online presentation.

Given that the entire sample was incomparably higher than the samples stratified by industry, it was thus more representative for the analysis and showed a statistical significance of all the estimated coefficients in this model.

A comparison of the degree of influence of the factors analyzed by industry is presented in Table 2. The results show that technical factors exert the most significant influence on the use of social networks and this applies especially to companies from the area of finances and insurance. Previous research in this field has also shown that every online service must be accompanied by investments in ICT infrastructure and ICT integration (Zhu et al., 2006, pp. 1557-1576). The finding that the role of the available ICT infrastructure in providing online financial services is significantly greater than that of the very organizational characteristics of a company corroborates some previous findings (Osman and Dawson, 2007, pp. 184-204), because the financial sector is considered to be the most ICT-intensive industry (Zhu et al., 2006, pp. 1557-1576), as they offer more electronic and fewer traditional services. Environmental factors have a statistically significant impact on the degree of the use of social

networks in state bodies and institutions. This impact is, however, negative, which is a major disturbing factor. None of the groups of factors has a statistically significant impact on the degree of use of social networks in companies in the field of telecommunications and commerce. It is possible that no single factor by itself has a significant impact, but that when they interact with each other it might contribute to different results.

Table 1: Measures of the significance of the regression models for the analyzed industries

| Industries                                | Number of data | R square | Std. Error of the Estimate | F test (ANOVA) | Sig. |
|-------------------------------------------|----------------|----------|----------------------------|----------------|------|
| <b>(F) Finances &amp; Insurance</b>       | 57             | .631     | .31259                     | 30.212         | .000 |
| <b>(T) Telecommunications</b>             | 132            | .030     | .56565                     | 1.342          | .264 |
| <b>(SB) State bodies and Institutions</b> | 46             | .122     | .40673                     | 1.944          | .137 |
| <b>(TO) Tourism</b>                       | 118            | .058     | .73725                     | 2.330          | .078 |
| <b>(C) Commerce</b>                       | 52             | .069     | .53916                     | 1.178          | .328 |

Table 2. Assessment of the significance of the regression models for the five industries

| Industry                                  | Model                | Unstandardized Coefficients |              | T             | Sig.        |
|-------------------------------------------|----------------------|-----------------------------|--------------|---------------|-------------|
|                                           |                      | B                           | Std. Error   |               |             |
| <b>(F) Finances &amp; Insurance</b>       | (Constant)           | -5.449                      | -3.043       | -3.043        | .004        |
|                                           | <b>Technical</b>     | <b>1.298</b>                | <b>9.406</b> | <b>9.406</b>  | <b>.000</b> |
|                                           | Organizational       | .378                        | 1.454        | 1.454         | .152        |
|                                           | Environmental        | .109                        | .531         | .531          | .598        |
| <b>(T) Telecommunications</b>             | (Constant)           | 4.753                       | 1.750        | 2.716         | .008        |
|                                           | Technical            | -.263                       | .175         | -1.499        | .136        |
|                                           | Organizational       | .348                        | .246         | 1.415         | .160        |
|                                           | Environmental        | .017                        | .221         | .078          | .938        |
| <b>(SB) State bodies and Institutions</b> | (Constant)           | 5.936                       | 2.176        | 2.728         | .009        |
|                                           | Technical            | -.026                       | .215         | -.121         | .904        |
|                                           | Organizational       | .115                        | .263         | .438          | .664        |
|                                           | <b>Environmental</b> | <b>-.666</b>                | <b>.286</b>  | <b>-2.333</b> | <b>.025</b> |
| <b>(TO) Tourism</b>                       | (Constant)           | -.996                       | 2.457        | -.405         | .686        |
|                                           | <b>Technical</b>     | <b>.599</b>                 | <b>.259</b>  | <b>2.317</b>  | <b>.022</b> |
|                                           | Organizational       | .357                        | .353         | 1.012         | .314        |
|                                           | Environmental        | -.411                       | .279         | -1.473        | .143        |
| <b>(C) Commerce</b>                       | (Constant)           | 5.058                       | 2.715        | 1.863         | .069        |
|                                           | Technical            | .189                        | .231         | .820          | .416        |
|                                           | Organizational       | -.390                       | .403         | -.967         | .339        |
|                                           | Environmental        | -.415                       | .327         | -1.269        | .210        |



*Table 3. Assessment of the regression model for all companies*

| Model                 | Unstandardized Coefficients |              | Standardized Coefficients | T             | Sig.        |
|-----------------------|-----------------------------|--------------|---------------------------|---------------|-------------|
|                       | B                           | Std. Error   | Beta                      |               |             |
| <b>(Constant)</b>     | <b>-3.240</b>               | <b>1.193</b> |                           | <b>-2.716</b> | <b>.007</b> |
| <b>Technical</b>      | <b>1.209</b>                | <b>.116</b>  | <b>.405</b>               | <b>10.412</b> | <b>.000</b> |
| <b>Organizational</b> | <b>-.757</b>                | <b>.104</b>  | <b>-.370</b>              | <b>-7.261</b> | <b>.000</b> |
| <b>Environmental</b>  | <b>.600</b>                 | <b>.159</b>  | <b>.191</b>               | <b>3.764</b>  | <b>.000</b> |

## 5. CONCLUSION

The paper shows that, at present, there is a significant impact of all the analyzed factors on all companies, among which technical factors stand out as the ones exerting the greatest influence. They are followed by environmental factors, while the impact of the organizational factors is the smallest. In addition, the analysis has shown that the measure of the impact of the individually observed determinants varies depending on the industry to which a company belongs. The highest impact of technical factors was recorded in the area of finances. This means that the greatest demand for quality ICT infrastructure, ICT expertise, and ICT integration exists in this sector. This factor is statistically important, although to a lesser extent, in the tourism sector, which suggests that the degree of information intensity of a sector is proportional to the importance of technical factors and that in these industries initiatives for better change management and adjustments to digital economics should be accompanied by investment in technical factors. Furthermore, the study has shown that there is little impact of organizational factors in all companies, which is logical because the impacts of organizational and technical factors in the domain of ICT adoption are always on the opposite sides of the spectrum. In other words, there is a lower impact of organizational factors where there is a greater influence of technical factors and vice versa. This is why managers can make fine adjustments and influence one group of factors if at the moment the other group cannot be influenced. Moreover, the study has shown that for some industries, factors observed individually have no significant impact, which leads us to the conclusion that there must exist their interactive effect, which is to be recognized. Thus, by influencing one group of factors the significance of the influence of another group could be reduced. The measure of the interactive influence could be the subject of a future study on this topic. In practice, the obtained results can be used as guidelines when making decisions about the use of social networks, when deciding on investments in ICT infrastructure and ICT integration, when making decisions about the allocation and the dynamics of the allocation of human and financial resources and so on. In theory, these results extend the body of empirical research on the use of social networks and contribute to the discussion on factors influencing their use. It also confirms the empirical significance of the theoretical frameworks based on technical, organizational and environmental factors. However, the study has several limitations and it is in these limitations that one can find opportunities which might open the door to future studies. This study was conducted on a small sample from one country. It would be interesting to carry out a study for a larger number of companies and observe the differences between information intensive and information non-intensive industries. It would also be interesting to discover the interactive and combined effects of these factors instead of observing their individual impact.

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## **FLEXIBILITY AS AN IMPORTANT TOOL FOR SOLVING PROBLEMS OF LABOR MARKETS**

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### **ABSTRACT**

*At the beginning of the 1990s, the European labour markets were often criticised for being too rigid. A higher degree of flexibility was seen as a condition for rising of the growth, productivity and the enablement of the reallocation of jobs towards developing sectors with positive macroeconomic effects manifested by the growth in employment. Globalisation, technological change, demographic development, new information and communication technologies as well as large-scale social changes are generally considered to be the factors that explain the need to implement labour market reforms in the European Union. Since the early 1990s, increased flexibility of the labour market has become a part of the OECD recommendations concerning its strategy of employment growth. Flexibilization of labour markets is one of the key objectives for EU countries on the national and international level in the European Employment Strategy. The use of various measures for a more flexible labour market is considered to be an integral part of the modernization of labour markets, which effectively contribute to solving the current problems, with an emphasis on disadvantaged groups in the labour market. Flexicurity, as a strategy with the aim of jointly enhancing flexibility and security for the benefit of both parties in an employment relationship, was identified as one of the key objectives in advancing European labour markets in the context of the European Employment and the Lisbon Strategy. Adaptation to the changing conditions requires a flexible labour market combined with a certain level of security, which suits both employees and employers. Overall, the effects of globalisation show an increasing tendency of strengthening the flexicurity phenomenon for all workers in the EU, and this is also due to the sustainability of social protection systems. The contribution aims to identify the importance of flexibility including its various forms, as well as the importance of flexicurity of European labour markets within the context of ongoing changes in society.*

**Keywords:** *Flexibility, Flexicurity, Forms of flexibility, Globalisation, Labour market*

### **1. INTRODUCTION**

The actual development in the labour market is related to the need of the growth of employment and in connection with that the European union puts emphasis on enhancing of flexibility of the labour market at the national as well as international level within the European Employment Strategy. Labour market flexibility is considered as an effective way for reduction of unemployment. In the process of globalisation and constantly growing innovation, there is increasing the need for faster adaptability to new conditions in labour markets. Labour market players must constantly adapt to changes, change established working processes and increase qualification. Innovative forms of employment are becoming an increasingly actual issue. New trends of changing lifestyle are connected with the need to reconcile working and private life, what increases an interest in flexible employment. Labour market flexibility gives enterprises the opportunity for easier recruitment and dismissals of employees. In this context, there are

new demands on creation of legislation, which would prevent abuse of flexible forms of employment by an employer as well as employee. The key priorities include finding a balance between flexibility and security of the labour market. With increasing flexibility in the labour market, there is expanding rationalisation of work and we move to reflective modernity. There is created a space for non-standard employment and flexibility. The end of the 20th century was characteristic by a transition to flexible, decentralized and pluralised employment, which is significantly different from the original employment (Beck, 2000, p. 29).

## **2. FLEXIBILITY – THE CURRENT TREND IN LABOUR MARKETS**

In the process of globalisation and knowledge economy, the EU countries have to cope with radical changes and various obstacles in the labour market. The main obstacles, especially in the new EU countries, include low employment rates together with low participation of women and older people in the labour market, significant regional differences, the underdeveloped services sector and long-term structural unemployment (LISABON EUROPEAN COUNCIL, 2000). In recent years, the employment and social situation in the EU have slowly improved, differences in economic development among the EU member countries have reduced, but many other differences among them still persist. With gradual abating of crisis signs and reviving of economy, the unemployment rate in the EU has been decreasing since 2013 and the employment rate has been increasing. However, it is still necessary to continue with reforms to support inclusive, functioning and dynamic labour markets. The need is to create such an environment that would stimulate the growth of employment and create a positive environment for formation of quality work places. The tool, which should help to decrease unemployment, is flexibility of workforce. The result is higher adaptability of employees in the labour market, an increase of their qualification and knowledge and thus an increased possibility to succeed in the labour market. The European Employment Strategy promotes increasing of flexibility of working time as one of the main tools for the growth of employment. To increase competitiveness of enterprises, it is necessary to create an environment, in which they would be able to flexibly respond to changes in demand, adapt to new technologies and innovations. For beginning of the first half of the 21st century, the EU has already set itself the objective to create the most competitive and the most dynamic economy in the world. It should be based mainly on knowledge, provide more working opportunities and greater social cohesion, which is able to achieve sustainable economic development. Flexibility should help to eliminate differences between demand and supply in the labour market. It should contribute to decreasing of unemployment, increasing of employment and also to reduction of demands on social security. Possible solutions of the unemployment issue can include fixed-term contracts, enabling new conditions of recruitment and dismissal of workforce for employers and employees. Another option is to lease employees for a fixed period from an agency according to a real need and their flexible working time. The economic theory gives us many definitions of the term labour market flexibility. This term is most often explained as flexibility and speed of adaptation of the labour market to conditions (Standing, 1999, p. 49). The terms rigidity and stiffness are opposites of flexibility. They cause insufficient adaptation of companies to work supply, which is one of the main reasons of unemployment. As flexibility is beneficial in conditions of globalisation and increasing of competitiveness, it brings also negative effects for employees, i.e. fear of job loss or insecurity. In literature, we meet with various divisions of labour market flexibility. There have been identified six categories of flexibility and recommendations concerning:

- labour costs,
- work conditions,
- work procedures,

- rules and regulations,
- workforce mobility,
- education and professional training (Brodsky, 1994).

Another division of flexibility, with which we encounter the most often in literature, is the division according to Guy Standing (Standing, 1999, p. 99). The author divided flexibility into organizational flexibility, flexibility of labour costs, flexibility of wages, functional flexibility, numerical flexibility and flexibility of occupational structure.

The tools that are used for increasing of labour market flexibility include various forms of flexible employment. Flexible forms of employment are often connected with numerical and functional flexibility. Numerical flexibility is connected with the regulation of number of employees, usage of external resources such as agency employment, especially in order to easily decrease and increase number of employed people. In some countries, its scope is defined by rights of employees and collective bargaining. At the same time, it expresses the ability of employees to adapt to quick changes in the field of innovations. Functional flexibility is based on flexible working time and work contracts (Bellan & Olšovská, 2012).

In the second half of the 20th century, the classical model of employment became a thing of the past. Until that time, mainly a man was a bread-winner, who worked full-time, at a specific location, in dedicated working time and mostly in one enterprise for his whole life. The new model of employment and modernisation of the European labour market brought flexibility of employment relationships and other new flexible forms. New employment relationships simplify reconciliation of work and personal life. This modernisation did not bring only positive changes but also many negatives. They include an increase of unemployment, insecurity in the labour market but also in employment, when employees have no job security and stability for future, they cannot use employment benefits, they have insufficient social protection and so on.

Flexible forms of employment can be also considered as atypical forms. The reason is that they differ from classical (standard) forms. Specifically, from full-time work and permanent work with specifically defined working hours and the assumption of long-term employment. Atypical forms of employment do not meet quantitative standards defining a secure work place (ACTRAV, 2011, p. 3).

Temporary work also exposes employees to social insecurity, it limits their financial activities related to a longer time horizon. The problem of social insecurity stems from work legislation, which insufficiently adapts to newly formed conditions (ACTRAV, 2011, p. 3).

Flexibility can be described as a bilateral term, because on one hand, there is positive flexibility and on the other hand, there is negative flexibility. Its positive aspects stem mostly from harmonisation of professional, private and family life. Negative flexibility completely disregards requirements of an employee. An employer determines conditions regardless of private duties of an employee (Dudová & Vohlídalová, 2008, p. 19).

In the process of globalisation and increasing competitiveness, there have been introduced new methods of production and the organization of work has changed. These changes include new flexible forms of employment and changes in working time. New forms were an important part of adaptation to new requirements of the labour market. On the other hand, atypical forms of employment were not formed only due to changes in an enterprise, but they were also based on the initiative of employees, who cannot or do not want to work full-time.

In order to view "absolute" differences of atypical and classical employments, we can further show the division of atypical and very atypical forms of work. The very atypical forms of employment, according to the European survey of work conditions, can include:

- fixed-term contracts, which are shorter than 6 months or employment without a formal employment contract based only on a verbal agreement,
- part-time contracts, working time of which is defined for less than 10 hours a week,
- zero hours – employment contracts for no hours worked,
- call work – when an employee waits until he/she is called to work,
- any other forms of employment that are considered as very atypical (Eurofound, 2010).

In consideration of new atypical forms of employment in the EU member countries, it is necessary to take into consideration also specific conditions in the labour market of individual countries. Flexible forms of employment have been used for longer time in southern European countries, therefore, these countries should be an inspiration for those countries that have less experience with flexible forms. Every EU member country uses minimally one form of atypical form of employment, which is characteristic for it (Bellan & Olšovská, 2012).

### **3. PROTECTION OF EMPLOYEES**

The basic pillar of the EU in the renewed social agenda is the social dimension. To successfully achieve social objectives, it is necessary to actively apply tools of social policy. Social policy is not unified for all member countries and thus tools of social policy only support and complete individual social policy. By the influence of globalisation, it is necessary to define the concept of flexicurity for all employees in labour markets of the EU. The concept of flexicurity supports sustainability of systems of social protection. It is based on: modern social security, which protects employees in case of adverse life events, in case of unemployment and at the same time it supports employment; on active policy of labour market, which supports the transition between individual work places and helps players in the labour market to adjust to changes; on modern work tools and tools for increasing of lifelong learning, which will support employment (European Parliament, 2007).

The concept of flexicurity addresses needs of support of employees, faster adaptation to innovations and creation of new work places. Furthermore, it is important to ensure finding of a work place without problems for all people who want to work. It is important to take all age groups of population into account in order to give them the opportunity of career in any phase of active life.

It is necessary to build flexible labour market together with the degree of certainty corresponding to needs of companies and employees. Preventive measures avoiding the formation of social risks can include an increase of the educational level of inhabitants of the EU and supporting of stable employment. In the process of flexibilization of labour market, employees need in particular job security. In the past, it was about the security of keeping a work place, what is impossible under current conditions, because most work places are limited in time and at the same time there is significantly decreasing a number of employees who work at one work place for the whole life (Rievajová, 2009, p. 231).

The flexicurity policy solves three basic pillars: labour market flexibility, labour-law relationships and social security. Flexicurity represents the synergy of conflicting terms flexibility and security in the labour market. It is about security for employees and flexibility for employers. On one hand, security lies in securing of employees in case of unemployment –

by adequate unemployment benefits. On the other hand, flexibility of employees lies in additional knowledge, either through retraining or lifelong learning. Job seekers with higher education are more successful in the labour market and they can find a suitable work position in the labour market easier.

The presence of flexicurity in individual countries can be found based on seven indicators, which significantly affect flexibility of the labour market:

- the level of legislative protection of a work place – it influences external flexibility,
- the level of work intensity – it influences internal flexibility,
- irregularity of working time, flexible forms of working time – they influence internal flexibility,
- the level of employee autonomy and complexity of his/her tasks at work – the indicator of functional flexibility,
- the level of team work and fluctuation of work places – the indicator of functional flexibility,
- the proportion of people in educational programs and trainings – the indicator of measures of lifelong learning,
- the percentage of GDP, which is spent on these measures (European Parliament, 2007).

*Table 1 Political tools of flexicurity*

| Political tool       | Legislative protection of work places                                                                                                | Social policy                                                                                                                                             | Active employment policy and the system of lifelong learning                                                                                                     |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field of flexibility | Collective bargaining on the level of flexibility, decreasing of the amount of severance and shortening of the notice period         | Reducing the number of early retirements, variability of options for retirement, shortening of the period of receiving of unemployment benefits           | Stricter rights and obligations of unemployed, subsidies in case of active approach to education, development of activating, motivating and educational elements |
| Field of security    | Increasing of the rate of protection measures for new flexible forms of employment, collective bargaining on the level of protection | Parental leave schemes, support from the state in case of long-term unemployment and for economically inactive people at the level of subsistence minimum | Existence and availability of lifelong learning, support of small and middle-sized enterprises in providing of education, emphasis on activation measures        |

Source: Eamest 2007

#### **4. APPLICATION OF THE CONCEPT OF FLEXICURITY WITH AN EMPHASIS ON LIFELONG LEARNING**

The concept of flexicurity cannot be applied in all EU countries uniformly, with respect to history and dynamics of social protection systems. The concept of flexicurity was initially built as an institutional model in Denmark and Nordic countries. Based on the original concept, flexicurity implies a formalized and permanent agreements between the state, trade unions,



enterprises and employees. The concept of flexicurity takes its own framework in every member country. It is applied at two levels – microlevel and macrolevel. In regions, organizations and enterprises, it acts at the microlevel. At the macrolevel, it affects economic policy, educational policy and employment policy. Flexicurity must be applicable in every EU country within institutional conditions. Countries such as Belgium, France, the Netherlands and Germany introduce a set of innovative tools, which increase flexicurity at the microlevel. Impacts of individual tools are experimentally verified in selected regions. Certain tools are applicable also in other member countries, however, it is necessary to adjust them to institutional conditions of a particular country. The tools, from the perspective of lifelong learning, include: professional social security, interim employment and competence management, individual leave and the right for education and training, the association of employers for inclusion and qualification. One of the conditions for the functioning concept of flexicurity is the participation in lifelong learning. The condition is based on experience of Nordic countries, where the concept of flexicurity was formed. In conditions of the Slovak republic, it is necessary to create space for implementation and increasing of the participation in lifelong learning of all age groups. The concept of education should lead to acquisition of new competences and qualification. An increase of participation in lifelong learning should contribute to decreasing of long-term unemployment. It is necessary to change the whole educational system so that secondary vocational school and universities would come up with suggestions how to increase education of adults. For more effective functioning of the concept of flexicurity, it is necessary that society accepts a certain level of insecurity in the labour market. The condition of this lies in setting of the amount of unemployment benefits at such a level that would remove uncertainty in case of unemployment, but at the same time restrict undesired lengthening of the unemployment period. The system of lifelong learning should be continuously adjusted to the needs of the labour market. Another need arising from the existing system of education is to systematically link monitoring of results of formal and informal education in the context of lifelong learning, focused mainly on extending and acquiring of new qualifications. Fulfilment of the Strategy of lifelong learning and lifelong consulting would contribute to solving of insufficient connection between formal and informal education. The policy of lifelong learning should put the main emphasis on individuals with insufficient qualification and without qualification (Dudová, 2008, p. 135).

## 5. CONCLUSION

The last global crisis has shown that labour market flexibility may be one of the main tools for maintaining of employment during economic downturn. The use of flexible forms of working time during the recession helped enterprises to increase competitiveness and flexibility in the labour market. Enterprises could easily adapt to reduced demand and avoid layoffs of employees. Demand reduction often led to partial reduction of productivity, but flexible forms of employment helped to maintain employment and skills. Costs of maintaining of work places were generally lower than costs for unemployment benefits. The European Employment Strategy continues to point out increasing of flexibility and implementation of the concept of lifelong learning. Increasing of labour market flexibility could lead to uncertain working conditions, which are not covered by existing legislative norms of the system of social security and protection of employees. Therefore, the concept of flexicurity tries to reach the synergy between flexibility and flexicurity in the labour market. Many EU member countries with large imbalances and segmented labour markets introduced measures for modernisation of legislation and protection of employees.

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## PUBLIC DEBT AND ECONOMIC GROWTH IN THE PHILIPPINES: EVIDENCE OF CAUSALITY

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### ABSTRACT

*The 10-point socioeconomic agenda of the newly elected government in the Philippines calls for a massive increase in infrastructure spending over the next few years in order to plug the gap in infrastructure investments, provide a more equitable access to basic infrastructure services, and to propel the economy into a higher economic growth path. The capital expenditure expansion will be funded in part by increased public debt, prompting the government to raise the annual budget deficit ceiling to three percent of GDP. With this development, this paper examines the long run and causal relationship between economic growth and public debt in the Philippines so as to better assess the potential impact of the recent policy initiative. Time series data from 1986 to 2015 were analyzed using the ADF unit root test, Johansen co-integration test, vector error correction model (VECM), and Granger causality technique. The study reveals that there is a long run equilibrium relationship between economic growth, domestic debt and external debt. In particular, external debt has a statistically significant positive impact on economic growth, whereas domestic debt has a statistically significant negative impact on growth in the long run. However, in the short run, only external debt Granger-causes economic growth, indicating a unidirectional causality. There is likewise no significant short run causal relationship between domestic debt and real GDP for both directions. These findings bolster the need for government to continue implementing sound fiscal and prudent debt management policies in order to maximize the positive impact of external debt on economic performance and to mitigate as well the possible adverse effect of domestic debt on growth.*

**Keywords:** Causality, domestic debt, economic growth, external debt

### 1. INTRODUCTION

The conventional neo-classical growth model focuses on capital accumulation and technological change as the main drivers of economic growth. Increased capital per worker, which is made possible by higher savings, leads to higher labor productivity, increased incomes and higher standard of living. At the new higher steady state level of income, sustained growth in income can be achieved with technological advancement (Mankiw, 2010). However, higher rates of economic growth remain difficult for developing countries because these countries are often mired in the vicious cycle of low incomes, low savings, low investments, small capital stock, and low rates of economic growth. For this reason, underdeveloped countries resort to borrowings, particularly external borrowings, to bridge the saving-investment gap, expand their capital base, and to achieve a more robust growth, in addition to solving transitory balance of payments problems. Debt finance can also provide fiscal space to governments which can facilitate growth through higher public investments. The relationship between public debt and economic growth, however, is complex as there are contrasting views in both the theoretical and empirical literature as to whether incurring debt to finance government expenditures has a positive, negative or neutral effect on investments and growth. Among the mainstream analytical perspectives, the classicists view public debt as a burden to society; the neoclassical view considers public debt as detrimental to investments and growth, and the Ricardian view considers government debt as equivalent to future taxes which implies a neutral effect of debt on growth (Barik, 2012). The neoclassical and Ricardian schools are concerned with the long-

run effects, while the Keynesian view focuses on the short run. In the short run, assuming sticky prices, government borrowings may stimulate demand for goods and services, increase spending and cause output and incomes to rise. The negative impact works through the crowding out effect and the debt overhang effect. The crowding out effect is based on the assumption that government debt reduces private investments. This can occur because government borrowings increase the demand for loanable funds driving up interest rate in the domestic credit market. Crowding out also arises when the repayment of external debt syphon off needed capital from the economy to finance debt repayment leaving little resources for investments and growth. In addition, heavily indebted countries face debt overhang problems in which the huge debt burden of some countries becomes unsustainable, preventing them from taking on additional debt to fund new investments because the returns from the investments will only be used for debt repayment.

With the new Philippine government administration's strategy of accelerated infrastructure spending as a way to push the economy to a higher growth trajectory, it is timely to re-visit the relationship between public debt and economic growth in the Philippines. Akram (2015) observed that most researches on public debt have focused on the relationship between external debt and economic growth, with relatively few studies on domestic debt which is an equally important component of total indebtedness. This paper responds to this need by determining the separate effects of domestic debt and external debt on economic activity in the Philippines as well the causality between the variables. This combined approach is significant because domestic debt and external debt often have different effects on the economy and because domestic debt has surpassed external debt as the principal source of government borrowings in recent years. In addition, the causality between each debt component and economic performance has not been fully explored for the Philippines, so this paper responds to the relative dearth of researches in this area. This paper consists of six parts. Following this introduction, section 2 presents the review of related literature, section 3 provides a brief overview of the Philippine debt situation in recent years, and section 4 explains the empirical methods employed in the study. The empirical results are discussed in section 5, and the last section offers some concluding remarks and policy recommendations.

## **2. REVIEW OF RELATED LITERATURE**

Not unlike the theoretical literature, the empirical literature on government debt also reflects divergent views with regard to the relationship between public debt and economic growth. Numerous studies using panel data for developing and developed countries as well as country-specific studies, provide evidence of a negative long run relationship between public debt and economic growth (Krugman, 1988; Kumar and Woo, 2010; Panizza and Presbitero, 2012). Other researches point to a positive relationship between the variables (Baum et al. 2012; Kaur and Kaur, 2015; Owusu-Nantwi and Erikson, 2016). Still other studies demonstrated no statistically significant relationship between economic performance and government debt (Warner, 1992; Lof and Malinen, 2014). Despite the mixed findings, economists generally acknowledge that reasonable levels of borrowings by a developing country are likely to enhance its economic growth (Pattillo, Poirson, and Ricci, 2002; Abbas and Christensen, 2010). This can happen when borrowings are used to finance productive investments that promote capital accumulation and productive capacity. Output in this case is likely to grow and allow for timely debt repayments. However, excessive borrowings particularly those diverted to non-productive uses can trigger crowding out and debt overhang problems and may stunt development. In general, a lower level of government debt tends to be growth enhancing, but the impact becomes negative at high debt levels. This observation is consistent with researches that indicate a non-

linear relationship between public debt and economic growth and the existence of thresholds when the negative impact sets in. Reinhart and Rogoff (2012) in examining the debt-growth nexus for a sample of 44 countries for a time span of about 200 years, found that public debt to GDP ratio in excess of 90% has a debilitating effect on growth. This inverted u-shaped relationship between government borrowing and economic activity was confirmed by other studies including Cechetti et al. (2011) for a sample of 18 OECD countries for the period 1980-2009. They found that debt starts to reduce growth when it crosses a threshold of 85% of GDP. However, studies like Afonso and Jalles (2013) using a larger sample of 155 countries, suggest a lower turning point of 59% debt-to-GDP ratio.

The public debt-economic growth debate remains an unsettled issue even for studies that examined separately the impact of external debt and domestic debt on economic growth and the causal relationship among these variables. Using the autoregressive distributed lag (ARDL) technique, Akram (2015) investigated the effects of domestic and external debt on economic growth and investments in the Philippines for the period 1975-2010. The empirical results revealed that public external debt has a negative and significant impact on economic growth and investments, while domestic debt has a positive impact on economic growth but a detrimental effect on investments. The findings support the existence of the debt overhang effect, but could not confirm crowding out due to the insignificant relationship between debt service with investments and economic growth.

Similarly, Umaru et al. (2013), in analyzing the relationship between domestic and external debt and economic growth in Nigeria, found that domestic debt helped promote economic activity whereas external debt was inimical to growth for the period 1970-2010. They likewise conducted a Granger causality test which pointed to a bi-directional causality between external debt and GDP but no causation was found between domestic debt and GDP and between domestic debt and external debt. Fatai (2016), also working on the Nigerian economy, confirmed the bi-directional causality between external debt stock and economic growth and also found a two-way causation between external debt payments and economic growth.

In Swaziland, Ntshakala (2015) detected no significant relationship between external debt and economic growth. However, domestic debt had a significant positive impact on economic growth, hence, the study concluded that higher levels of domestic borrowings will likely spur economic growth in the country. In Jamaica, Blake (2015) examined the growth effects of total debt and external debt using the ARDL method on quarterly data from 1990 to 2014. The study showed that public debt has a non-linear impact on economic activity, with total public debt and external debt having a deleterious effect on growth when in excess of 100% and 55% of GDP, respectively.

On the positive side of the external debt-growth debate, Baker and Hassan (2008) using vector autoregressive (VAR) estimates, identified a long run positive relationship between total external debt and economic performance in Malaysia. In particular, a one percentage point increase in total external debts generates 1.29 percentage point of economic growth in the long term. Another study carried out by Sulaiman and Azeez (2012) on the Nigerian economy which employed co-integration and error correction methods also determined that external debt promoted economic growth in the long run. The same positive impact of external debt on the economy was observed by Korkmaz (2015) for Turkey for the period 2003-2014. In contrast, Dritsaki (2013) in investigating the mounting debt problem of Greece for the period 1960 to 2011 observed a one way causality that flows from economic growth to public debt in the long run. Although the case for public debt as a growth catalyst has often been cast in terms of external borrowings, there are equally strong reasons for the use of domestic debt to help finance government budget deficits. Domestic borrowings augment the resources of

underdeveloped countries that have scant foreign exchange reserves to service foreign debts due to fluctuating export prices and earnings. They also help protect these economies from external shocks by diversifying their financing sources. In addition, government domestic borrowings in these countries facilitate the development of their financial markets by offering a steady supply and a variety of financial instruments to be traded (Johnson 2001).

Putunoi and Mutuku (2013) empirically examined the long run effects of domestic debt on Kenya by employing the Engler Granger and VAR techniques. The study found that domestic debt growth in Kenya has a positive and significant effect on economic activity for the period of their study. Also in Kenya, Maana, et al. (2008) using the Barro growth regression model, asserted that the composition of Kenya's debt from 1996-2007 has shifted in favor of domestic debt and that domestic debt growth had a positive but insignificant impact on economic growth. Anyanwu and Erhijakpor (2004) evaluated the growth effects of current domestic debt outstanding as a percentage of GDP and past domestic debt accumulation in Nigeria using time series data from 1970-2003. Their findings showed that domestic debt outstanding as a percentage of GDP significantly dampened economic growth due to high domestic interest rate. On average a one percent increase in domestic debt outstanding as a ratio of GDP reduces economic growth by 0.38%. To reduce financial cost, the authors recommended opening up and increasing foreign access to domestic debt and to foster financial innovation to improve market efficiency. A negative link between domestic debt and economic growth was also disclosed by Adofu and Adula (2010) for Nigeria from 1986-2005. They proposed that domestic debt be discouraged and the country's tax base be widened instead.

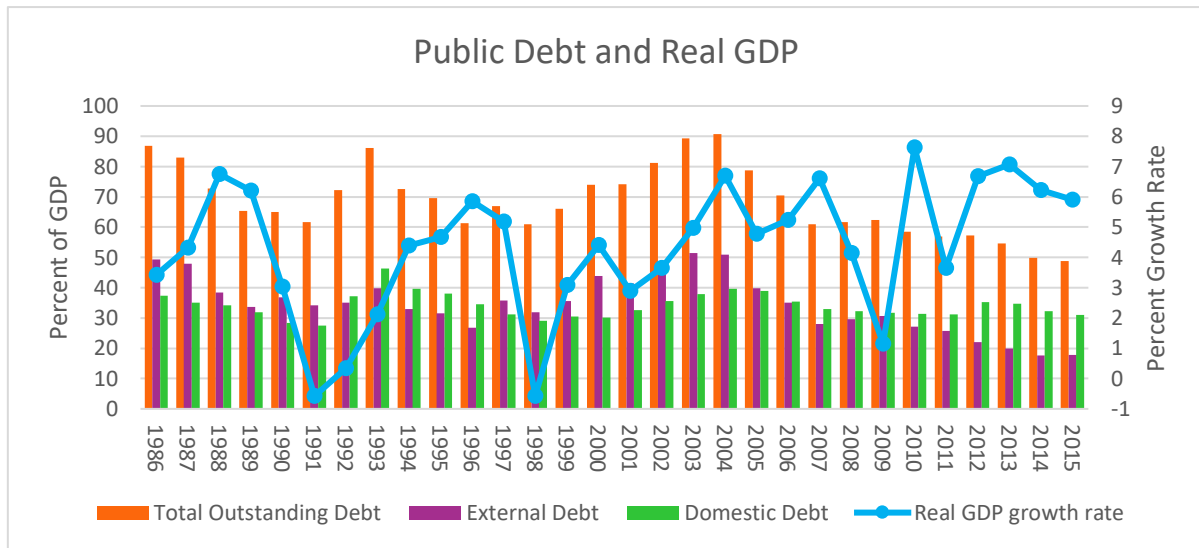
The above studies reflect divergent findings on the impact of public debt on economic growth. As Pereima et al. (2015) observed, the evidence on the relationship of public debt and economic growth vary considerably, are sensitive to the selection of sample size and period covered, and are subject to causality, non-linearity, and endogeneity issues. Nevertheless, more research on this subject will shed additional light on the multifaceted dimensions of the relationship among the variables. Moreover, causality studies are important as they help shape more appropriate policies to address specific issues relating to public debt and economic growth.

### **3. OVERVIEW OF THE PHILIPPINE DEBT SITUATION**

In the face of pronounced volatility in its output growth, persistent low revenue effort and uneven performance of its export sectors, the Philippine government, in the 1980s and 1990s, borrowed heavily to finance both its budget deficit and balance of payments deficit. The massive buildup of government debt, particularly external debt, started in the mid-1970s and escalated into a crisis in the early 1980s culminating to a moratorium on debt repayments in October 1983. External shocks such as the two rounds of oil price hikes, steep rise in world interest rates and a huge drop in export earnings which triggered a domestic recession, coupled with a debt-driven growth strategy anchored on investment expansion set off an upward debt spiral. However, the increase in investments did not translate to higher output growth as many investments yielded low returns. In part, this was due to a shift to large infrastructure projects that had a longer payout period, including the construction of some luxury structures, and to capital intensive industries that required large investments per unit of output. Allocation of investment funds was also influenced by crony capitalism with cheap credit going to favored supporters of the government. As a result, total foreign debt nearly doubled between 1979 and 1982 and the ratio of total debt to output jumped to 82% in 1985 (Dohner and Intal, 1989). Starting 1986 with the dismantling of the dictatorship and assumption to power of a new democratic government, the debt situation improved. Figure 1 below depicts the growth of total public debt, domestic debt and external debt as a percentage of GDP from 1986 to 2010 as well as the growth rate of real GDP during the same period. After two years of falling output, the

economy began to recover in 1986 led by exports, increased government expenditures, and improving terms of trade (Dohner and Intal, 1989). In addition, the new government put in place economic stabilization and tax reform programs, which helped reduce the debt to GDP ratio from 86.8% in 1986 to 61.6% in 1991.

Figure 1. Public Debt, Domestic Debt, External Debt and Real GDP, 1986-2015



However, in the early 1990s, there was a clear escalation of public debt as the economy reeled from the burden of high oil prices caused by the Gulf war, balance of payment difficulties, the eruption of Mount Pinatubo, and a crippling power shortage. The incipient economic recovery starting 1992 and resumption in the downward trend of the debt to GDP ratio starting 1993 were abruptly cut short as the economy weakened again in the aftermath of the Asian financial crisis (Briones et al., 2011). Despite a quick economic recovery, revenue collections remained languid in the years after the crisis with the budget deficit expanding to nearly 5 % of GDP in 2002. This pushed outstanding public debt stock upwards to a peak of 90% of GDP in 2004. Cognizant of such unsustainable debt trend and the urgency to boost revenue collections, Congress in 2005 passed into law a comprehensive tax reform package that implemented an expanded value-added tax. At the same time, economic growth proceeded at a more consistent and brisker pace fueled in part by the dramatic growth of OFW remittances, robust domestic demand, low inflation, and adoption of structural reforms that fostered the country's long term growth fundamentals. With faster real GDP growth rate that reached a high of 7.6% in 2010, the government enhanced its overall all debt position as the ratio of outstanding public debt to GDP declined below 50% in 2014 and 2015, the lowest level in the past four decades. In May 2010, Rodrigo Duterte was elected the 16<sup>th</sup> President of the Republic of the Philippines under a promise of change to solve lingering problems that have long bedeviled Philippine society. Despite stronger economic growth, resurgent foreign investments, and improved corruption index, the Philippines still has high levels of poverty and unemployment, crumbling infrastructure, and a raging insurgency war in the southern part of the country. Its economic team has put in place a 10 point socio-economic agenda that call for a more robust but inclusive growth of 7% to 8% of output, attainment of which is hinged, in large part, on poverty reduction, increased employment opportunities, human capital development, and accelerated infrastructure spending which is expected to grow in excess of 5% of GDP in 2016 and onward (NEDA, 2017).

Because increased infrastructure spending will be funded in part by higher government borrowings, it is important to reexamine the relationship between public debt and economic growth in the Philippines to be able to shed more light on the possible impact of this policy initiative.

#### 4. RESEARCH METHODOLOGY

##### Data Requirements and Sources

The paper conducted econometric tests on the relationship between public debt and economic growth in the Philippines using annual time series data over the period 1986-2015. The data on public debt were disaggregated between domestic debt and external debt. This distinction will determine whether domestic debt or external debt helps promote and enhance economic development in the Philippines. The debt data were obtained from the Philippine Bureau of the Treasury, while the data on real gross domestic product (RGDP) were taken from the World Development Indicators of the World Bank.

##### Model Specification

The model is based on the neo-classical growth theory that states that output is determined by the amounts of capital and labor inputs and by the state of technology. The relationship can be written in the form:  $Y = f(L, K, A)$

Where  $Y$  refers to aggregate output,  $L$  is the quantity of available labor,  $K$  is the size of the capital stock, and  $A$  is a variable that denotes the current state of technology.

According to this model, output growth is a direct function of the growth of labor and capital inputs and of increases in productivity, which depend on technological change. Considering that government debt enables the funding of expenditures that improve the quality of labor, capital and technology, then it can be inferred that the amount of government debt also determines the level output.

In order to test the causal relationship between public debt and economic growth, the following model is specified:

$$\text{RGDP} = f(\text{DOM}, \text{EXT})$$

(1)

Where RGDP is the country's real gross domestic product, DOM is the outstanding domestic debt of the national government including domestic guaranteed debt, and EXT is the external debt stock outstanding of the national government including foreign guaranteed debt. Guaranteed debt refers to borrowings of government owned and controlled corporations that are guaranteed by the national government.

The long run equation of the above model is represented by the following equation:

$$\ln \text{RGDP}_t = \alpha_0 + \alpha_1 \ln \text{Dom}_t + \alpha_2 \ln \text{Ext}_t + \varepsilon_t$$

(2)

Where  $\ln \text{RGDP}_t$ ,  $\ln \text{Dom}_t$ ,  $\ln \text{Ext}_t$  denote the natural logarithms of real gross domestic product, domestic debt stock and external debt stock, respectively.  $\varepsilon_t$  represents the white noise with zero mean and a constant variance.



### Econometrics Techniques

The empirical analysis in this study consists of three main econometric tests: (1) the ADF unit root test; (2) the Johansen co-integration test; and (3) the vector error correction model (VECM). It should first be noted that in conducting regression analysis using time series data, there is a need to ensure that all the variables are stationary, meaning that they have a constant mean and constant variance over time.

If the variables used are nonstationary (i.e., they have a time-varying mean or time-varying variance, or both), the regression analysis may lead to spurious results (Thomas 1996). The stationarity test is important because most time series data are nonstationary.

Thus, as a first step in the analysis, the ADF unit root test (Dickey and Fuller, 1979) will be implemented to check if the variables – in this case, real GDP, domestic debt and external debt – have no unit roots (i.e., whether they are stationary at levels or at first difference). Then, the lag length test will be undertaken to determine the optimal lag length. After this, the Johansen (1988, 1991) co-integration test is performed to find out if the stationary variables are co-integrated. The presence of co-integration indicates that there is a long run relationship among the variables. Lastly, the Granger causality test is employed to analyze the cause and effect relationship between domestic debt, external debt and economic growth (Granger 1969). If based on the ADF test, the variables are found to be integrated of order zero or I(0), a standard Granger causality test with the lag length of  $n$  would be run using the following vector autoregressive (VAR) equations:

$$\ln RGDP_t = \gamma_1 + \sum_{j=1}^n \alpha_{1j} \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{1j} \ln Ext_{t-j} + \sum_{j=1}^n \delta_{1j} \ln Dom_{t-j} + u_{1t} \quad (3)$$

$$\ln Ext_t = \gamma_2 + \sum_{j=1}^n \alpha_{2j} \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{2j} \ln Ext_{t-j} + \sum_{j=1}^n \delta_{2j} \ln Dom_{t-j} + u_{2t} \quad (4)$$

$$\ln Dom_t = \gamma_3 + \sum_{j=1}^n \alpha_{3j} \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{3j} \ln Ext_{t-j} + \sum_{j=1}^n \delta_{3j} \ln Dom_{t-j} + u_{3t} \quad (5)$$

Where  $\gamma_1$ ,  $\gamma_2$ , and  $\gamma_3$  are constants;  $\alpha_{1j} \dots \alpha_{kj}$ ,  $\beta_{1j} \dots \beta_{kj}$  and  $\delta_{1j} \dots \delta_{kj}$  are slope coefficients; and  $u_{it}$  ( $i = 1, 2, 3$ ) is the stochastic error term with zero mean value with constant variance.

The Granger causality would then be investigated by using the Wald test for the joint hypothesis: for  $i = 1, 2, 3$

$$\alpha_{i1} = \alpha_{i2} = \dots = \alpha_{in} \quad (6)$$

$$\beta_{i1} = \beta_{i2} = \dots = \beta_{in} \quad (7)$$

$$\delta_{i1} = \delta_{i2} = \dots = \delta_{in} \quad (8)$$

However, if the ADF test shows that the variables are integrated of order one or I(1), and there is a co-integrating relationship among them, Granger causality will be carried out using the VECM. In this case, the following equations will apply:

$$\Delta \ln RGDP_t = \gamma_1 + \sum_{j=1}^n \alpha_{1j} \Delta \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{1j} \Delta \ln Ext_{t-j} + \sum_{j=1}^n \delta_{1j} \Delta \ln Dom_{t-j} + \tau_1 EC_{t-1} + u_{1t} \quad (9)$$

$$\Delta \ln Ext_t = \gamma_2 + \sum_{j=1}^n \alpha_{2j} \Delta \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{2j} \Delta \ln Ext_{t-j} + \sum_{j=1}^n \delta_{2j} \Delta \ln Dom_{t-j} + \tau_2 EC_{t-1} + u_{2t} \quad (10)$$

$$\Delta \ln Dom_t = \gamma_3 + \sum_{j=1}^n \alpha_{3j} \Delta \ln RGDP_{t-j} + \sum_{j=1}^n \beta_{3j} \Delta \ln Ext_{t-j} + \sum_{j=1}^n \delta_{3j} \Delta \ln Dom_{t-j} + \tau_3 EC_{t-1} + u_{3t} \quad (11)$$

where  $\Delta$  is the difference operator;  $n$  is the number of lags;  $EC_{t-1}$  is the one-period lagged value of the error correction term;  $\tau_1$ ,  $\tau_2$  and  $\tau_3$  are slope coefficients; and  $u_{1t}$  is the stochastic error term with zero mean value with constant variance.

The Granger causality test based on the VECM captures both the short-run and the long-run causalities among the variables. Hence, it has an advantage over the Granger causality based on the VAR. The short run causal effect would be measured by the Wald test, while the long run causal effect would be determined by the significant error correction term ( $EC_{t-1}$ ).

## 5. EMPIRICAL RESULTS

This section reports the results of the statistical tests on the relationship among domestic debt, external debt and economic growth in the Philippines for the period 1986–2015.

### ADF Unit Root Test

Firstly, the ADF unit root test was performed to verify the existence of unit roots in the time series and the stationarity of the model. The results from the ADF test with trend and without trend are presented in Table 1. The null hypothesis is that each variable has a unit root (or is nonstationary) and the alternative hypothesis is that each variable has no unit root (or is stationary). If the computed value (in absolute terms) of the test statistic exceeds the critical value (also in absolute terms), then the null hypothesis is rejected and the series is said to be stationary and vice-versa.

The results from Table 1 show that all the variables are nonstationary at their level values. Hence, the individual ADF tests could not reject the null hypothesis of the presence of unit roots at levels. Following this outcome, the ADF test was conducted for the first differences of all the variables. The results show that the null hypothesis of unit roots at first differences could be rejected. These findings indicate that RGDP, DOM and EXT are integrated of order one  $I(1)$  or are stationary at first differences.

**Table 1. ADF unit root test**

| Variables            | Level                  |                     | First Difference       |                     |
|----------------------|------------------------|---------------------|------------------------|---------------------|
|                      | Constant without trend | Constant with trend | Constant without trend | Constant with trend |
| <i>Real GDP</i>      | 1.954                  | -0.334              | -3.566**               | -3.990**            |
| <i>Domestic Debt</i> | -1.339                 | -1.382              | -3.665**               | -3.834**            |
| <i>External Debt</i> | -1.531                 | -0.469              | -4.700***              | -4.975***           |

Notes: All variables are expressed in natural logarithmic form.

Number of lag structures is zero for all tests.

\*, \*\*, and \*\*\* indicate the level of significance at 10%, 5%, and 1% respectively

## Vector Error Correction Model Analysis

### Lag Length Test

As the next step in the analysis, the lag length test was conducted and the results are presented in Table 2. The lagged length criteria used are the Final Prediction Error, the Akaike Information Criterion, and the Hannan Quinn Information Criterion. All three techniques suggested that the optimal lag length should be two lags and this was used in the VECM.

**Table 2. Lag Length Selection Test**

| Lag | Final prediction error (FPE) | Akaike Information criterion (AIC) | Hannan-Quinn information criterion (HQ) |
|-----|------------------------------|------------------------------------|-----------------------------------------|
| 0   | 0.000271                     | 0.298387                           | 0.3412                                  |
| 1   | 5.52E-08                     | -8.205298                          | -8.034044                               |
| 2   | 4.93e-08*                    | -8.349024*                         | -8.049331*                              |
| 3   | 8.20E-08                     | -7.913837                          | -7.485703                               |

\* indicates lag order selected by the criterion

### Johanssen Co-Integration Test

After confirming the stationarity of the variables and determining the optimal lag length, the Johansen co-integration test was performed to examine their long-run relationship. Table 3 presents the multivariate co-integration test results, which consist both of the Eigenvalue and trace statistic. The results indicate that there exists a co-integrating relationship among the three variables, namely real GDP, domestic debt and external debt. This means that these variables move together in the long run – that is, they have a long run equilibrium relationship. In particular, the first and second null hypothesis that there is zero or at most one co-integrating equation could be rejected at the 1% and 5% level of significance, respectively. However, the third hypothesis that there is at most two co-integration equation could not be rejected. Thus, we conclude that there exists two co-integrating relationship among the variables.

**Table 3. Johansen Cointegration Test**

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---------------------------|------------|-----------------|---------------------|---------|
| None ***                  | 0.549      | 37.787          | 29.797              | 0.005   |
| At most 1 **              | 0.481      | 17.063          | 15.495              | 0.029   |
| At most 2                 | 2.58E-06   | 6.71E-05        | 3.841               | 0.995   |

Note: \*, \*\*, and \*\*\* indicate the level of significance at 10%, 5%, and 1% respectively  
The three variables have a long run relationship

### Long Run Relationship

With the ADF test results showing that the time series variables are integrated at first difference, the VECM was used to determine the impact of domestic debt and external debt on economic growth in the long run and the short run.

The long run causality based on the VECM is reported in Table 4 and identified in the error correction term (ECT), also called speed of adjustment, for each variable. Based on the computed ECT value for RGDP, there is a long-run causality between domestic debt and external debt to economic growth. Specifically, both domestic and external debt have a statistically significant impact on economic growth in the long-run. This finding is validated by the coefficient of the t-statistic of the ECT (-0.077) which is significant at the 5% level.

The ECT, or speed of adjustment, of -0.077 implies that, following a shock, approximately 7.7 % of the adjustment back towards the long run equilibrium for real GDP will be completed after one year.

However, the long run causalities of external debt and RGDP to domestic debt as well as domestic debt and RGDP to external debt are not statistically significant, as shown by high p-values of the ECT. This implies that only a unidirectional long run causality exists from domestic debt and external debt to RGDP.

**Table 4. Granger Causality Test Based on VECM**

| Dependent Variable          | Independent variables –<br>Chi-square value (Wald test) |                      |                      | t-statistic<br>Error Correction<br>Term |
|-----------------------------|---------------------------------------------------------|----------------------|----------------------|-----------------------------------------|
|                             | <i>Real GDP</i>                                         | <i>Domestic Debt</i> | <i>External Debt</i> |                                         |
| <b><i>Real GDP</i></b>      |                                                         | 0.438<br>(0.803)     | 5.492<br>(0.064)*    | -0.077<br>(0.022)**                     |
| <b><i>Domestic Debt</i></b> | 3.558<br>(0.169)                                        |                      | 1.065<br>(0.587)     | 0.182<br>(0.178)                        |
| <b><i>External Debt</i></b> | 1.682<br>(0.431)                                        | 0.789<br>(0.674)     |                      | 0.237<br>(0.344)                        |

Notes: All variables are expressed in natural logarithmic form.

p-values are in parentheses

\*, \*\*, and \*\*\* indicate the level of significance at 10%, 5%, and 1% respectively

Table 5 presents the estimated coefficients of the long run relationship between economic growth, domestic debt and external debt. The coefficient of external debt is positive and statistically significant indicating that external debt has a positive long run impact on economic growth in the Philippines. The coefficient implies that a 1% increase in external debt would raise economic growth by 0.20%. The beneficial effect of external debt to economic performance may be attributed to the fact that during the period of the study, a major source of the country's foreign loans was official development assistance (ODA). The latter grew substantially in the 1990s reaching as high as one-fifth of GDP. Although its share to GDP has since diminished, in absolute amount, ODAs continued to increase to a peak of \$13 billion in 2002 (Briones et al, 2011). As ODAs are highly concessional loans that are often tied up to the

attainment of policy reforms or development goals, such as the Millennium Development Goals (MDG), by recipient governments, reliance on ODAs provides some guarantee that debt proceeds are channeled for productive investments, like infrastructures and other social overhead capital, that yield positive net benefits to the country. This could partly explain the favorable impact of external debt to economic growth during the study period.

**Table 5. Long-run Cointegration Model**

| <b>Dependent Variable</b> | <b>Independent Variables</b> |                             |                        |
|---------------------------|------------------------------|-----------------------------|------------------------|
|                           | <b><i>Domestic Debt</i></b>  | <b><i>External Debt</i></b> | <b><i>Constant</i></b> |
| <b><i>Real GDP</i></b>    | -0.653<br>(-3.125)           | 0.200<br>( 0.892)           | -16.390                |

Notes: All variables are expressed in natural logarithmic form.  
*t*-statistics are in parentheses.

The growth enhancing effect of public external debt is supported empirically by the work of Baker and Hasan (2008) and Sulaiman and Azeez (2012). It is contravened by the findings of Akram (2015) for the Philippines which showed a statistically significant negative long run relationship between external debt and economic growth. However, Akram's paper encompassed a different time period, 1975 to 2010, which included years when the country was under martial rule (1972-1981). Dohner and Intal (1989) in explaining the factors that led to the debt crisis during the martial law years, observed that the debt driven growth strategy did not result to a self-sustaining growth because many investments yielded low returns. With regard to domestic debt, the estimated coefficient is negative and statistically significant. The finding is consistent with theoretical expectation that domestic debt retards economic growth in the long run and is supported by the empirical studies of Adofu and Abula (2010) and Anyanwu and Erhijakpor (2004). The domestic debt coefficient indicates that a 1% increase in domestic debt would decrease real GDP by 0.65%, lending credence to the traditional view that government domestic borrowings may crowd out private sector investments. This point is underscored by Abbas and Christensen (2007) in a time series study of 93 low income countries and emerging markets over the 1973-2004 period. Their analysis revealed that above a ratio of 35% of deposits, domestic debt begins to undermine growth. The policy implication is that domestic borrowings must be carefully monitored to stave off the onset of crowding out.

#### Short Run Granger Causality

The VECM was likewise used to identify the short run causal relationship among the variables. The results of the Wald test for the chi-square statistics and its *p*-values are reported in Table 4 above. The null hypothesis that domestic debt does not Granger-cause RGDP could not be rejected. That is, the results show that in the Philippines, domestic debt does not seem to influence the country's economic growth. Conversely, the null hypothesis that RGDP does not Granger-cause domestic debt could also not be rejected. This suggests that short run variations in Philippine domestic debt do not cause changes in its RGDP and vice versa. The conclusion of no causal relationship between domestic debt and economic growth are in line with the findings of Singh (1999) in India and by Umaru et al. (2013) in Nigeria. These studies lend credence to the Ricardian equivalence hypothesis of neutrality between debt and economic growth. On the other hand, the null hypothesis that external debt does not Granger-cause RGDP could be rejected at the 0.10 level of significance. This means that Philippine external debt Granger-causes RGDP. Given that the coefficient of the reverse short run causality that runs

from RGDP to external debt is not statistically significant, only a unidirectional link from external debt to RGDP is established by this study. The outcome that external debt Granger-causes RGDP is supported by Kormatz (2015), Fatai (2016) and Egbetunde (2004). Using the VAR method and quarterly data from 2003 to 2013, Kormatz determined that a unidirectional causality existed from external debt to economic growth in Turkey during the period. Finally, with regard to domestic debt and external debt, the coefficients are statistically insignificant in both directions, implying that for the Philippine case these variables do not affect each other in the short run.

## 6. CONCLUSION & RECOMMENDATIONS

This study sought to provide additional insights into the complex relationship between public debt and economic performance. Several econometric tests that included the VECM and Granger causality technique were carried out to determine separately whether there exists a meaningful long run and short run relationship between domestic debt and economic growth and between external debt and economic growth and the direction of causality between these variables. The study demonstrated a long run co-integrating relationship between public domestic and external debt and economic growth for the period 1985-2010. The coefficient for external debt is positive and significant indicating that external debt promotes economic activity in the long run. In addition, the short run Granger causality test exhibited a unidirectional causality that flowed from external debt to economic growth only. This suggests that the new Philippine government may have the fiscal space to increase foreign borrowings to finance its accelerated infrastructure development program. Such strategy may have positive ripple effects as a portion of our external debt still comes from ODA sources and therefore carry lower interest rate. However, potential savings must be balanced against the higher borrowing costs that may ensue from exchange rate fluctuations as the recent slide of the Philippine peso against the U.S. dollar has shown. Increased utilization of external borrowings should also be cognizant of local agencies' capacity to use these funds and levels should be reined in to prevent debt from escalating to unsustainable levels. In investigating the non-linear impact of debt on economic growth, Patillo et al. (2002) observed that the effect of external debt becomes negative at about 160 to 170% of exports or 30 to 35% of GDP. However, as shown in Figure 1 above, the share of external debt to GDP in the Philippines has been on a consistent downward trend in the past 12 years from a peak of 51.4% in 2003 to a historical low of only 17.8% in 2015. On the other hand, the budget deficit to GDP ratios in 2014 and 2015 stood at -0.6% and -0.9%, respectively (DBM, 2015). At the current ratios of external debt and budget deficit to GDP, it appears that government has some leeway in tapping more external debt to finance its development programs. The study also unraveled a significant negative long run relationship between domestic debt and economic activity, which implies that during the period of the study domestic debt was a constraint to economic growth in the country. In the short run, however, domestic debt was not a vital contributor to variations in real GDP growth. Nevertheless, the Philippine government in its current thrust of raising public investment spending, should keep an eye on the magnitude of domestic borrowings in order to curb its long run debilitating effect on private investments. This is important because since 2007 domestic debt has overtaken external debt as the government's principal source of borrowings. Furthermore, given that domestic debt is usually more expensive than foreign debt because interest rates are set at less concessional terms, it is worth exploring whether domestic borrowing cost can still be reduced by revising the term structure of interest rate on government debt so as to lessen its budgetary burden. Future researches should likewise examine whether there is a linear or non-linear relationship between domestic debt and economic growth (and between external debt and economic growth) in the Philippines and determine the thresholds, if any, when the positive effects of debt on growth turn negative.

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## INFORMATION SECURITY INCIDENTS: A COMPARISON BETWEEN THE CZECH REPUBLIC AND POLAND

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### ABSTRACT

*Information security, which is defined as a preservation of confidentiality, integrity and availability of information, ensures a continuity of business and limits a damage by preventing and reducing the impact of security incidents. In order to properly incidents management, a knowledge about these threats should be known, especially about their types and numbers of occurrences. The paper describes selected aspects of information security incidents. It considers legal requirements related to the information security in the Czech Republic and Poland and gives some examples of the information security incidents in these countries. The aim of the research was analysis and evaluation of the information security incidents in the Czech Republic and Poland. The analysis was based on the reports of the Government Computer Emergency Response Team (GovCERT.CZ), the Governmental Computer Security Incident Response Team (CERT.GOV.PL) and on the basis of data from the statistics of the National CSIRT of the Czech Republic (CSIRT.CZ) and the CERT Polska (CERT.PL). These teams were appointed to provide several security services, such as for example: research and development in the area of cybersecurity, education and tutoring, support to defend against threats and registration and handling of incidents. Every year the Computer Security Incident Response Teams prepares reports on the status of cyberspace security. According to these reports, the numbers of information security incidents have grown rapidly and it can be argued that the numbers of reported incidents will grow in the future.*

*The current study focuses on the reported incidents from the years 2013 - 2015. A comparative analysis of incidents is quite complicated, because the reports templates are different and the countries have various incidents classifications.*

**Keywords:** *cybersecurity, incidents, information security, reports*

### 1. INTRODUCTION

An information security incident is defined in ISO/IEC 27000:2016 standard as a "single or a series of unwanted or unexpected information security events that have a significant probability of compromising business operations and threatening information security" (ISO/IEC 27000:2016 – 2.36). Information security incident means not only confidentiality breaches but also unauthorized data modification or lack of information availability (e.g. Denial of Service). This definition is directly related to the information security, whereas the National Institute of Standards and Technology defines also a term "computer security incident" as "a violation or imminent threat of violation of computer security policies, acceptable use policies, or standard security practices" (National Institute of Standards and Technology, 2012). An information security has a wider meaning than a computer security (Białas, 2007). Sometimes also the term "cyber incidents" is used (Kjaerland, 2006), (Romanosky, 2016). Some guidance on aspects of information security incident management can be found in two standards: ISO/IEC 27035-1:2016 and ISO/IEC 27035-2:2016. The first presents basic concepts and phases of information security incident management, and how to improve incident management. It combines these concepts with principles in a structured approach to detecting, reporting, assessing, and responding to incidents, and applying lessons learned. The second, describes how to plan and prepare for the incident response (ISO/IEC 27035-1:2016), (ISO-

IEC 27035-2:2016). The proper information security incidents management also has an impact on ensuring the business continuity of an organization. Even in the case of the incident occurrence, the business continuity will be disrupted for the shortest possible time. (Previous studies on information security incidents has been published in (Lisiak-Felicka, Szmit, 2014), (Lisiak-Felicka, Szmit 2015), (Lisiak-Felicka, Szmit 2016). Although a lot of measures can be taken in order to prevent information security incidents, it is not possible to fully protect all systems (Anderson et al., 2012), (Tøndel et.al., 2014).

## 2. METHOD

The aim of the research was analysis and evaluation of the information security incidents in the Czech Republic and Poland. The analysis was performed on the basis of the reports and statistics from national and government teams, which are responsible for coordinating the process of handling incidents. In the Czech Republic there are two teams: the National Computer Security Incident Response Team (CSIRT.CZ) and the Government Computer Emergency Response Team of the Czech Republic (GovCERT.CZ). Similarly in Poland: the Computer Emergency Response Team (CERT.PL) and the Governmental Computer Security Incident Response Team (CERT.GOV.PL) (Cert.org, 2017). Table 1 shows the goals and main responsibilities of these teams (see: Table 1). The current study focuses on the reported incidents from the years 2013 – 2015.

*Table 1: The main responsibilities of CERT and CSIRT teams (GovCERT.PL., CERT.GOV.PL, CSIRT.CZ, CERT.PL) – Continues on the next page*

| Team       | Goals/the main responsibilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSIRT.CZ   | <ul style="list-style-type: none"> <li>- maintain foreign relations – with the global community of CERT/CSIRT teams as well as with organizations supporting the community,</li> <li>- cooperate with various entities across the country – ISPs, content providers, banks, security organs, institutions in the academic sphere, public authorities and other institutions,</li> <li>- provide security services such as: addressing security incidents and coordination thereof education and tutoring, proactive services in the area of security.</li> </ul>                                                                                                                                                                                                                                                                         |
| GovCERT.CZ | <ul style="list-style-type: none"> <li>- react on the incidents,</li> <li>- coordinate actions to solve them and effectively prevent them,</li> <li>- provide the security information and assistance to the state bodies, private entities and citizens,</li> <li>- enhance the knowledge about internet security.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CERT.PL    | <ul style="list-style-type: none"> <li>- registration and handling of network security incidents;</li> <li>- active response in case of direct threats to users;</li> <li>- cooperation with other CERT teams in Poland and worldwide;</li> <li>- participation in national and international projects related to the IT security;</li> <li>- research into methods of detecting security incidents, analysis of malware, systems for exchanging information on threats;</li> <li>- development of proprietary and open source tools for detection, monitoring, analysis, and correlation of threat;</li> <li>- regular publication of the annual CERT Polska Report on security of Polish cyberspace;</li> <li>- informational and educational activities, aimed at raising awareness in relation to IT security, including:</li> </ul> |

|             |                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <ul style="list-style-type: none"> <li>- maintaining a blog at cert.pl as well as Facebook and Twitter accounts;</li> <li>- organization of the annual SECURE conference</li> <li>- analysis and testing of IT security solutions.</li> </ul>                                                                                                              |
| CERT.GOV.PL | <ul style="list-style-type: none"> <li>- coordination of emergency responses within the government administration sector,</li> <li>- coordination the process of handling computer incidents in the area of cyberspace,</li> <li>- support government administration entities and enable the institutions to defend themselves against threats.</li> </ul> |

### 3. RESULTS

The Czech Republic adopted National Cybersecurity Strategy in 2011. On 1 January 2015 (BSA, 2015), Act no. 181 Coll., On Cybersecurity came into force. This act has defined two centers, the governmental CERT (Gov.CERT.CZ) and the national CERT (CSIRT.CZ.). On 16 February, 2015 the Government of the Czech Republic approved the new National Cyber Security Strategy for years 2015 – 2020. In Poland the strategy was adopted in 2013. In the same year Cyberspace Protection Policy of the Republic of Poland came into force (Ministry of Administration and Digitization, 2013). At present the new Cybersecurity Strategy for the years 2016-2020 is developed (Ministry of Digital Affairs, 2017). Poland has several CERTs, including CERT.GOV.PL, which covers government and critical infrastructure entities and CERT Polska (CERT.PL) which is an academic CERT covering the entire .pl network in a semi-official capacity. Both countries have to handle the information security incidents. Some examples of the incidents in the Czech Republic and Poland are listed below:

- in June 2015 cybercriminals attacked a website of a state institution, placed a malicious code there and changed its content. The attackers also managed to gain access to an e-mail account of an employee of the concerned institution. From this address, attackers sent fabricated messages, and in the emails, they were posing as the employee of the institution (GovCERT.CZ);
- the most significant incident was a spear-phishing attack in November 2015. During the attack unknown attackers managed to infect a computer of a government worker and then sent fraudulent messages to other state institutions of European Union countries. These messages included malware as an attachment, which was subsequently identified as a spying malware Turla/Snake/Uroburos (GovCERT.CZ);
- in 2015 there was an increase of ransomware infection of computers of government institutions. These were crypto ransomware using AES-256 (GovCERT.CZ);
- in the summer 2015 LOT Polish Airlines flights originating from Warsaw Frederic Chopin Airport were grounded for about 4 hours due to DDoS attack. The lack of communication could be a result of a reflected DNS amplification attack, using a server inside the airline's network to generate massive volume of outgoing traffic (CERT.PL);
- in the spring of 2015, an infrastructure of a Polish bank was compromised and infiltrated by criminals. The attackers tried to blackmail the bank, demanding about 50 thousand euros for silence and for refraining from publishing the stolen customer data. A ToRepublic administrator nicknamed "Polsilver" confessed he had attacked Plus Bank and published parts of stolen data (CERT.PL);
- in 2015 there were a lot of attacks using software which encrypts user data (ransomware). The most effective way to distribute this type of malicious software (in this case Cryptolocker) was an e-mail campaign pretending to be from the Polish Post Office (CERT.PL).

The following table illustrates the numbers of incidents in the surveyed countries from the years 2013 – 2015 (see: Table 2).

*Table 2: Numbers of incidents reported by the teams (on the basis of reports and statistics of govCERT.PL., CERT.GOV.PL, CSIRT.CZ, CERT.PL)*

| Year | GovCERT.CZ | CERT.GOV.PL | CSIRT.CZ | CERT.PL |
|------|------------|-------------|----------|---------|
| 2013 | 100        | 5670        | 2617     | 1219    |
| 2014 | 81         | 7498        | 3320     | 1282    |
| 2015 | 169        | 8914        | 4931     | 1456    |

The most incidents were reported to the CERT.GOV.PL. In the Czech Republic there were fewer incidents than in Poland. On the other hand CSIRT.CZ reported more incidents than CERT.PL. Reports of CERT.GOV.PL show the largest number of handled information security incidents. The following chart (Chart 1) presents the numbers of incidents by types in the Czech Republic and Poland from statistics of the CSIRT.CZ and CERT.PL. In the Czech Republic the largest group represents the incidents detected by Intrusion Detection System (IDS), whereas in Poland – frauds.

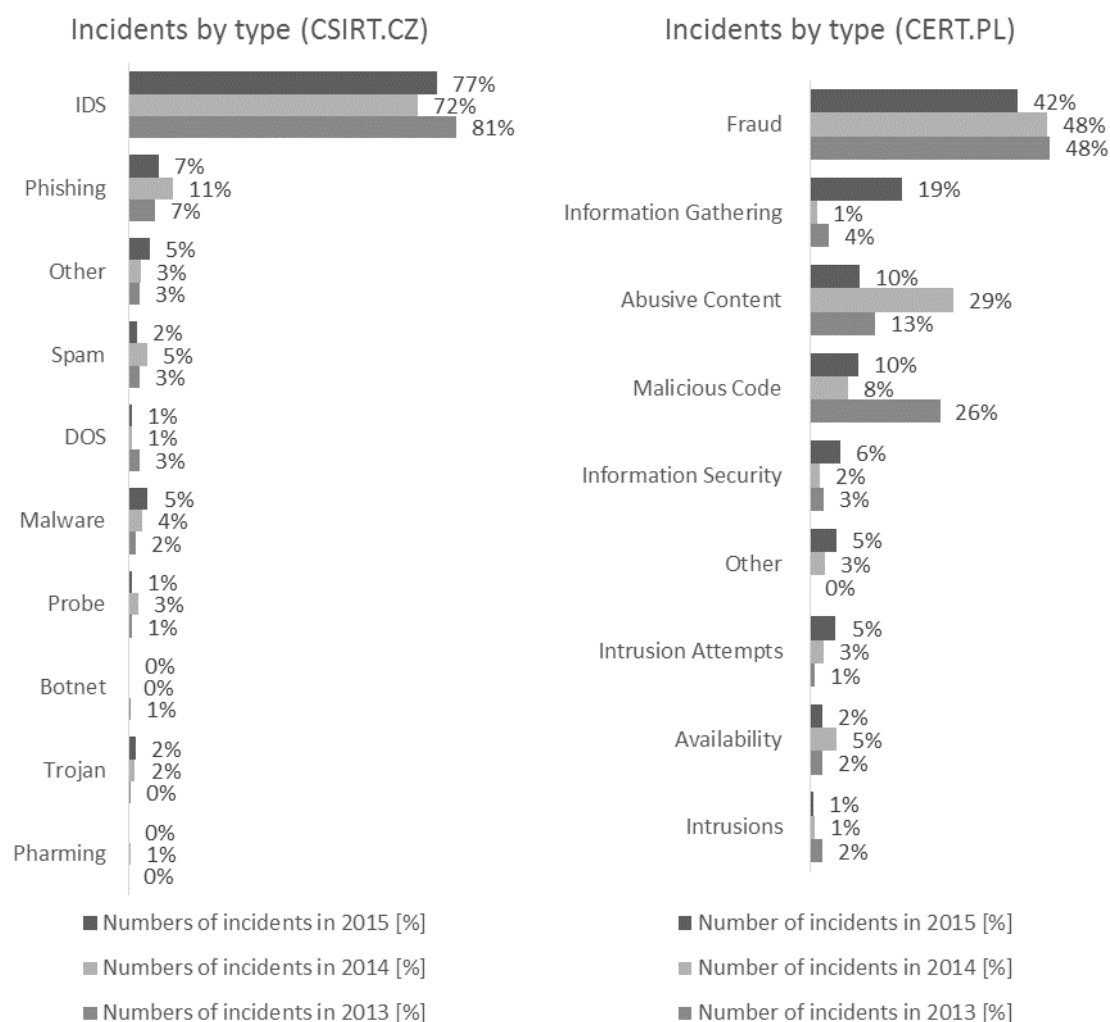
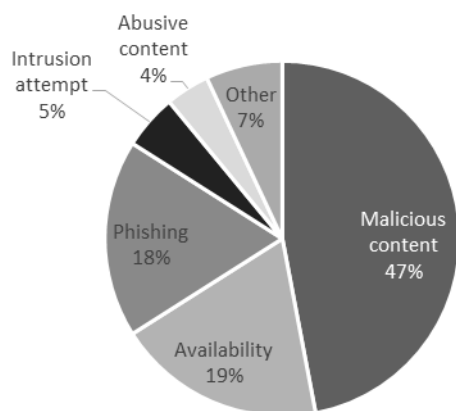


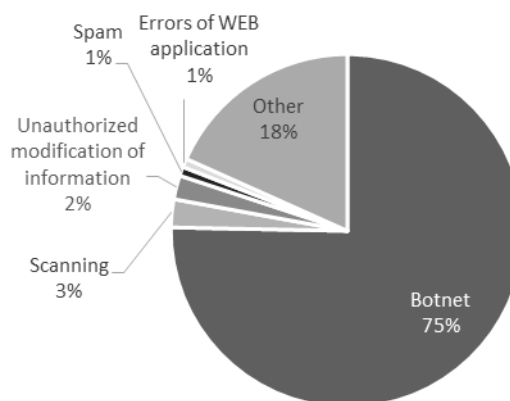
*Chart 1: Numbers of incidents by type in the Czech Republic and Poland from the years 2013-2015 (CSIRT.CZ, CERT.PL)*

Another results present the “Reports on the State of Cyber Security of the Czech Republic” and “Report on the State of Cyberspace Security in Poland” (see: Chart 2). For three years the “Botnet” has been the most popular attack in Poland. In the Czech republic “Malicious content” was common in 2013 and 2014. In 2015 the most popular was “breach information security”.

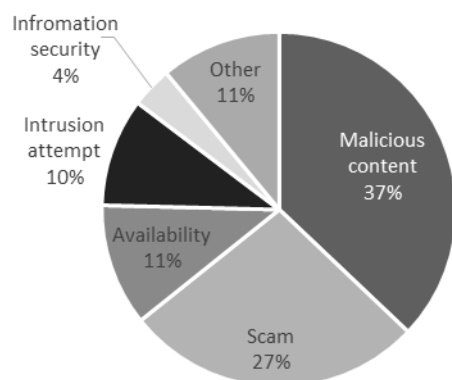
Incidents by type in 2013 (Gov.CERT.CZ)



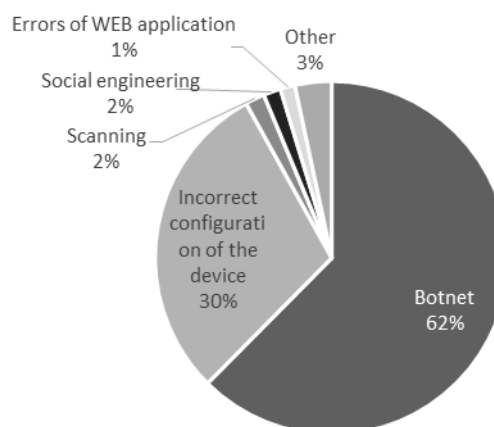
Incidents by type in 2013 (CERT.GOV.PL)



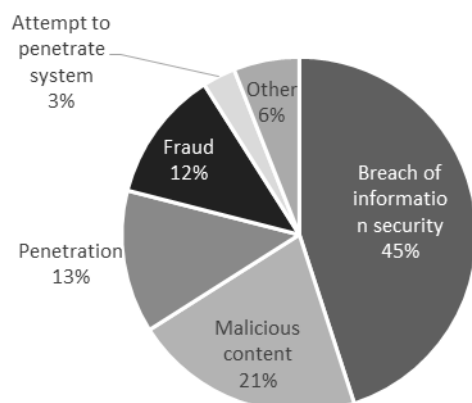
Incidents by type in 2014 (Gov.CERT.CZ)



Incidents by type in 2014 (CERT.GOV.PL)



Incidents by type in 2015 (Gov.CERT.CZ)



Incidents by type in 2015 (CERT.GOV.PL)

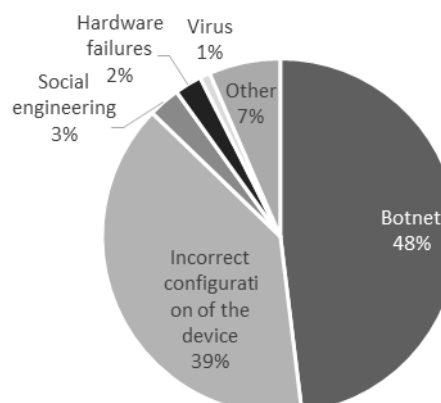


*Chart 2: Numbers of incidents by type in the Czech Republic and Poland from the years 2013-2015 (GovCERT.CZ, CERT.GOV.PL)*

#### 4. DISCUSSION

A considerable issue in comparing information security incidents between different countries is the fact, that different CERT or CSIRT teams have various classifications of incidents. For example, in the surveyed countries, Czech Republic and Poland:

- CSIRT.CZ has the following classification of incidents: Botnet, Bounce, Copyright, Crack, DoS/DdoS, Malware, Pharming, Phishing, Portscan, Probe, Spam, Trojan, Virus, Unknown, Other;
- CERT.PL has the classification from the eCSIRT WP4 Clearinghouse Policy (eCSIRT, 2003):
  - Abusive content (Spam, Harassment, Child/Sexual/Violence/...);
  - Malicious code (Virus, Worm, Trojan, Spyware, Dialer);
  - Information gathering (Scanning, Sniffing, Social engineering);
  - Intrusion attempts (Exploiting of known Vulnerabilities, Login attempts, New attack signature);
  - Intrusions (Privileged Account Compromise, Unprivileged Account Compromise, Application Compromise);
  - Availability (DoS, DDoS, Sabotage);
  - Information security (Unauthorized access to information, Unauthorized modification of information);
  - Fraud (Unauthorized use of resources, Copyright, Masquerade);
  - Other (Incidents, which do not fit to listed types).
- GovCERT.CZ has the same classification as CERT.PL, but there is also a possibility to report the incident by category:
  - "I – a minor cybersecurity incident,
  - II – a serious cybersecurity incident,
  - III – a very serious cybersecurity incident",and another type, such as: "Cybersecurity incident caused by a cyberattack or other events leading to a breach of the system or to limit the availability of services", "Cybersecurity incidents caused by malicious code", "Cybersecurity incident compromised due to technical measures", "Cybersecurity incidents caused by violation of organizational measures", "Cybersecurity incident associated with the manifestation of the permanent acting threats", "Other cybersecurity incidents caused by cyberattack", "Cybersecurity incident involving a distortion of the confidentiality of the primary assets", "Cybersecurity incident causing disruption of the integrity of the primary assets", "Cybersecurity incident causing disruption in the availability of primary assets" and "Cybersecurity incident causing the combined impacts mentioned above".
- The CERT.GOV.PL has own prepared classification of threats, which includes not only the threats but also the vulnerabilities, divided in the intentional or unintentional actions (see: Table 3).

*Table following on the next page*

Table 3: Incidents classification by CERT.GOV.PL (CERT.GOV.PL)

|                          | THREATS                      | VULNERABILITIES                            |            |                                          |                                       |                                                  |
|--------------------------|------------------------------|--------------------------------------------|------------|------------------------------------------|---------------------------------------|--------------------------------------------------|
| INTENTIONAL ACTIVITIES   | Malicious code               | Virus                                      | Worm       | Trojan                                   | Dialer                                | Botnet                                           |
|                          | Security breach              | Unauthorized login                         |            | Account Compromise / Brute force attack  |                                       | Application Compromise                           |
|                          | Information gathering        | Abusive content                            | Harassment |                                          | Copyright infringement                | Disinformation                                   |
|                          | Publications in the Internet | Scanning                                   | Sniffing   | Social Engineering                       | Spyware                               | Spam                                             |
|                          | Sabotage                     | Unauthorized access to information         |            | Unauthorized modification of information |                                       | Denial of Service/ Distributed Denial of Service |
|                          |                              | Erase data                                 |            | The use of vulnerabilities in devices    |                                       | The use of application vulnerability             |
|                          | Human factor                 | Violation of security procedures           |            |                                          | Violation of applicable laws          |                                                  |
|                          | Cyberterrorism               | Terrorist offences committed in cyberspace |            |                                          |                                       |                                                  |
| UNINTENTIONAL ACTIVITIES | Accidents and random events  | Hardware failures                          |            | Connection failures                      |                                       | Software failures (errors)                       |
|                          | Human factor                 | Violation of procedures                    | Negligence |                                          | Incorrect configuration of the device | Copyright infringement                           |

As it can be seen, that government teams in both the countries, the Czech Republic and Poland, expanded their classification of incidents. The reports GovCERT.CZ presents the classification of incidents proposed by eCSIRT, but only by types without incident subtypes, whereas CERT.GOV.PL shows incidents divided only into the vulnerability (level subtypes of the Czech classification). Quite a large share of "other" incidents in total may indicate that classification scheme should be revised.

## 5. CONCLUSION

A growing trend of the number of incidents can be observed both in the Czech Republic and in Poland. The most popular incidents in Czech Republic are: malicious content, breach information security and incidents detected by IDS systems. In Poland – botnet clients and frauds. Information on incidents collected by CERT or CSIRT teams is important for security systems administrators. Based on the data of the most frequent types of incidents they can focus on the security measures against these incidents and thus prevent them in future. Unfortunately, the comparative analysis of data is quite complicated by the fact that there are no uniform template of reports and incidents classification for all countries.

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## BUSINESS CYCLES SYNCHRONIZATION WITHIN THE EU COUNTRIES: THE SPECTRAL ANALYSIS

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### ABSTRACT

*The nature of the business cycle is one of the widely discussed topics in economic science. The very existence of business cycles is quite controversial. When we add the problem of economic performance to the issue of synchronization between different sets of countries, we come to the subject of our study. In this paper, we deal with the existence as well as the synchronization of business cycles. The synchronization is studied using the spectral analysis. The spectral analysis explores the cyclical patterns of data, and its main purpose is to decompose original series into an infinite sum of periodic functions, each of which has a different frequency. The advantage and uniqueness of spectral analysis are that it enables the identification and characterization of nonlinear trends and the dominant cycle, including perennial and seasonal components which characterize each time series. The aim of this paper is to determine the existence of the business cycle and evaluate the synchronization process within the EU member states. By studying the data on the gross domestic product and related macroeconomic variables for the EU countries, we offer some conclusions on the nature of business cycle synchronization, cyclical regularities, and macroeconomic interdependence.*

**Keywords:** *advanced time series analysis, economic cycles, spectral analysis, synchronization, EU*

### 1. INTRODUCTION

Understanding the nature of the business cycle is one of the widely discussed topics in economic science today. The synchronization of business cycles between different countries is interesting since it can provide answers to some specific economic questions, such as the common policy, international trade dynamics and even the creation and duration of economic crises. The synchronization issue also determines the need for independent monetary and fiscal policies, and in that manner the degree of (required) cooperation between the countries observed. The main question of this paper is related to the nature of business cycles in the countries of the European Union (EU) and to their synchronicity. Determining the existence as well as the duration of business cycles by spectral analysis technique has become an indispensable part of a contemporary business cycle analysis. The spectral analysis explores the cyclical patterns of data, and its main purpose is to decompose the original series into an infinite sum of periodic functions, each of which has a different frequency. The advantage, hence the uniqueness of spectral analysis is that it enables the identification and characterization of nonlinear trends and the dominant cycle, including perennial and seasonal components which characterize each time series. The aim of this paper is to determine the existence of the business cycle and evaluate the synchronization process within the EU member states as reflected in the degree of synchronicity

between the countries cycles. The degree of synchronicity is very important because it depends on many issues, such as the question of a common foreign policy and international trade, common currency, common monetary policy, common fiscal policy, etc. By studying the data on gross domestic product and related macroeconomic variables for the EU countries, we offer some conclusions on the nature of business cycle synchronization, cyclical regularities, and macroeconomic interdependence.

## 2. A SHORT REVIEW OF THE LITERATURE

The synchronization of business cycles as a topic is very thoroughly described. An interesting review of both the theoretical and the empirical questions is provided by Škare and Tomić (2015). Though they concluded that the number of researches on the synchronization issue is rather over-exaggerated, they also pointed out that further empirical studies should be directed towards testing the legitimacy of convergence aspirations and its economic policy implications on three levels: (i) country-specific cycle-growth relationship, (ii) business cycle of periphery in comparison to the centre of development and only then (iii) proceed and uncover stylized facts about the synchronicity of national cycles with respect to, for example, the Euro area business cycle. Our analysis *de facto* aims at uncovering new facts on the EU synchronization.

As we already mentioned, the existing literature on the issue of cycle synchronicity is vast, especially one dealing with the EU and/or Eurozone. With three different measures of synchronisation, Camacho, Perez-Quiros and Saiz (2006) found relatively high linkages across the EU countries, but these are prior to the establishment of the monetary union. Mansour (2003) found that the world component is generally more important than the European component; the European component varies widely among EU members. Van Aarle et al. (2008) came to the overall conclusion that on average, the business cycle convergence in the Euro area has not changed substantially since the introduction of the euro. Walti (2009), by using probit regressions of synchronicity, found that although the introduction of the euro has raised the likelihood of business cycle synchronicity, it has not affected the relative amplitude of business cycles. Antonakakis and Tondl (2011) concluded that business cycles have become more synchronised in the EU. Mink et al. (2012) suggested that the synchronicity and similarity between output gaps of individual countries and the reference cycle fluctuate over time, and often are not higher than would be expected under output gap independence (see Tomić and Kenjereš, 2015). Next, Woźniak and Paczyński (2007) used the Kalman filter to extract time-varying spectral properties of GDP growth rates within the new member states and the Eurozone in order to estimate the coherence between these series. The analysis of individual spectra has confirmed the existence of several common features such as concentration of power in the low business cycle frequency ranges. Montoya and Haan (2007) also analyzed the synchronization of business cycles in the Eurozone countries. The authors came to the conclusion that there is a synchronization period between the observed countries, and that its duration decreases in time. A more extensive research involving a larger period and more countries was conducted by Artis, Chouliarakis and Harischandra (2011) entitled 'Business cycle synchronization since 1880'. This work showed that there exists synchronization between the countries that are in EU conjecture and those countries that are in fact related by a language factor. From the second conclusion we can deduct that these synchronization processes accelerate between the surveyed countries in a time perspective.

We can also find interesting papers on this subject that evaluate business cycle synchronicity on a more global scale. Barro and Lee (2011) studied business cycles and the impact of inflation targeting on the creation of business cycles. The conclusion of this study is that inflation targeting helps to create business cycles and lead to a common monetary union within the

surveyed countries. Regional integration and interconnection between the countries of Central America on the basis of cycle coherence is the theme of the work of Fiess (2007). By observing business cycles, Fiess confirmed the thesis about the benefits of macroeconomic coordination between Central America and the USA.

If we take the individual impact of business cycles and their synchronization, we can see that many authors address this issue too. Inklaar, Jong-a-Pin and Hann (2008), Duval et al. (2014) and Rana (2007) analyzed the impact of international trade on business cycles synchronicity. What is surprising in this work is the result which suggested that there is, indeed, a substantial impact of international trade on the synchronization processes. However, it is much weaker than expected. Another effect related to the cycle topic is the impact of globalization on business cycles (see Kose, Prasad and Terrones, 2003 and Lee, 2010). Both came to the conclusion that the increasing degree of globalization is related to the increasing level of synchronicity between the business cycles.

In addition to the different impact on business cycles, we have different methods of observing possible synchronization between the cycles. In our work, we use the technique of spectral analysis. We can mention a few papers related to the spectral analysis. There is one by Sella et al. (2012), on the business cycle synchronization for Italy, the Netherlands and the UK. The conclusion of their work is the existence of synchronization of business cycles between these three countries for the duration (on average) of five years for one cycle. The spectral analysis within the international synchronization process is a part of the work by Dua and Sharma (2013), too. They concluded that there exists a synchronization process for various set of countries, which was much more pronounced in the period from 1990 to 2010. For period before the 1990, the severity of the business cycle dynamics is much smaller.

### **3. DATA, METHODOLOGY AND RESULTS**

Data were collected from the International Financial Statistics (IFS) database. We looked at the following variables: real gross domestic product (**GDP**), real household consumption (**HC**), real government consumption (**GC**), real import (**IMP**), real export (**EXP**) and real gross fixed capital formation (**GFCF**). Data were taken for all EU member countries for the years available (ranging from 1964 to 2016) in their quarterly form.

#### **3.1. Singular Spectrum Analysis**

Singular Spectrum Analysis or the SSA is a nonparametric method often used in the business cycle analysis. It tries to overcome the problems of finite sample length and noisiness of sampled time series not by fitting an assumed model to the available series, but by using a data-adaptive basis set, instead of the fixed sine and cosine of the Blackman-Tukey method. The spectral analysis explores the cyclical patterns of data, and its main purpose is to decompose the original series on an infinite sum of periodic functions, each of which has a different frequency. The advantage of spectral analysis is that it enables the identification and characterization of nonlinear trends but also the dominant cycle, including perennial and seasonal components, which is an important feature of each time series. Vautard and Ghil (1989; VG hereafter) analyzed the formal similarity between the classical lagged-covariance analysis and the method of delays. They exploited this similarity further by pointing out that pairs of SSA eigenmodes corresponding to nearly equal eigenvalues and associated (temporal) principal components that are nearly in phase quadrature can efficiently represent a nonlinear, anharmonic oscillation. This is due to the fact that a single pair of data-adaptive eigenmodes can capture the basic periodicity of a boxcar or seesaw-shaped oscillation, rather than necessitating the many overtones that will appear in methods with fixed basis functions.

There are three basic steps in SSA (see Golyandina, Nekrutkin and Zhigljavsky, 2001): i) embedding the sampled time series in a vector space of dimension  $M$ ; ii) computing the  $M \times M$  lag-covariance matrix  $C_D$  of the data; and iii) diagonalizing  $C_D$ . **Step (i)**: The time series  $\{x(t): t=1, \dots, N\}$  is embedded into a vector space of dimension  $M$  by considering  $M$  lagged copies  $\{x(t-j): j=1, \dots, M\}$  thereof. The choice of the dimension  $M$  is not obvious, but SSA is typically successful at analyzing periods in the range  $(M/5, M)$ . **Step (ii)**: One defines the  $M \times M$  lag-covariance matrix estimator  $C_D$ . There are three distinct methods used widely to define  $C_D$ . In the BK (Broomhead and King) algorithm, a window of length  $M$  is moved along the time series, producing a sequence of  $N' = N - M + 1$  vectors in the embedding space. This sequence is used to obtain the  $N' \times M$  trajectory matrix  $D$ , where the  $i$ -th row is the  $i$ -th view of the time series through the window. In this approach,  $C_D$  is defined by:

$$C_D = \frac{1}{N'} D^T D \quad (1)$$

In the **VG** algorithm,  $C_D$  is estimated directly from the data as a Toeplitz matrix with constant diagonals, i.e., its entries  $C_{ij}$  depend only on the lag  $|i-j|$ :

$$C_{ij} = \frac{1}{N-|i-j|} \sum_{t=1}^{N-|i-j|} x(t)x(t+|i-j|) \quad (2)$$

Burg (1978) covariance estimation is an iterative process based on fitting an AR model with a number of AR components equal to the SSA window length. Both the Burg and VG methods impose a Toeplitz structure upon the autocovariance matrix whereas the BK method does not. The Burg approach in principal should involve less "power leakage" due to the finite length of the time series and should therefore improve resolution. However, the Burg estimate can induce significant biases when nonstationarities and very low-frequency variations are present in the series. Thus in some cases it will be worthwhile to try the VG method. Also, for long series ( $N$  on the order of 5,000), the VG estimate is less computationally burdensome and thus is completed more quickly. The eigenvalues,  $\lambda_k$ , and eigenvectors (or empirical-orthogonal functions),  $E_j^k$ , of this matrix are determined and sorted in descending order of  $\lambda_k$ , where indices  $j$  and  $k$  vary from 1 to  $M$ . The  $k$ th principal component is:

$$\alpha_i^k = \sum_{j=1}^M x_{i+j} E_j^k \quad 0 \leq i \leq N-M \quad (3)$$

Each component of the original time series identified by SSA can be reconstructed, with the  $k$ th reconstructed component (RC) series given by:

$$x_i^k = \frac{1}{M} \sum_{j=1}^M \alpha_{i-j}^k E_j^k \quad M \leq i \leq N-M+1 \quad (4)$$

In practice, the VG method is more prone (than the Burg method) to numerical instabilities (yielding negative eigenvalues) when pure oscillations are analyzed. The BK method is thus somewhat less prone to problems with nonstationary time series, although the VG method seems untroubled by all but the most extreme nonstationarities. However, the Toeplitz methods do appear to yield more stable results under the influence of minor perturbations of the time series (Burg, 1978).

Finally, **step (iii)**: The covariance matrix calculated from the  $N$  sample points, is then diagonalized and the eigenvalues are ranked in decreasing order. The eigenvalue  $\{\lambda_k, k=1, \dots, M\}$  gives the variance of the time series in the direction specified by the corresponding eigenvector  $E_k$ ; the square roots of the eigenvalues are called singular values and the corresponding set the singular spectrum. These terms give SSA its name; BK showed how to

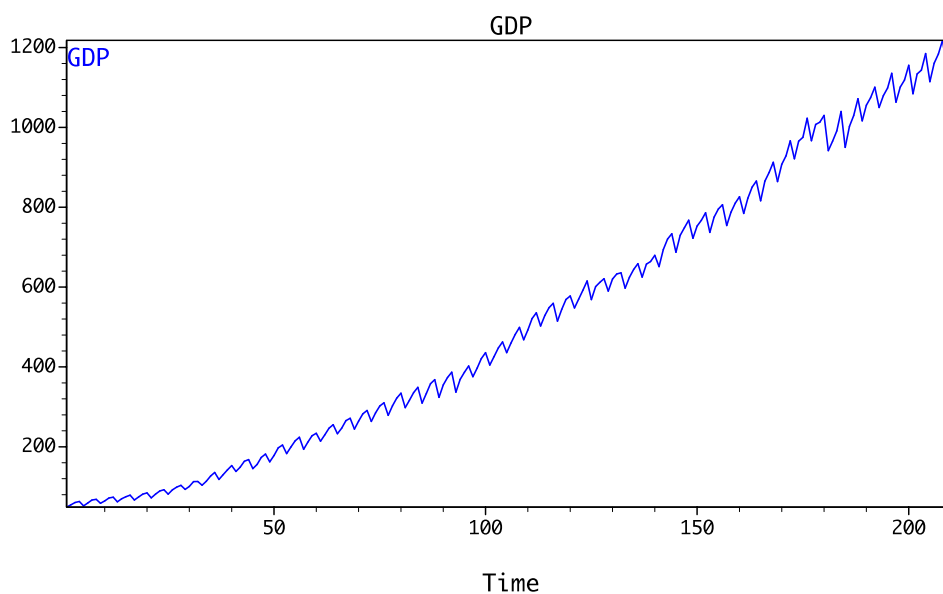
obtain singular spectrum by SVD applied to the trajectory matrix  $D$ . Vautard and Ghil (1989) called the  $E_k$  temporal empirical orthogonal functions (EOFs), by analogy with the meteorological term used when applying PCA in the spatial domain.

### 3.2. Empirical results

This section presents the results of the research. The results will be explained by following the variables for Austria as an example. Austria as a demonstration country was chosen randomly. The observed variables are gross domestic product, private consumption, government consumption, imports, exports and gross fixed capital formation. By studying the movements of the variables (namely GDP but also other key variables), we will come to the conclusion about the existence and the nature of the business cycle in the EU. In addition, we will present the results for the whole set of countries.

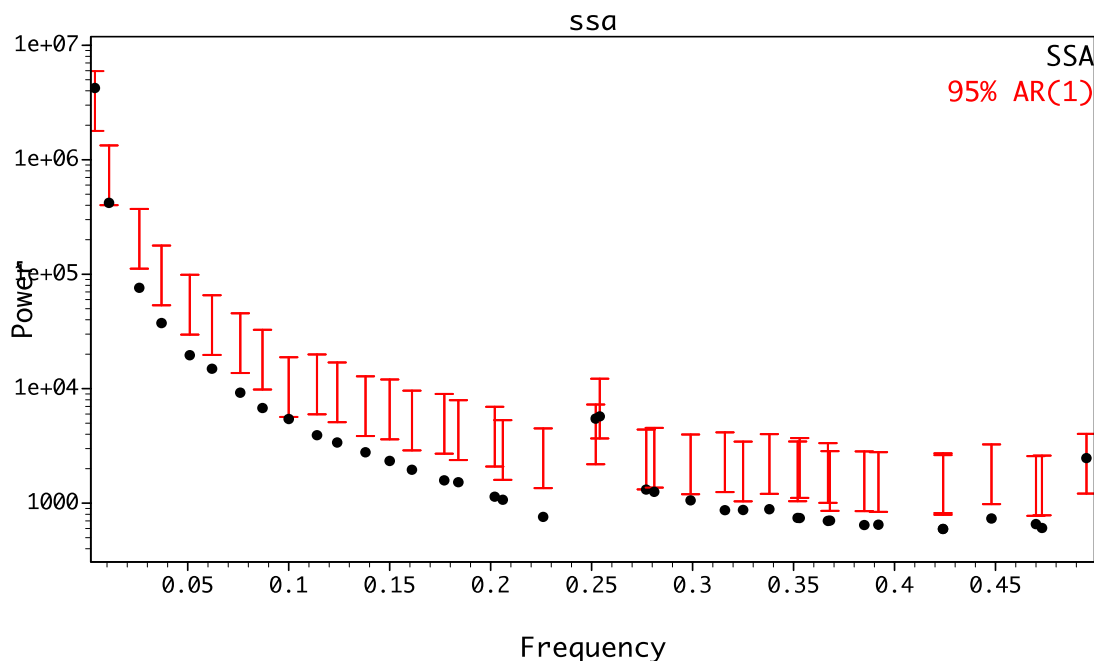
Looking at the *Figure 1* we can depict a very large seasonal influence within the observed variables. Data are presented on a quarterly basis for the period from 1964 to 2016. The following graph (*Figure 2*) shows the singular spectrum analysis of eigenspectrum decompositions of the GDP for Austria. We see that the trend component in the series is strong, with two SSA components explaining almost 66,9% of the variance. The trend component is clearly identified by SSA 1-2 as is visible from the graphical presentation. Error bands (95% confidence level) are estimated from surrogate series against the null hypothesis (red noise). Identified spectral components fall into the error band with the SSA 1-2 at a 90% confidence level. Dots (representing evaluated eigenvalues) falling into 5<sup>th</sup> and 95<sup>th</sup> red noise percentile are not statistically significant. Oscillatory components (signal) SSA 19-20 is statistically significant because it explains 21% of the total variance of the GDP series. In this particular case, the eigenvalues 19-20 indicate components whose power is significantly different from the simulated red noise. Estimation of the characteristic frequency reveals that the pair 19-20 is associated with an oscillatory pattern of about 4.5 years, which explains the 21% of the series total variance.

**Figure 1. Austrian GDP**



Source: IFS (2016).

**Figure 2. SSA eigenspectrum decomposition (Austrian GDP)**



Source: Authors' calculation.

Table 1 displays the results of SSA analysis for all monitored variables for all countries of the EU. All results indicate that the patterns significantly differ from simulated red noise components at the 95% confidence in an ensemble of 1000 noise realizations. Partial variances are presented in parentheses. The table suggests quite homogeneous cyclical behaviour among all indicators for each economy.

Namely, results indicate that we can evaluate two groups of countries. The first group includes developed countries such as France, Italy, UK, Sweden, Germany, Ireland, Spain, and Portugal. This group is characterized by relatively weak cyclical movement, so we cannot determine (with a high probability) the existence of business cycles in the short-term. This result stems from the size of their economy and the moment of entry into the EU. These are generally larger economies (most of them have been part of the developed European market for a long time) which have less dependence on other countries due to their size and development imperatives. All other countries are in the second group out of which we can identify the existence of business cycles and their synchronization in the duration of between four and five years. These countries are interesting for the analysis since they are mostly underdeveloped countries or developing countries, and are highly dependent on the developed parts of the EU. Business cycle synchronicity arises, therefore, from that bond. On the other hand, due to their (inter)dependence and underdevelopment, cyclical behaviour within these countries is more volatile in comparison to the first group. Hence, economic performance has cyclical character and thus affects the shape of business cycles in these countries. The way out of the crisis is conditioned by the intensity of dependence on the developed member states. When observing variables separately, we can come to the conclusion that in most cases the highest level of the percentage of variance is explained by the variable GDP. The following two variables that explain variance significantly are household and government consumption.

The variables of exports, imports and gross fixed capital formation have lower variance though still quite relevant, which drives us to the conclusion that business cycle synchronization can also be observed through these variables.

Generally, results suggest that business cycles in the second group of countries are manifested through real GDP movements, as well as through household and government consumption suggesting that these countries can still use their fiscal policies in an expansive manner. This argument could be extended to the monetary policy, considering that some of the countries are still not a part of the Eurozone. In addition, by influencing its export and import, these countries could also determine or at least affect a certain phase of business cycle as its EU synchronization process was partially influenced by trade developments.

Overall results and graphs suggest that synchronicity levels fluctuated substantially over time, however, they have a tendency of decreasing with a higher synchronization of the whole EU. The global crisis certainly had a great negative effect upon the EU business cycle coherence, as synchronicity decreased similarly in many other Central and East European countries, meaning that the impact of the euro introduction upon the business cycle coherence was not as high as expected, which supports the general findings of other related studies (Tomić and Kenjereš, 2015). Though we have lately witnessed some de-synchronization processes, the stable monetary policy conducted by the European Central Bank did not amplify the negative trends in business cycle developments in the EU, therefore, it represented a close substitute for national monetary policies. From all of the above, we expect that the topic of EU synchronization will become increasingly important and relevant in the future.

*Table following on the next two pages*



**Table 1. SSA analysis: summary of results**

|         | 5 y    | 4,5 y  | 4 y    |         | 5 y    | 4,5 y  | 4 y    |           | 5 y    | 4,5 y  | 4 y     |
|---------|--------|--------|--------|---------|--------|--------|--------|-----------|--------|--------|---------|
| Austria |        |        |        | Belgium |        |        |        | Bulgaria  |        |        |         |
| GDP     |        | *(21%) |        | GDP     |        | *(34%) |        | GDP       |        | *(33%) |         |
| HC      |        | *(33%) |        | HC      |        | *(19%) |        | HC        |        | *(41%) |         |
| GC      |        | *(19%) |        | GC      |        |        | *(21)  | GC        |        | *(18%) |         |
| EXP     |        |        | *(18%) | EXP     |        |        | *(17%) | EXP       | *(11%) |        |         |
| IMP     |        |        | *(14%) | IMP     |        | *(30%) |        | IMP       | *(14%) |        |         |
| GFCF    |        | *(24%) |        | GFCF    |        | *(8%)  |        | GFCF      | *(9%)  |        |         |
|         | 5 y    | 4,5 y  | 4 y    |         | 5 y    | 4,5 y  | 4 y    |           | 5 y    | 4,5 y  | 4 y     |
| Croatia |        |        |        | Cyprus  |        |        |        | Czech     |        |        |         |
| GDP     |        |        | *(31%) | GDP     |        |        | *(41%) | GDP       |        |        | *(22%)  |
| HC      |        | *(33%) |        | HC      |        | *(19%) |        | HC        |        |        | *(19%)  |
| GC      |        | *(14%) |        | GC      |        |        | *(22%) | GC        |        | *(18%) |         |
| EXP     |        | *(17%) |        | EXP     |        |        | *(39%) | EXP       | *(41%) |        |         |
| IMP     |        | *(11%) |        | IMP     |        |        | *(15%) | IMP       | *(39%) |        |         |
| GFCF    |        |        | *(21%) | GFCF    | *(18%) |        |        | GFCF      |        | *(18%) |         |
|         | 5 y    | 4,5 y  | 4 y    |         | 5 y    | 4,5 y  | 4 y    |           | 5 y    | 4,5 y  | 4 y     |
| Denmark |        |        |        | Estonia |        |        |        | Euro-Area |        |        |         |
| GDP     |        | *(23%) |        | GDP     |        |        | *(41%) | GDP       |        |        | *(5%)   |
| HC      |        | *(18%) |        | HC      |        |        | *(37%) | HC        |        |        | *(4%)   |
| GC      |        | *(27%) |        | GC      |        | *(39%) |        | GC        |        |        | *(3%)   |
| EXP     |        | *(21%) |        | EXP     |        | *(21%) |        | EXP       |        |        | *(1%)   |
| IMP     |        |        | *(9%)  | IMP     |        | *(19%) |        | IMP       |        |        | *(4%)   |
| GFCF    | *(22%) |        |        | GFCF    | *(24%) |        |        | GFCF      |        |        | *(3%)   |
|         | 5 y    | 4,5 y  | 4 y    |         | 5 y    | 4,5 y  | 4 y    |           | 5 y    | 4,5 y  | 4 y     |
| Finland |        |        |        | France  |        |        |        | Germany   |        |        |         |
| GDP     |        | *(19%) |        | GDP     |        |        | *(5%)  | GDP       |        |        | *(0,5%) |
| HC      |        | *(41%) |        | HC      |        |        | *(2%)  | HC        |        |        | *(1%)   |
| GC      |        | *(34%) |        | GC      |        |        | *(13%) | GC        |        |        | *(0,2%) |
| EXP     |        | *(33%) |        | EXP     |        |        | *(17%) | EXP       |        |        | *(13%)  |
| IMP     |        |        | *(19%) | IMP     |        |        | *(1%)  | IMP       |        |        | *(12%)  |
| GFCF    |        | *(22%) |        | GFCF    |        |        | *(2%)  | GFCF      |        |        | *(0,9%) |
|         | 5 y    | 4,5 y  | 4 y    |         | 5 y    | 4,5 y  | 4 y    |           | 5 y    | 4,5 y  | 4 y     |
| Greece  |        |        |        | Hungary |        |        |        | Ireland   |        |        |         |
| GDP     |        |        | *(44%) | GDP     | *(29%) |        |        | GDP       |        |        | *(1%)   |
| HC      |        |        | *(39%) | HC      | *(32%) |        |        | HC        |        |        | *(2%)   |
| GC      |        |        | *(29%) | GC      | *(14%) |        |        | GC        |        |        | *(2,3%) |
| EXP     |        |        | *(21%) | EXP     |        | *(17%) |        | EXP       |        |        | *(1,7%) |
| IMP     |        |        | *(19%) | IMP     | *(19%) |        |        | IMP       |        |        | *(11%)  |
| GFCF    |        |        | *(34%) | GFCF    |        | *(23%) |        | GFCF      |        |        | *(9%)   |

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|            | 5 y    | 4,5 y  | 4 y    |          | 5 y    | 4,5 y  | 4 y    |             | 5 y    | 4,5 y  | 4 y    |
|------------|--------|--------|--------|----------|--------|--------|--------|-------------|--------|--------|--------|
| Italy      |        |        |        | Latvia   |        |        |        | Lithuania   |        |        |        |
| GDP        |        |        | *(27%) | GDP      | *(39%) |        |        | GDP         |        |        | *(38%) |
| HC         |        |        | *(26%) | HC       | *(21%) |        |        | HC          |        |        | *(33%) |
| GC         |        | *(31%) |        | GC       | *(19%) |        |        | GC          |        |        | *(41%) |
| EXP        |        | *(39%) |        | EXP      |        | *(21%) |        | EXP         |        | *(19%) |        |
| IMP        |        | *(28%) |        | IMP      | *(13%) |        |        | IMP         |        |        | *(22%) |
| GFCF       |        | *(19%) |        | GFCF     |        | *(19%) |        | GFCF        |        |        | *(21%) |
|            | 5 y    | 4,5 y  | 4 y    |          | 5 y    | 4,5 y  | 4 y    |             | 5 y    | 4,5 y  | 4 y    |
| Luxembourg |        |        |        | Malta    |        |        |        | Netherlands |        |        |        |
| GDP        |        | *(34%) |        | GDP      |        |        | *(51%) | GDP         |        |        | *(3%)  |
| HC         |        | *(32%) |        | HC       |        |        | *(42%) | HC          |        |        | *(2%)  |
| GC         |        | *(19%) |        | GC       |        |        | *(21%) | GC          |        |        | *(1%)  |
| EXP        |        | *(25%) |        | EXP      |        |        | *(27%) | EXP         |        |        | *(7%)  |
| IMP        |        | *(27%) |        | IMP      |        | *(17%) |        | IMP         |        |        | *(11%) |
| GFCF       |        | *(21%) |        | GFCF     |        | *(23%) |        | GFCF        |        |        | *(4%)  |
|            | 5 y    | 4,5 y  | 4 y    |          | 5 y    | 4,5 y  | 4 y    |             | 5 y    | 4,5 y  | 4 y    |
| Poland     |        |        |        | Portugal |        |        |        | Romania     |        |        |        |
| GDP        |        | *(29%) |        | GDP      |        |        | *(1%)  | GDP         | *(44%) |        |        |
| HC         |        | *(31%) |        | HC       |        |        | *(2%)  | HC          | *(39%) |        |        |
| GC         |        | *(33%) |        | GC       |        |        | *(1%)  | GC          | *(41%) |        |        |
| EXP        |        |        | *(21%) | EXP      |        |        | *(3%)  | EXP         | *(28%) |        |        |
| IMP        |        | *(21%) |        | IMP      |        |        | *(1%)  | IMP         | *(21%) |        |        |
| GFCF       |        | *(24%) |        | GFCF     |        |        | *(2%)  | GFCF        |        | *(19%) |        |
|            | 5 y    | 4,5 y  | 4 y    |          | 5 y    | 4,5 y  | 4 y    |             | 5 y    | 4,5 y  | 4 y    |
| Slovak     |        |        |        | Slovenia |        |        |        | Spain       |        |        |        |
| GDP        | *(22%) |        |        | GDP      |        | *(23%) |        | GDP         |        |        | *(1%)  |
| HC         | *(19%) |        |        | HC       |        | *(17%) |        | HC          |        |        | *(2%)  |
| GC         | *(25%) |        |        | GC       |        | *(34%) |        | GC          |        |        | *(3%)  |
| EXP        |        | *(33%) |        | EXP      |        | *(37%) |        | EXP         |        |        | *(7%)  |
| IMP        |        | *(31%) |        | IMP      |        | *(8%)  |        | IMP         |        |        | *(1%)  |
| GFCF       |        | *(19%) |        | GFCF     |        | *(31%) |        | GFCF        |        |        | *(5%)  |
|            | 5 y    | 4,5 y  | 4 y    |          | 5 y    | 4,5 y  | 4 y    |             |        |        |        |
| Sweden     |        |        |        | UK       |        |        |        |             |        |        |        |
| GDP        |        |        | *(4%)  | GDP      |        |        | *(1%)  |             |        |        |        |
| HC         |        |        | *(2%)  | HC       |        |        | *(2%)  |             |        |        |        |
| GC         |        |        | *(4%)  | GC       |        |        | *(1%)  |             |        |        |        |
| EXP        |        |        | *(5%)  | EXP      |        |        | *(1%)  |             |        |        |        |
| IMP        |        |        | *(9%)  | IMP      |        |        | *(2%)  |             |        |        |        |
| GFCF       |        |        | *(5%)  | GFCF     |        |        | *(1%)  |             |        |        |        |

Source: Authors' calculation.

#### 4. CONCLUDING REMARKS

This paper analyzed the problem of the synchronization of business cycles within the EU. For each country, we observed six fundamental indicators of a real aggregate economy (GDP, public and private consumption, export and import, and gross fixed capital formation). The results obtained through the SSA (Singular Spectrum Analysis) analysis showed the existence of very homogeneous cyclical patterns between the observed variables for all countries. SSA analysis is used in this study due to its features and advantages. The possibilities offered by SSA analysis are finding trends for different resolutions. A further possibility is drawing seasonal components, and a very good ability to predict the movement of variables in the future. The advantages of this analysis are that it does not require much knowledge of the parametric model of time series, it works with a wide spectrum of real-life time series, it matches up for non-stationary time series and allows finding of the cyclical structure within the short-term analysis.

The initial goal of the study was to evaluate the nature of business cycles in the surveyed countries. In addition, we wanted to determine if there is a mutual compatibility i.e. synchronicity between the various countries. Using spectral analysis technique and its benefits when observing oscillatory patterns in the time series, we observed the data for a specific period within frequency patterns. We came to several conclusions. First, similar business cycles exist in all countries, and secondly, we can derive two groups of countries in respect to the synchronization process. The first group of countries represented by developed EU countries reveals no specific evidence on the existence of a relevant business cycle pattern. The second group of countries presented through underdeveloped or less developed EU countries indicated the existence of business cycles that are highly synchronized in a period between four and five years. Looking at the graphical displays of the SSA analysis for these countries, we can clearly track an oscillatory pattern, which is marked by a very high percentage of variance. The most oscillatory pattern is visible in the variables of GDP, although it is quite pronounced also in other variables. We noticed that there is a great correspondence between our research results and most of the studies that have been done for a variety of observed variables, for different countries (namely EU) and for different periods of time. From these results, we can conclude that between the most of countries, there is a very high degree of synchronicity of business cycles. These countries are mainly less developed economies, and they became member countries in the latter stages of EU enlargement. The interconnection within the Union, real economic characteristics of developing countries and their dependence on developed countries have led to a great uniformity of the business cycle. The common monetary policy is one important factor that affects the synchronization process, but we found the relevance of trade, too. The impact of the economic crisis is much higher because of this interconnection, which is logical, therefore we can expect an even higher degree of synchronization of business cycles between the EU countries in the future, provided that the EU does not disintegrate.

Based on previous research, we can predict potential topics for future research. Namely, it would be useful to compare the movements and synchronization of business cycles for the whole Union with the movements of the same variables for the countries in the Eurozone. From such studies, we could put one question forward; namely, if there is a greater level of synchronization in those countries that have a common monetary policy, than in those outside the Euro zone; which would be logical to expect. Also, it would be interesting to compare the results with other countries that are members of some forms of cooperation or agreement, such as, NAFTA (North American Free Trade Agreement) etc. This would enable assessments of other associations and we could evaluate if membership in this association increases or

decreases synchronization tendencies between the countries. It would also be interesting to evaluate the results of various econometric methods with the results of our SSA analysis. In this way, we could assess the quality of distinct individual techniques, and therefore see whether their results overlap or not. Our deductions made above are just mere observations and could/should be subject to revision in the future.

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## A NEW CREATIVE MODEL OF DA'WAH AS A MEDIUM OF ECONOMIC DEVELOPMENT IN INDONESIA

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### **ABSTRACT**

*K.H. Muhammad Zaini Abdul Ghani known as Guru Sekumpul is a famous ulema in South Kalimantan, Indonesia for his concept in da'wah as he does not only preach delivering religious believe but also develops economic base benefitted the community. Guru Sekumpul builds and develops methods in preaching called da'wah bil-lisan, da'wah bil-hal, and da'wah bit-tadwin. da'wah bil-lisan is delivering a very interesting and enhancing summon that the recitation attracts up to 200,000 people. da'wah bil-hal is to practice what you preach the concept of Islamic economics reflected in where Guru Sekumpul establishes Al-Zahra Group Company with 108 products. With this concept, Sekumpul area which was once a wasteland now turns into a Satellites Sacred City of Sekumpul with tremendous economic development combining symbols of religion in terms of religious favor and the excitement to grow economic aspects. da'wah bit-tadwin is delivering the religious thought through written works. The masterpiece works of Guru Sekumpul is provided for free for those who want to deepen the study in the premises including food and drink as well as a wide range of facilities. da'wah supported by the economic capability of the preacher (Guru Sekumpul) creates path for economic growth and development of society favoring and practicing Islamic economics.*

**Keywords:** *da'wah, Guru Sekumpul, Indonesia, Islamic Economics, Ulema*

### **1. INTRODUCTION**

Guru Sekumpul presents Islamic thought of commanding the good and forbidding the evil in such an impressive way. Supported with deep knowledge about Islam, broad general knowledge, tacit cultural understanding, polite and warm as well as equipped with personal mastery of the commonly spoken language in the region, Guru Sekumpul attracts audiences to the deliver Islamic thought based on the Koran, the Hadith of the Prophet, and the Islamic Shari'a to strengthen faith, increase devotion, and emulate the Prophet Muhammad through three da'wah concepts: *da'wah bil-lisan*, *da'wah bil-hal*, and *da'wah bit-tadwin*. Those three concepts are later on known as Guru Sekumpul ways in developing economic models by opening new areas then developing a business model so that Guru Sekumpul possesses the capital to carry out da'wah and motivate the people to work harder to make Sekumpul Region become the center of the community's economy. Using qualitative research methods, the research was conducted in Martapura, South Kalimantan, Indonesia. The heterogeneous population were sampled using the techniques of non-probability sampling based on the snowball random sampling and purposive sampling. Data were collected through observation, interviews, and documentation.

Data were analyzed by using the models of Miles and Huberman (1992): data reduction, data display, and conclusion drawing / verification. Determining trustworthiness of data (Maleong, 2009) was conducted by using the test of credibility, transferability, dependability, and confirmability.

## 2. LITERATURE REVIEW

The holy Koran recital led by Guru Sekumpul (K.H. Muhammad Zaini Abdul Ghani) is an education-based da'wah. Guru Sekumpul guides on how to improve people themselves, their families, the immediate environment, and community-based moral education in order to build *akhlakul karimah* (good conduct). Wisdom is the knowledge of the truth and its practice, the precision in word and its practice (Munzier Suparta and Harjani Hefni, 2003). Learning through wisdom, Guru Sekumpul aims the recital participants to strengthen faith in God Almighty, increases devotion to God, and imitates the Prophet Muhammad. For this purpose, Guru Sekumpul develops *da'wah bil hal* that combines the study and the deeds in order to model Guru Sekumpul conduct which is based on an understanding of the life of the Prophet Muhammad as an example. Prophet Muhammad had been charged in the economic development during his childhood when he became a shepherd and performed business activities to ensure that economic development was essential for life. As assessed by Max Webber (1930) that religion and piety encourage the development of the economy (capitalism); The Protestant Ethic and the Spirit of Capitalism, especially in view of the Calvinists. What were assessed by Webber in his day was done by Prophet Muhammad (PBUH) 20 centuries ago. In line with Calvinists, Guru Sekumpul interpreted doing business (economics development) as a personal duty of Muslims and disseminate it to the people as the obligation of preachers. The spirit of economics development is interpreted as charity. The phrase is well known among Muslims: "Work for your world as if you live forever and for your year after as if you will die tomorrow." This is in line Hadith Prophet Muhammad (PBUH). If you are in the morning, do not wait for dusk. If you are in the evening, do not wait until morning. Take advantage of your common time before coming your sickness. Make the time of your life before coming your death (Riwayat AL-Hadiith, Bukhari). The spirit of religion and preaching by practicing what it preached, in terminology of Banjarese people, the native of South Kalimantan Indonesia is known as *kaji* (to examine) and *gawi* (to do). *Kaji* means to examine, both theoretically and empirically, in this case the economic development in order to get the belief that economic development is important and should be done. *Gawi* means practicing what is examined. Teachers Sekumpul believes it is as a religious obligation and an arena for conducting good deeds because that he develops a variety of businesses, teams up with the pilgrims, helps the pilgrims, or motivate them. This is consistent with the research of Clifford (1989) that reveals the central role of the Muslim middle class in the field of entrepreneurship in Modjokuto, East Java, Indonesia where trigger of economic development are pious Muslims based on the understanding that developing the economy as a religious duty. In the context of Muslims in Indonesia, according to Koentowijoyo (1999) reformists of Islam support capitalism in the Indonesian environment where the reformists of Islam are considered as a middle-class economic development. Study of Max Weber, Clifford Greetz and Koentowijoyo strengthen religious views in the work setting where making a living is an act of worship.

## 3. RESULTS AND DISCUSSION

Guru Sekumpul methods is practiced through learning the lessons intended for followers to strengthen faith in God Almighty, increase devotion to God, and imitate the Prophet Muhammad through *da'wah bil-lisan*, *da'wah bil-hal*, and *da'wah bit-tadwin* by implementing the concepts of local wisdom referred as *kaji* (to examine) and *gawi* (to do) that consider all possibilities and once believed, it will be carried out. The prominent feature

of Guru Sekumpul's method lays on *kaji* (to examine) and *gawi* (to do) principles so that Guru Sekumpul is able to accumulate capital to finance the missionary activity, to develop capital, to invest, and to help those in need. Socially, Guru Sekumpul purposely delivers free lectures and assist devotees during the activity with the aim of righteous deeds, not for imaging. Having adequate financial capital, Guru Sekumpul is a preacher who does not rely on help from the various parties for preaching activities. Considering that the place is not sufficient to seat devotees and intending to develop the economy of the community, Guru Sekumpul migrate to a remote area known as Sekumpul which is later on growing so fast economically then making K.H. Muhammad Zaini Abdul Ghani is more recognized as Guru Sekumpul. Region Sekumpul initially is without occupants. The devotees of Guru Sekumpul buy land and build houses with the intention to be closer. Purchasing of land and housing establishment stretch the economy and in line with the rapid growth of teaching and Holy Koran recitation, Sekumpul Region turn into areas where transactions of various purposes of economic activity occur.

Society open the shop and build shops so that economics community model of 'Islamic market' is developed. Islamic economic developments in the region is based on the fatwa Guru Sekumpul that life will be safe and sound, peaceful and prosperous outwardly and inwardly if it is based on Islamic values.

Guru Sekumpul exemplifies private economic development by trading natural stone rings, precious stones ring both belongs to him or the trust of others, join venturing or entrusting capital. The rapid development of the Sekumpul Region makes Guru Sekumpul, students and devotees 1 set up shop, car showrooms, printing, AZ Express Food, AZ Bakery, perfume and so on. There are approximately 108 products developed by Al-Zahra Group of Companies (Abbas, 2013). Guru Sekumpul also buys various land, one of them is made for Banjarbaru housing complex.

As Mirhan research results (2012) Guru Sekumpul's socio-economic role is quite significant. He successfully developed economic enterprises to build a business that is known by the name of Al-Zahra. He started the business improving and accelerating economic community stretching around South Kalimantan, especially in Martapura. The success of Guru Sekumpul to build good conduct and economic development is in line with the conclusions of Desi Erawati (2016).

*Da'wah bil-hal* of Guru Sekumpul is so memorable for students and recitation devotees. Khairullah (Interviewed on 7-4-2016), a young boy from Barabai (125 km from Martapura) who studied at Pesantren Darussalam Martapura was really aspired to be a preacher. Because her parents not from a rich family, Khairullah worked as a construction worker to meet the needs of the school and follow the teachings of Guru Sekumpul to establish religious knowledge. In one study, Guru Sekumpul said: "a preacher should be supported by financial ability to not to stretch out your hand." Guru Sekumpul speech really made an impression on his mind and be a motivation for working harder. Now, after 30 years old, Khairullah runs the business of housing and the company keeps growing. Khairullah is so determined in establishing financial gains that preaching activity is no longer problems. The admiration to Guru Sekumpul is channeled by establishing community in the social network Facebook while building the friendship of his fellow pupils or lovers of Guru Sekumpul.

Being honest and expanding the relationship as the key to a successful endeavor are the teachings of Guru Sekumpul practiced by Hamdi Djunaid, (Interview 14-8-016) a businessman of housing, shops, car rental, a brick press and various other business branches.



Hamdi Djunaid is not alone as there are thousands of students and lovers of Guru Sekumpul who gain useful lessons from *da'wah bil-lisan* dan *da'wah bil-hal*. Haji Sulaiman Basirun or popularly called HB (Interview, 7-6-2012), South Kalimantan conglomerate that develops business in the field of mining, shipping, road traffic coal, print media, and a variety of other businesses are very impressed with the teachings of Guru Sekumpul about entrepreneurship grounded in Islam. He said: "As a businessman I certainly have ever experienced hard times. I am once nearly bankrupt. Guru Sekumpul gives spiritual cleansing that temptation comes from Allah the Almighty. Behind the trials, when we are able through with sincerity, Allah will bring sustenance without we thought. " Guru Sekumpul for Abdussamad Sulaiman HB is a person who directs the religious realm of the soul. After experiencing difficult times, the owner of the Football Association of Barito Putra expand. His closeness to Guru Sekumpul makes Abdussamad Sulaiman HB accompany him when treated in Surabaya until the end of life Guru Sekumpul. As a devotee, Rusdi Maulana (Interview, 12-9-2016), always follow the teachings of Guru Sekumpul. For small trader like Rusdi, Guru Sekumpul uplifts the economy. The number of devotees coming to Sekumpul is beneficial for him because many of the them bought picture frames he sells to display picture of Guru Sekumpul. Preaching and doing business as an "arena of worship" make financial capability of Guru Sekumpul more than enough. For those who take the Sufi path, Guru Sekumpul chooses a simple life, not extravagance. Treasures of Guru Sekumpul are given as wherewithal for various purposes. In a simple example, devotees coming to Sekumpul Holy Koran recital are supplied drinking water, bread, and books and even few individuals or institutions that need the funds are assisted by Guru Sekumpul. Muhammad Husni, an entrepreneur who develops business started from showroom car, motorcycle dealer, Hajj and Umrah travel, and various other businesses, ensures Guru Sekumpul as people who live ascetic lives. Guru Sekumpul earns money from selling rings and jewels but the results of such efforts are just given to the needy. Being close to Guru Sekumpul, Husni's business is associated with Guru Sekumpul. It is not intended to accumulate wealth, but to support missionary activity and to prepare for the cost of education of children and families Guru Sekumpul. With adequate financial support, of course activity will be echoed far faraway. The advice of Guru Seman Mulya is referred in allocating the profit, namely: a third of profits is invested, one-third for the purposes of life, and a third given to teachers (ulema) to be shared, because the teachers understand better who should receive the blessing of the business. Guru Seman Mulya are teachers of Muhammad Husni and Guru Sekumpul. Muhammad Husni practices it, but Guru Sekumpul is more radical in distributing business profits to others. Guru Sekumpul views property as a surrogate of Allah and the rights of others who need it is on our property as for Guru Sekumpul, assets acquired through business is not 'property. In a religious gathering firmly he said: "I am not the owner of the treasure. The treasure belongs to Allah and is used for the sake of *da'wah*." Treasures for Guru Sekumpul is to support missionary activity. During the development of Ar-Raudhah complex to complete various facilities many third parties who willingly intend to donate the development of the complex are subtly rejected as it is against the principle of Guru Sekumpul to become ulema asking instead of giving. Ulema is an example to followers in every way of life. In terms of doing business the Messenger has set up an example and doing business is the realm of worship. A Muslim is not forbidden to become rich as with the wealth, it is possible to give charity and assist activities of the people in the principle that treasure from God should be entrusted to someone in order to be utilized for the benefit of mankind. Referring to Prophet Muhammad as a model, Guru Sekumpul not just preaches the importance of running the business, but he practices it that becomes a role model for students and devotees resulting in many successful businessman ranging from small to the conglomerate level. Remarkably, this business is run under Islamic values corridors and not in the spirit of capitalism where accumulating wealth is not the most important thing, but how useful the

treasure for the progress of Islam is.

#### 4.CONCLUSION

In enhancing the economic prosperity, Guru Sekumpul develops da'wah method *da'wah bil-lisan* (preaching) *da'wah bil-hal* (doing) and *da'wah bit-tadwin* (examining) where *da'wah bil-lisan*, and *da'wah bit-tadwin* are used to develop *da'wah bil-hal*. *Da'wah bil-hal* is developed from Banjar community principles, *kaji* (examine) and *gawi* (do): carefully examined the matters then implement them into economic development. Comprehending that in Islam teaching that developing economic is worship leading to the concept of Guru Sekumpul that believes preaching does not mean begging including sending budget proposal to other third parties. Thus, Guru Sekumpul finances da'wah with his own money and also distributes money for various social purposes and needs of the poor. At the same time, Guru Sekumpul teamed up trade with worshipers in running business, entrusted capital, provided capital and motivate the devotees to strive.

The understanding of Islamic economic as an arena of worship becomes the starting point of economic development. Thus, the model of da'wah of Guru Sekumpul should be disseminated within the framework of Islamic economic development.

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## ANTECEDENTS OF WILLINGNESS TO PAY A PRICE PREMIUM

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### ABSTRACT

*Price has become a crucial element plays a key role in deciding which goods or services be purchased, especially in underdeveloped and emerging markets. However, there are some critical values surpass the amount of money will be pay. Taking into consideration of the definition of Willingness to pay a price Premium which says it is the highest price level consumers are willing to pay to buy a good or service, it can be said that it is a situation that can be achieved by the positive comparison of the value that consumers will get against the cost elements they will endure. Having information about which factors motivate consumers to have a willingness to pay a price Premium plays an important role for firms in securing the slippery floor in which they operate. From this point of view, this paper attempts to shed light on the antecedents of consumers' willingness to pay a price Premium. The key research question in that study is what makes consumers willing to pay more? Is there any difference between the impacts of those antecedents on the willingness? If yes, which effects of factors have more impact, independently from others? Data were collected from a random sample from Gaziantep which is one of big cities of Turkey through questionnaires.*

*Because the model of this study aims to find out under which effects does the consumers decide to pay high price, we emphasize on the factors of brand equity, Perceived social image, perceived uniqueness, Green brand image, Brand reputation, Brand Effect, Brand logo which are predicted that have an effect on the willingness to pay a price Premium.*

**Keywords:** Price premium, Brand Equity, Brand logos, Brand Reputation, Image

### 1. INTRODUCTION

Because it directly related to the consumers' pockets, the price is seen as one of the most sensitive elements of the marketing mix that increases consumers' sensation. This sensitivity makes it more risky to use price as a competitive element in competitive platforms. The reduction of this risk depends on how the values are precious; on the affection of consumers by this values served by companies and on the consumers' correct perception of them. It is foreseen that having an idea about which factors motivate consumers to pay higher prices will pay an important role especially for businesses which are operating on the slippery ground. From this point of view, determining the antecedents of consumers' willingness to pay high prices constitutes the main purpose of the study. Besides, examining the relationship between these precursors and the willingness to pay for higher prices in different product categories will shed light on to the information whether the consumers' decisions will vary across sectors. From this point of view, determining the effects of the factors that considered as antecedents of willingness to pay high price for different product categories is the second objective of this study.

### 2. LITERATURE

Customer willingness to pay a price premium which is defined as the highest price level at which the consumer is willing to pay for the goods or services (Homburg, et al., 2005: 85) is a situation that can be achieved by the positive comparison of the value that consumers will bear against the costs they will endure. Consumers' decision of buying product is made by choosing

the most suitable product that can respond to their expectations and sensitivities. The definitions in the marketing literature, such as "The maximum amount of money the consumer is willing to pay for a good or service (Homburg, et al., 2005; Wertenbroch and Skiera, 2002)" and "Consumer's desire to continue buying despite any increase in price (Srinivasan, et. al., 2002: 45)" attracted attention to sustainability of willingness to pay a price premium as much as to the formation of it and that revealed the importance of knowing the factors that will cause this enthusiasm on the consumer, once again. Most studies have focused on customers' willingness to pay more have only considered product-related perceptions (Kalogeras et al., 2009) or only one type of determinants (Anselmsson, et al. 2014: 91). In that study, we elaborated on other factors to see if there is any effect of them on the willingness of paying more. If there is any effect, to see the intensity of these effects.

Price premium reflects the brands ability to command a higher price than its competitors (de Chernatony and McDonald, 2003) and Agarwal and Rao (1996) demonstrated that price premium was the measure that best could explain choice of brand at individual level as well as aggregated market shares (Anselmsson, et al. 2007: 403).

Aaker, in his work (1996: 107), approved the high price as the best measure of brand value and specified that consumers accept that high price in the situation when the total benefit to be obtained from the products of a brand is higher than the benefit from the products of other brands. As the level of consumer consciousness perceives the brand value correctly, the brand will raise its position in eyes of consumers and deserves high price. Research conducted with different product groups (Anselmsson et al., 2007; Netemeyer et al., 2004) revealed the relationship between perceived quality and high price. Although most studies found a positive but weak correlation between price and quality, implying that price is not a reliable signal of quality (Apelbaum, 2003: 156), some empirical studies have confirmed the positive relationship between perceived quality and price premiums (Netemeyer, et al., 2004, Sethuraman, 2000), purchase behavior (Netemeyer et al., 2004), preference and purchase intentions (Yoo and Donthu, 2001; Washburn and Plank, 2002) (Anselmsson, et al. 2014: 91).

Allowing expressing their selves is a favorable advantage offered by brands to their consumers (Belk, 1988; Ball and Tasaki, 1992). That supports a view there is a direct relationship between the social image created and the consumer's reaction to that brand. In their exploratory studies on food brands, Anselmsson et al. (2007)'s study supported the idea of social image is the antecedent of high prices (Anselmsson, et al., 2014: 93).

The relation between high price and concept of uniqueness which is defined as the measure by which the consumer feels the difference of a brand's from other competitors is exhibited and confirmed by the Kalra and Goodstein (1998) and Netemeyer et al. (2004). (Anselmsson, et al., 2014: 93).

Consumers with high awareness of environment consider nature as much as their own benefit in their product preferences and prefer brands that do not conflict with their own values. Brands that meet the consumer's expectations in this direction can direct consumers to prefer eco-friendly brands and convince them to pay more for the eco-friendly brand than for other brands (Pickett-Baker and Ozaki 2008: 282).

A price premium refers to the amount of money an individual is willing to pay to secure a welfare improvement. Ethical values have become important criteria to prefer a brand or product. Because consumers express their concerns about the ethical behavior of companies by means of ethical buying and consumer behavior (De Pelsmacker et al., 2005), willingness to pay a price premium will be desirable and reasonable for sensitive consumers (Aguilar and Vlosky, 2007:1101).

A reputation that makes a significant contribution to the perceived quality of a product is a concept that explains why consumers prefer an entity's goods or services (Adeosun and Ganiyu, 2013: 220). It is commonly believed that buyers are likely to pay price premiums to high-

reputation sellers, so the high reputation sellers should charge relatively high prices (Liu, et al., 2012: 682). Having a high reputation in a competitive environment where marketers are now assessed based on their ability to express who they are and what they symbolize represents a significant privilege in influencing the consumer. Besides, brand logos may be one of the reasons of buying a brand for customers in order to add value of the brands' to themselves. Besides, brand loyalty becomes a strong cause to be volunteer to pay a price premium. Because searching for a new brand and taking the risk of being its customer is difficult to people, they are willing to pay for the brands they are familiar. So, brand loyalty can be one of the drivers of paying high price.

In that framework, the hypotheses of the study were formed as:

H<sub>1</sub>: There is a positive correlation between brand awareness (BAW) and higher willingness to pay a price premium (HPP).

H<sub>2</sub>: There is a positive correlation between perceived quality (PQA) and HPP.

H<sub>3</sub>: There is a positive correlation between perceived social image (PSI) and HPP.

H<sub>4</sub>: There is a positive correlation between uniqueness (UNQ) and HPP.

H<sub>5</sub>: There is a positive correlation between green brand image (GBI) and HPP.

H<sub>6</sub>: There is a positive correlation between brand reputation (BRP) and HPP.

H<sub>7</sub>: There is a positive correlation between brand effect (BEF) and HPP.

H<sub>8</sub>: There is a positive correlation between brand logos (BLG) and HPP.

H<sub>9</sub>: There is a positive correlation between brand loyalty (BLY) and HPP.

### 3. METHOD

Convenience sampling method was used in the study. We collected 219 questionnaires. The questionnaire was constructed using the measures that are explained in the next paragraph. Each measure has multiple-items with 5-point summated rating scales with anchors of 1 being strongly disagree and 5 being strongly agree, except respondent demographics.

The conceptual model based on Anselmsson et al.'s model (Anselmsson, et al., 2014: 92). The model of Anselmsson et al. contained awareness, quality, uniqueness, corporate social responsibility, social image and origin. Our model was added brand image, brand reputation, brand effect, brand logos, and brand loyalty and was taken away from origin and corporate social responsibility.

All constructs are measured using multiple-item, five-point scales with anchors ranging from Strongly Disagree (= 1) to Strongly Agree (= 5). We modified the measures of research variables. Table 1 are shown the scales of this research variables and their reliability. Nunnally (1978, 245) recommends that instruments used in basic research have a reliability of about 0.70 or better. The Cronbach's  $\alpha$  of each construct was over 0.75 (see Table 1). According to Nunnally (1978), all the factors are reliable.

| Variables                                       | Scales                        | Items | Cronbach's $\alpha$ |
|-------------------------------------------------|-------------------------------|-------|---------------------|
| Brand awareness (BAW),                          | Yoo and Donthu's (2001)       | 6     | .85                 |
| Perceived quality (PQA)                         | Netemeyer et al. (2004)       | 3     | .79                 |
| Perceived Social Image (PSI)                    | Sweeney and Soutar (2001)     | 3     | .88                 |
| Uniqueness (UNQ)                                | Netemeyer et al. (2004)       | 4     | .84                 |
| Green brand image (GBI))                        | Chen (2010)                   | 5     | .89                 |
| Brand reputation (BRP)                          | Veloutsou and Moutinho (2009) | 3     | .88                 |
| Brand effect (BEF)                              | Chaudhuri and Holbrook (2001) | 3     | .92                 |
| Brand logos (BLG)                               | Wang et al. (2012)            | 3     | .83                 |
| Brand loyalty (BLY),                            | Zeithaml et al. (1996)        | 5     | .86                 |
| Higher willingness to pay a price premium (HPP) | Netemeyer et al. (2004)       | 3     | .86                 |

Table 1: Constructs

#### 4. ANALYSES

Of the 219 respondents, about 56% were female, 46% were male. Respondents have age between 18 and 63 years. The average age is 22 years.

Table 2 reports the means, standard deviations, cronbach's alpha and bivariate Pearson correlations of the constructs. We found significant and positive correlations between HPP and all research constructs. Therefore, the correlation matrix shows that BLY is significantly and positively correlated with others. Correlations analysis results show that all hypotheses are supported.

|    | 1<br>BAW | 2<br>PQA | 3<br>PSI | 4<br>UNQ | 5<br>GBI | 6<br>BRP | 7<br>BEF | 8<br>BLG | 9<br>BLY | 10<br>HPP | Mean | SD   |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------|------|
| 1  | 1        |          |          |          |          |          |          |          |          |           | 4.22 | .84  |
| 2  | .699**   | 1        |          |          |          |          |          |          |          |           | 3.98 | .83  |
| 3  | .218**   | .207**   | 1        |          |          |          |          |          |          |           | 3.18 | 1.16 |
| 4  | .436**   | .480**   | .355**   | 1        |          |          |          |          |          |           | 3.64 | .86  |
| 5  | .315**   | .357**   | .313**   | .512**   | 1        |          |          |          |          |           | 3.48 | .80  |
| 6  | .652**   | .690**   | .290**   | .503**   | .494**   | 1        |          |          |          |           | 4.14 | .81  |
| 7  | .622**   | .613**   | .401**   | .475**   | .351**   | .672**   | 1        |          |          |           | 4.03 | .94  |
| 8  | .544**   | .518**   | .325**   | .514**   | .428**   | .568**   | .627**   | 1        |          |           | 3.92 | .96  |
| 9  | .687**   | .605**   | .254**   | .549**   | .475**   | .671**   | .684**   | .608**   | 1        |           | 3.90 | .83  |
| 10 | .401**   | .377**   | .343**   | .493**   | .290**   | .415**   | .495**   | .491**   | .547**   | 1         | 3.32 | 1.03 |

\*\* Correlation is significant at the 0.01 level (2-tailed)

Brand awareness (BAW), Perceived quality (PQA), Perceived Social Image (PSI), Uniqueness (UNQ), Green brand image (GBI), Brand reputation (BRP), Brand effect (BEF), Brand logos (BLG), Brand loyalty (BLY), and Higher willingness to pay a price premium (HPP), SD: Standard Deviation.

Table 2: Correlation Analyses

Multiple regression analyses (Stepwise) were performed to predicted variable of higher willingness to pay a price premium and these results are contained within Table 3.

| Independent Variable | B    | B <sub>(Std)</sub> | B    | B <sub>(Std)</sub> | B    | B <sub>(Std)</sub> | B     | B <sub>(Std)</sub> |
|----------------------|------|--------------------|------|--------------------|------|--------------------|-------|--------------------|
| Constant             | .698 |                    | .228 |                    | .050 |                    | -.058 |                    |
| BLY                  | .672 | .547**             | .487 | .396**             | .469 | .382**             | .381  | .310**             |
| UNQ                  |      |                    | .327 | .275**             | .266 | .224**             | .225  | .189**             |
| PSI                  |      |                    |      |                    | .147 | .166**             | .129  | .145**             |
| BLG                  |      |                    |      |                    |      |                    | .169  | .158**             |
| R <sup>2</sup>       |      | .30                |      | .35                |      | .37                |       | .39                |
| F                    |      | 92.806**           |      | 58.761**           |      | 43.264**           |       | 34.302**           |

\*\* p is significant at the 0.01 level.

Brand awareness (BAW), Perceived quality (PQA), Perceived Social Image (PSI), Uniqueness (UNQ), Green brand image (GBI), Brand reputation (BRP), Brand effect (BEF), Brand logos (BLG), Brand loyalty (BLY), and Higher willingness to pay a price premium (HPP).

Table 3: Multiple Regression Analyses-Stepwise (Dependent variable HPP)

The stepwise regression model results are given in Table 2. In an ANOVA table, the F-statistic= 43.26 (p<0.0001), indicating the results of the regression model are satisfactory. This model explained 37% of the variance in HPP. The brand loyalty, uniqueness and perceived social image are important factors influencing the higher willingness to pay a price premium.

## 5. DISCUSSION, CONCLUSION AND IMPLICATION

The results of the study indicate a positive relationship with all variables determined as antecedents of the willingness to pay a price premium, as we predicted. Brand loyalty, Uniqueness, Perceived social image and brand logos are associated with willingness to pay high prices strongly and positively. That is, attracting customers in some ways give opportunity to brands in determining their prices. Attracted customers are willing to pay more for a brand, because of satisfied needs. Additionally, because loyal customers benefit from being customers of a brand, the price doesn't for them. Moreover, a lack of knowledge about the expectation of customers which can be drivers lead to pay a price premium could drive a brand to the wall. Although the variables of brand awareness, brand effect, brand reputation, perceived quality and green brand image has impacts on the willingness of paying high prices; their effects are relatively weak, as unexpected. This may arise from mediating effect of them or from other impacts. Further research can be made to clarify that point.

The study revealed that when the brands or products give clue/s to customers who are appropriate with their values, the high prices seen favorable to customers and they start to be volunteer to pay it. Because price is pretty risky factor in buying decisions, brands have to explain how their products contribute when they are bought. In a competitive area, only if they persuade customers about the attractive aspects of themselves, they can affect them and make the buying decision on behalf of their brands.

It is obviously seen that there are some things that more important than money. This means that, when the brands start to understand which factors play role in giving decision and what is important for customers, they could put themselves in order and so, attract many others. Thus, brands which are willing to determine high prices for their products, must be aware of all these conditions.

## 6. LIMITATIONS AND FUTURE DIRECTIONS

Implementing the study in just a city is the first limitation of the study. Therefore, the study needs to be replicated with more heterogeneous samples in other cities in order to generalize the findings. Sampling method is the second limitation of that study. Possibility for future research is researching the willingness of price premium with different target markets in order to analyze and compare the sensitivity of all groups. Including different antecedents of willingness to pay high prices to analyze if there are some other factors may be beneficial in understanding consumer behavior.

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## MACROECONOMIC DETERMINANTS OF UNEMPLOYMENT IN CROATIA: SUBSET VEC MODEL

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### **ABSTRACT**

*Maintaining low unemployment rate is one of the most important objectives of economic policy. Economic policy affects unemployment mainly through monetary and fiscal policy, trying to affect aggregate supply and demand for goods and services. In Croatia, unemployment rate is significantly higher in relation to other countries of the European Union (EU) and represents a big problem for economic policy creators. Many studies show that unemployment depends on several factors. Therefore, the aim of this study is to determine the impact of productivity, prices and real wages on unemployment in Croatia. For this purpose, the subset vector error correction (VEC) model is applied. The results indicate the existence of two stable cointegration relationships between the variables whereby an increase in productivity, prices and wages lead to a decrease in unemployment.*

**Keywords:** *Cointegration, Croatia, Subset VEC model, Unemployment*

### **1. INTRODUCTION**

Although there are many objectives of economic policy, maintaining low unemployment is surely one of the most important in any country. Commonly, firms respond to an increase in demand for goods and services by increasing production that in turn leads to higher employment, i.e. to lower unemployment. Lower unemployment leads to higher wages. Namely, when unemployment is low, it is easy to find another job. Therefore, a firm that wants to keep workers must increase wages. Higher wages then increase production costs, leading firms to increase prices. Production costs depend on the production function, which represents the relation between the inputs, outputs and the prices of inputs. However, because of higher prices, workers demand higher wages, and so on. Just presented is well explained in Blanchard (2009) indicating that economic systems are quite dynamic. This brief discussion clearly indicates the existence of a nexus between wages, prices, employment, unemployment and output. In this context, economic policy tries to affect unemployment through monetary and fiscal policy measures and instruments. A common measure of unemployment is the unemployment rate. The unemployment rate is calculated as the ratio of the number of unemployed persons and labor force whereby the labor force is represented by the total number of people who work and want to work and can be defined as the sum of the employed and unemployed persons (Blanchard, 2009). There are several types of unemployment, i.e. frictional, structural and cyclical (Babić, 2007). Frictional unemployment results from activities of searching for a new job. Structural unemployment is the result of an imbalance in the structure of supply and demand for labor. Finally, cyclical unemployment results from the deviation between actual and potential production due to cyclical movements of the economy. Although Croatia became part of the European Union (EU) in 2013 and taking into account that unemployment in Croatia is reducing in the last few years, it is still significantly higher in

relation to other (comparable) EU countries and represents a big problem for economic policy creators (Croatian National Bank, 2016). For example, in 2015 Croatian ILO (International Labour Organization) unemployment rate was 16.3% and was significantly higher than in other comparable EU countries such as Czech Republic (5.1%), Hungary (6.8%), Poland (7.5%), Slovak Republic (11.5%), Slovenia (9%), etc. (Croatian National Bank, 2017a). The causes of such high unemployment in Croatia can be found in its past. Stabilization program implemented during 1990s was inadequately realized since it was primarily aimed at reducing inflation (Škare, 2001, Bebek and Santini, 2008). At the same time, Croatia was faced with war, loss of markets, badly conducted privatization, etc. According to Škare (2001) unemployment in Croatia arise from disproportion between aggregate supply and demand in the labor market, lack of aggregate demand for goods and services, low purchasing power, lack of liquidity in the financial market, high internal debt and restrictive fiscal policy. During 2000s due to the opening of the economy and large foreign inflows, unemployment in Croatia decreased. However, this was stopped by the latest global crises that dramatically affected Croatian economy. Decrease of unemployment in recent years is largely a result of favorable economic developments in the EU and the euro area but is also partly correlated with the emigration of the working age population to developed EU countries (Croatian National Bank, 2017). It should be emphasized that one of the fundamental freedoms guaranteed by the EU is freedom of movement for workers that ensures to every EU citizen the right to move freely, to stay and to work in another member state (EUR-Lex, 2017). In addition, positive household consumption trends in recent years supported by strengthening of the purchasing power caused by a decline in the price level also contributed to positive labor market developments by rising employment, reducing unemployment and increasing nominal net wages (Croatian National Bank, 2016).

Despite there are many factors that determine unemployment, such as microeconomic and macroeconomic, technological, seasonal, social, political, etc., analysis in this paper primarily focuses on macroeconomic factors of Croatian unemployment.

The rest of the paper is organized as follows. Section 2, after the introduction, reviews the literature. Section 3 describes methodology, empirical analysis and the results, while Section 4 provides some concluding remarks.

## 2. LITERATURE REVIEW

Since reducing unemployment is one of the most important economic policy goals in each country, including Croatia, there exists a vast number of papers that explores this problem. This section chronologically summarizes just a few of them.

Škare (2001) examined the determinants of unemployment and labor demand in Croatia using a vector autoregressive (VAR) model and annual data in the period from 1960 till 1998. Obtained results show that changes in unemployment depend on changes in inflation, capital-labor relations, wages and exchange rate policy. Therefore, unemployment in Croatia is largely determined by production costs (cost of inputs) and exchange rate policy.

Jackman (2002) analyzed the determinants of unemployment in Western Europe. Conclusions suggest that the main cause of high unemployment in some European countries lies on the demand side of the labor market. For example, active labor market policies aimed at individuals should be avoided and replaced with a reduction in non-wage labor costs (like barriers to new business start-ups, legislation and regulations).

Bassanini and Duval (2006) examined the determinants of unemployment across OECD countries using the pooled cross-country/time-series econometric analysis and annual data in the period from 1982 till 2003. Using various institutional and policy variables, they found that policies, institutions and macroeconomic conditions affect unemployment. In the context of macroeconomic conditions, results suggest that negative total factor productivity shocks,

deteriorations in the terms of trade, increases in long-term real interest rates or negative labor demand shocks increase aggregate unemployment.

Basarac (2009) evaluated the Phillips curve for Croatia using the vector error correction (VEC) model and monthly data in the period from January 1998 till September 2008. Obtained results indicate the existence of a long-run relationship between the unemployment, real wages, labor productivity and inflation whereby the existence of a short-term link is rather questionable.

Eita and Ashipala (2010) analyzed the determinants of unemployment in Namibia using the concept of cointegration and annual data in the period from 1971 till 2007. Obtained results indicate that a rise in prices and investment reduce unemployment whereby a rise in GDP gap and wages increase unemployment.

Botrić (2011) analyzes structural unemployment and its determinants for a group of transition countries in Southeast Europe using panel data method with fixed effects and annual data in the period from 2000 till 2009. Results suggest that remittances and overall changes in business climate are the significant variables that explain relatively high structural unemployment in analyzed countries.

Blažević (2013) investigated the connection between minimum wage and the employment rate of workers distributed according to the age in Croatia using a panel method with fixed effects and Labour Force Survey data in the period from 2000 till 2010. Results indicate the existence of a relationship with a positive direction with poor significance related to the need for a felt increase of minimum wage.

Maqbool, Sattar and Bhalli (2013) analyzed the determinants of unemployment in Pakistan using the autoregressive distributed lag (ARDL) approach and annual data in the period from 1976 till 2012. They found that GDP, population, inflation and foreign direct investment are significant determinants of unemployment in short and long-run.

Tercek (2014) investigated the determinants of European and United States unemployment using a variety of economic and social indicators, regression analysis and annual data in the period from 1990 till 2012. Obtained results and conclusions indicate that possible difference between the rates of unemployment in both countries arise from the concept of the two-tier labor market as measured by strictness of employment protection, number employed in the first- and second-tier markets and average annual hours worked per worker.

Škare and Buterin (2015) analyzed overall fluctuations in unemployment in Croatia using multivariate singular spectrum model (MSSA) and monthly data from 1990 to 2013. By constructing a set of a large database including 88 time series variables, they were able to explain a 76 % of the total unemployment variance. It is evident that macroeconomic determinants of unemployment differs between authors. However, the most commonly used are GDP, productivity, investments, inflation, wages and interest rates.

### 3. METHODOLOGY, EMPIRICAL ANALYSIS AND RESULTS

In order to analyze the determinants of unemployment in Croatia a subset vector error correction (VEC) model is estimated<sup>1</sup>. Before defining the model, a brief data analysis is displayed. Data for selected variables are observed on a quarterly basis as indices (2010=100) in the period from March 2000 to June 2016 and Figure 1 shows their movement, i.e. the movement of unemployment (UNEMP)<sup>2</sup>, productivity (PROD)<sup>3</sup>, consumer price index (CPI) and real wage (RWAGE)<sup>4</sup>. Data are obtained from the International Financial Statistics (2016) database.

<sup>1</sup> The JMulTi (Lütkepohl and Krätzig, 2004), Gretl (Cottrell and Lucchetti, 2017) and Eviews 9.5 (IHS Global Inc., 2017) econometric software are used for the multiple time series analysis.

<sup>2</sup> Represents the number of unemployed persons.

<sup>3</sup> Calculated as the ratio between real gross domestic product (GDP) and the number of employed persons.

<sup>4</sup> Calculated as nominal net wage deflated by the consumer price index.

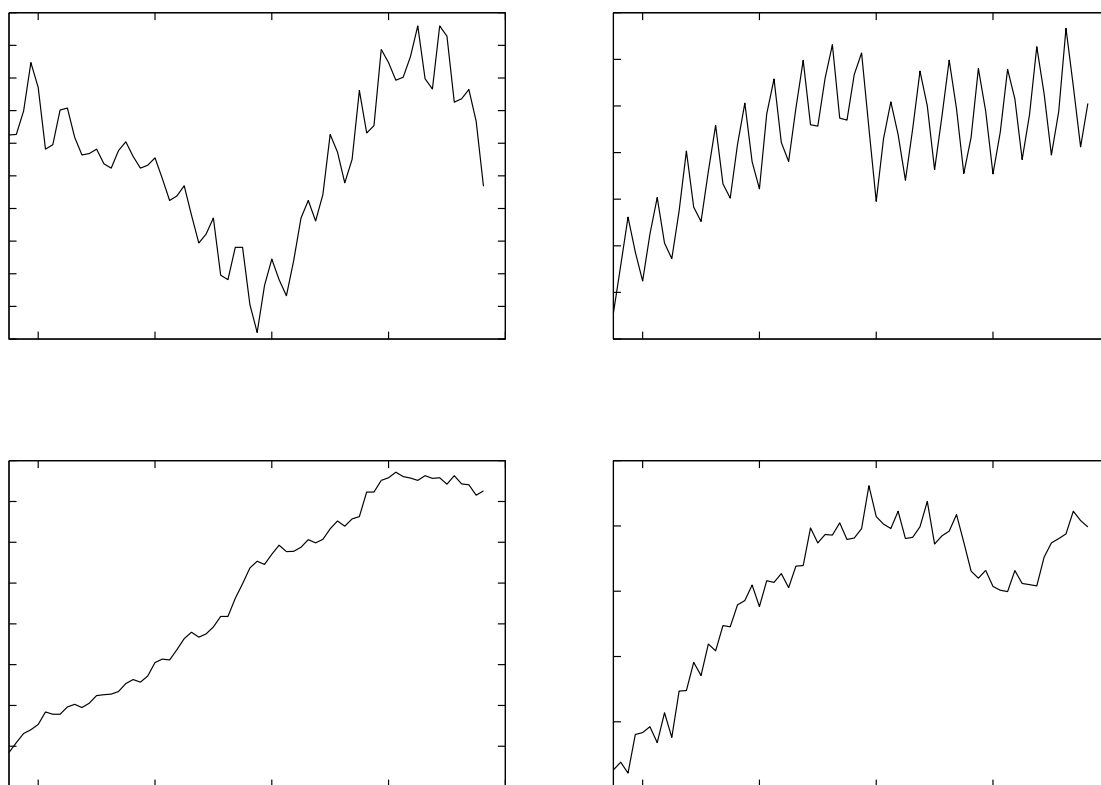


*Figure 1. Unemployment, productivity, consumer prices and real wage  
(International Financial Statistics, 2016)*

It is visible that productivity, prices and wages achieve upward trend mainly throughout the whole observed period. Unemployment decreases in the period from 2000 to 2009 and from 2013 to 2017 while in the rest of the period increases. Changes that have occurred in the period after 2008 are due to a spillover effect of the global crisis on the Croatian economy.

To determine whether there is a long-run relationship between the variables, it is necessary to apply the concept of cointegration. Prior to testing cointegration and defining the model it is necessary to examine the degree of integration of time series using unit root tests. For these purposes, Augmented Dickey-Fuller ADF test (Dickey and Fuller, 1979), Phillips and Perron PP test (Phillips and Perron, 1988) and KPSS test (Kwiatkowski, Phillips, Schmidt and Shin, 1992) are considered. All variables are expressed in their logarithmic form and to eliminate the influence of seasonal factors all series were seasonally adjusted<sup>5</sup>. Results are shown in Table 1.

*Table following on the next page*

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<sup>5</sup> Using the Arima X13 method.

| Variable and test      | Level               |                    | First difference |                    |
|------------------------|---------------------|--------------------|------------------|--------------------|
|                        | Constant            | Constant and trend | Constant         | Constant and trend |
| <b>ADF test</b>        | <b>t-stat.</b>      |                    |                  |                    |
| <i>LUNEMP</i>          | 0.7189              | 0.9155             | 0.0000           | 0.0000             |
| <i>LPROD</i>           | 0.0249              | 0.3910             | 0.0000           | 0.0000             |
| <i>LCPI</i>            | 0.6053              | 0.9959             | 0.0201           | 0.0407             |
| <i>LRWAGE</i>          | 0.0559              | 0.8134             | 0.0000           | 0.0000             |
| <b>PP test</b>         | <b>Adj. t-stat.</b> |                    |                  |                    |
| <i>LUNEMP</i>          | 0.6415              | 0.8787             | 0.0000           | 0.0000             |
| <i>LPROD</i>           | 0.0254              | 0.3915             | 0.0000           | 0.0000             |
| <i>LCPI</i>            | 0.1884              | 0.9983             | 0.0000           | 0.0000             |
| <i>LRWAGE</i>          | 0.0918              | 0.8079             | 0.0000           | 0.0000             |
| <b>KPSS test</b>       | <b>LM-stat.</b>     |                    |                  |                    |
| <i>LUNEMP</i>          | 0.236481            | 0.212106           | 0.170164         | 0.151703           |
| <i>LPROD</i>           | 0.741968            | 0.219943           | 0.525260         | 0.111648           |
| <i>LCPI</i>            | 1.027543            | 0.176454           | 0.454696         | 0.126888           |
| <i>LRWAGE</i>          | 0.713032            | 0.246196           | 0.495487         | 0.127036           |
| <b>Breakpoint test</b> | <b>t-stat.</b>      |                    |                  |                    |
| <i>LPROD</i>           | 0.4315              | 0.4189             | < 0.01           | < 0.01             |

Table 1. Unit root tests (Research results)

Notes: “L” indicates logarithm of the variable. For the implementation of ADF and Perron test, the Schwarz information criterion has been implemented. ADF test critical values: constant: 1% level (-3.53), 5% level (-2.91), 10% level (-2.59); constant and trend: 1% level (-4.11), 5% level (-3.48), 10% level (-3.17). PP test critical values: constant: 1% level (-3.53), 5% level (-2.91), 10% level (-2.59); constant and trend: 1% level (-4.11), 5% level (-3.48), 10% level (-3.17). KPSS test asymptotic critical values: constant: 1% level (0.739), 5% level (0.463), 10% level (0.347); constant and trend: 1% level (0.216), 5% level (0.146), 10% level (0.119). Breakpoint test critical values: constant: 1% level (-4.95), 5% level (-4.44), 10% level (-4.19); constant and trend: 1% level (-5.35), 5% level (-4.86), 10% level (-4.61).

The results of the ADF and PP test indicate possible stationarity of productivity in level, which may result because of the breaks in the data. When breaks are present, unit root tests are biased and may lead to false conclusions regarding the integration of time series. Therefore, a breakpoint unit root test (Perron, 1989) is employed too. Obtained results and insight into Figure 1 suggests that all series are integrated of order I(1), i.e. that they are stationary in first differences.

In order to test for cointegration, the methodology proposed by Johansen (1991, 1995) is used. A vector of variables  $y_t = (LUNEMP, LPROD, LCPI, LRWAGE)$  is defined allowing variables in  $y_t$  to be potentially endogenous. Therefore, the following unrestricted vector autoregressive (VAR) model is defined:

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t, \quad \varepsilon_t \approx IN(0, \Sigma) \quad (1)$$

where  $y_t$  is a  $k$ -vector of nonstationary  $I(1)$  variables,  $x_t$  is a  $d$ -vector of deterministic variables,  $\varepsilon_t$  is a vector of independently normally distributed errors with mean zero and covariance matrix  $\Sigma$ , while  $A$  and  $B$  are matrices of parameters.

Model (1) can be reformulated in VEC model:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + Bx_t + \varepsilon_t \quad (2)$$

where

$$\Pi = \sum_{i=1}^p A_i - I, \quad \Gamma_i = - \sum_{j=i+1}^p A_j \quad (3)$$

Granger's representation theorem asserts that if the coefficient matrix  $\Pi$  has reduced rank  $r < k$ , then there exist  $k \times r$  matrices  $\alpha$  and  $\beta$  each with rank  $r$  such that  $\Pi = \alpha\beta'$  and  $\beta'y_t$  is  $I(0)$  where  $r$  is the number of cointegrating relations (the cointegrating rank) and each column of  $\beta$  is the cointegrating vector. The elements of  $\alpha$  are known as the adjustment parameters while  $p$  is the number of lags.

Number of lags needed for cointegration test is determined using standard information criteria (AIC, SBIC and HQC)<sup>6</sup>. Although the criteria indicate different number of lags, the final model is estimated using one lag as suggested by the SBIC<sup>7</sup>. Since the trend is not significant, for determining the number of cointegrating vectors Johansen's Case 2 (restricted constant) trace and the maximum eigenvalue tests are employed. The test statistic tests the null hypothesis of  $r$  cointegrating relations against the alternative of  $k$  cointegrating relations, where  $k$  is the number of endogenous variables, for  $r = 0, 1, \dots, k-1$ . Due to structural breaks in time series (evident in Figure 1) Johansen trace test, which allows structural breaks, is performed too (Johansen et al., 2000).

| Rank | Trace  |         | Lmax   |         | Trace * |         | Trace ** |         |
|------|--------|---------|--------|---------|---------|---------|----------|---------|
|      | Test   | p-value | Test   | p-value | Test    | p-value | Test     | p-value |
| 0    | 143.46 | 0.0000  | 101.74 | 0.0000  | 143.46  | 0.0000  | 165.17   | 0.0000  |
| 1    | 41.72  | 0.0075  | 22.19  | 0.0497  | 41.72   | 0.0103  | 56.76    | 0.0082  |
| 2    | 19.53  | 0.0615  | 13.51  | 0.1159  | 19.53   | 0.0686  | 23.57    | 0.3006  |
| 3    | 6.02   | 0.1958  | 6.02   | 0.1954  | 6.02    | 0.1965  | 5.16     | 0.8075  |

Table 2. Johansen cointegration tests (Case 2: Restricted constant) (Research results)

Notes: (\*) corrected for sample size ( $df = 60$ ). (\*\*) includes two breaks in March 2009 and Jun 2012.

Results in Table 2 suggest the existence of two significant cointegrating vectors at a 5% significance level. Therefore, the analysis is continued with this assumption.

Subset VEC model includes four lags of previously defined variables together with several dummy variables and is estimated using the Sequential Elimination of Regressors (SER) strategy based on the SBIC. This strategy sequentially deletes regressors that lead to the largest reduction of the SBIC until no further reduction is possible (Brüggemann and Lütkepohl, 2001).

<sup>6</sup> AIC – Akaike criterion, SBIC – Schwarz Bayesian criterion and HQC – Hannan-Quinn criterion.

<sup>7</sup> The SBIC is generally considered as a restrictive criterion and thus suitable for models with relatively short time series.

It is like to sequentially eliminating those regressors with the smallest absolute  $t$ -value until all  $t$ -values (in absolute) are greater than some threshold value. In each step, a single regressor is eliminated and then new  $t$ -values are computed for the reduced model.

To check the acceptance of the subset (restricted) model in relation to unrestricted model an  $LR$ -test is performed and shown in Table 3.

|                                         |         |
|-----------------------------------------|---------|
| <i>LR-test (H1: unrestricted model)</i> | 86.0813 |
| <i>p-value(chi<sup>2</sup>)</i>         | 0.0002  |
| <i>degrees of freedom</i>               | 44.0000 |

Table 3. Unrestricted vs. restricted model test (Research results)

Test result clearly indicates the acceptance of the subset model.

Model diagnostic tests presented in Table 4 include joint and individual tests for autocorrelation, non-normality and ARCH effects. They suggest that the model is adequately estimated with acceptable characteristics.

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Serial correlation</b> | <p><i>Portmanteau test (4 lags):</i><br/>test statistic: 49.7582, <math>p</math>-value: 0.2896; adjusted test statistic: 51.7297, <math>p</math>-value: 0.2277, <math>df</math>: 45.0000</p> <p><i>LM type test (4 lags):</i><br/>LM statistic: 68.0642, <math>p</math>-value: 0.3407, <math>df</math>: 64.0000</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Normality</b>          | <p><i>Doornik &amp; Hansen test (4 lags):</i><br/>joint test statistic: 6.0047, <math>p</math>-value: 0.6467, <math>df</math>: 8.0000; skewness only: 5.1134, <math>p</math>-value: 0.9524; kurtosis only: 0.8913, <math>p</math>-value: 0.9258</p> <p><i>Lütkepohl test (4 lags):</i><br/>joint test statistic: 4.9365, <math>p</math>-value: 0.7643, <math>df</math>: 8.0000; skewness only: 4.4395, <math>p</math>-value: 0.2759; kurtosis only: 0.4969, <math>p</math>-value: 0.9738</p> <p><i>Jarque Bera test (4 lags):</i><br/>u1: teststat: 0.1238, <math>p</math>-Value(Chi<sup>2</sup>): 0.9400; skewness: 0.0998; kurtosis: 2.9104<br/>u2: teststat: 3.2344, <math>p</math>-Value(Chi<sup>2</sup>): 0.1985; skewness: 0.4316; kurtosis: 3.7120<br/>u3: teststat: 0.4055, <math>p</math>-Value(Chi<sup>2</sup>): 0.8165; skewness: 0.1862; kurtosis: 2.8646<br/>u4: teststat: 2.1992, <math>p</math>-Value(Chi<sup>2</sup>): 0.3330; skewness: 0.3128; kurtosis: 3.6783</p> |
| <b>ARCH</b>               | <p><i>ARCH-LM test (4 lags):</i><br/>u1: teststat: 1.0925, <math>p</math>-Value(Chi<sup>2</sup>): 0.8955; <math>F</math> stat: 0.2784, <math>p</math>-Value(<math>F</math>): 0.8907<br/>u2: teststat: 2.9715, <math>p</math>-Value(Chi<sup>2</sup>): 0.5626; <math>F</math> stat: 0.7830, <math>p</math>-Value(<math>F</math>): 0.5413<br/>u3: teststat: 0.5265, <math>p</math>-Value(Chi<sup>2</sup>): 0.9709; <math>F</math> stat: 0.1328, <math>p</math>-Value(<math>F</math>): 0.9696<br/>u4: teststat: 2.7837, <math>p</math>-Value(Chi<sup>2</sup>): 0.5946; <math>F</math> stat: 0.7310, <math>p</math>-Value(<math>F</math>): 0.5748</p> <p><i>Multivariate ARCH-LM test (4 lags):</i><br/>VARCHLM test statistic: 411.3804, <math>p</math>-value(chi<sup>2</sup>): 0.3365, <math>df</math>: 400.0000</p>                                                                                                                                                                     |

Table 4. Subset VEC model diagnostic tests (joint and individual tests) (Research results)

Notes: “u” stands for the residuals.



Previously found two cointegration vectors are normalized by the unemployment and productivity. Obtained cointegration relations are shown in Table 5.

|                                 | <b>LUNEMP</b> | <b>LPROD</b> | <b>LCPI</b> | <b>LRWAGE</b> | <b>CONST</b> |
|---------------------------------|---------------|--------------|-------------|---------------|--------------|
| <i>Cointegration relation 1</i> | 1.000         | 0.000        | 3.053       | 5.924         | -46.949      |
| <i>t-value</i>                  | -             | -            | 2.628       | 3.337         | -7.398       |
| <i>Cointegration relation 2</i> | 0.000         | 1.000        | 0.012       | -0.445        | -2.662       |
| <i>t-value</i>                  | -             | -            | 0.146       | -3.448        | -5.776       |

Table 5. Cointegration relations (Research results)

Notes: "L" indicates logarithm of the variable.

It is evident that an increase in prices and wages in the long-run lead to a decrease in unemployment. On the other side, an increase in prices in the long-run leads to a decrease in productivity, although this effect is rather insignificant. Finally, an increase in wages in the long-run leads to an increase in productivity.

As well, corresponding adjustment parameters are significant, have the correct signs and are shown in Table 6.

|                 | <b>dLUNEMP</b> | <b>dLPROD</b> | <b>dLCPI</b> | <b>dLRWAGE</b> |
|-----------------|----------------|---------------|--------------|----------------|
| <i>ec1(t-1)</i> | -              | -0.007        | -0.011       | -0.007         |
| <i>t-value</i>  | -              | -6.499        | -8.229       | -3.748         |
| <i>ec2(t-1)</i> | -0.368         | -             | 0.167        | 0.090          |
| <i>t-value</i>  | -2.981         | -             | 5.881        | 2.166          |

Table 6. Adjustment parameters (loading coefficients) (Research results)

Notes: "d" indicates first difference, while "L" indicates logarithm of the variable.

Estimated relations make it possible to investigate the nature of the Phillips curve in Croatia. The Phillips curve represents the relation between unemployment and inflation<sup>8</sup> (Blanchard, 2009) and has already been investigated by many Croatian authors such as Šergo and Tomčić (2003), Botrić (2005), Pivac and Grčić (2005), Družić, Tica and Mamić (2006), Basarac (2009, 2009a) etc. Although the conclusions among authors differ, results obtained in this study support the findings regarding the existence of the Phillips curve.

The dynamic interdependence among variables in the model is analyzed through the forecast error variance decomposition presented in the Table 7.

Table following on the next page

<sup>8</sup> Initially, the Phillips curve represented the relation between unemployment and wages.

| Variance decomposition of LUNEMP |        |       |      |        |
|----------------------------------|--------|-------|------|--------|
| Horizon<br>(quarters)            | LUNEMP | LPROD | LCPI | LRWAGE |
| 4                                | 0.91   | 0.07  | 0.01 | 0.01   |
| 8                                | 0.87   | 0.12  | 0.00 | 0.00   |
| 12                               | 0.83   | 0.16  | 0.00 | 0.00   |
| 16                               | 0.80   | 0.19  | 0.00 | 0.01   |
| 20                               | 0.78   | 0.21  | 0.00 | 0.01   |
| 24                               | 0.77   | 0.22  | 0.00 | 0.01   |
| Variance decomposition of LPROD  |        |       |      |        |
| Horizon<br>(quarters)            | LUNEMP | LPROD | LCPI | LRWAGE |
| 4                                | 0.05   | 0.90  | 0.04 | 0.00   |
| 8                                | 0.13   | 0.76  | 0.10 | 0.01   |
| 12                               | 0.18   | 0.68  | 0.13 | 0.02   |
| 16                               | 0.21   | 0.63  | 0.14 | 0.02   |
| 20                               | 0.24   | 0.59  | 0.14 | 0.03   |
| 24                               | 0.26   | 0.56  | 0.15 | 0.03   |
| Variance decomposition of LCPI   |        |       |      |        |
| Horizon<br>(quarters)            | LUNEMP | LPROD | LCPI | LRWAGE |
| 4                                | 0.04   | 0.02  | 0.88 | 0.06   |
| 8                                | 0.03   | 0.05  | 0.75 | 0.17   |
| 12                               | 0.02   | 0.10  | 0.67 | 0.22   |
| 16                               | 0.03   | 0.13  | 0.60 | 0.23   |
| 20                               | 0.06   | 0.16  | 0.54 | 0.24   |
| 24                               | 0.08   | 0.18  | 0.50 | 0.24   |
| Variance decomposition of LRWAGE |        |       |      |        |
| Horizon<br>(quarters)            | LUNEMP | LPROD | LCPI | LRWAGE |
| 4                                | 0.04   | 0.04  | 0.43 | 0.49   |
| 8                                | 0.12   | 0.09  | 0.42 | 0.38   |
| 12                               | 0.21   | 0.13  | 0.37 | 0.30   |
| 16                               | 0.29   | 0.16  | 0.32 | 0.24   |
| 20                               | 0.35   | 0.18  | 0.28 | 0.19   |
| 24                               | 0.40   | 0.20  | 0.24 | 0.15   |

*Table 7. Subset VEC model orthogonal forecast error variance decomposition  
(Research results)*

*Notes: “L” indicates logarithm of the variable.*

The results indicate that productivity affected the variability of unemployment with 7% in  $t = 4$  and 24% after twenty four quarters, prices affected the variability of unemployment with 1% in  $t = 4$  and 0% after twenty four quarters, while wages affected the variability of unemployment with 1% in  $t = 4$  and 1% after twenty four quarters. Unemployment affected the variability of productivity with 5% in  $t = 4$  and 26% after twenty four quarters, prices affected the variability

of productivity with 4% in  $t = 4$  and 15% after twenty four quarters, while wages affected the variability of productivity with 0% in  $t = 4$  and 3% after twenty four quarters. Unemployment affected the variability of prices with 4% in  $t = 4$  and 8% after twenty four quarters, productivity affected the variability of prices with 2% in  $t = 4$  and 18% after twenty four quarters, while wages affected the variability of prices with 6% in  $t = 4$  and 24% after twenty four quarters. Finally, unemployment affected the variability of wages with 4% in  $t = 4$  and 40% after twenty four quarters, productivity affected the variability of wages with 4% in  $t = 4$  and 20% after twenty four quarters, while prices affected the variability of wages with 43% in  $t = 4$  and 24% after twenty four quarters.

Figure 2 shows the impulse responses of unemployment, productivity, prices and wages.

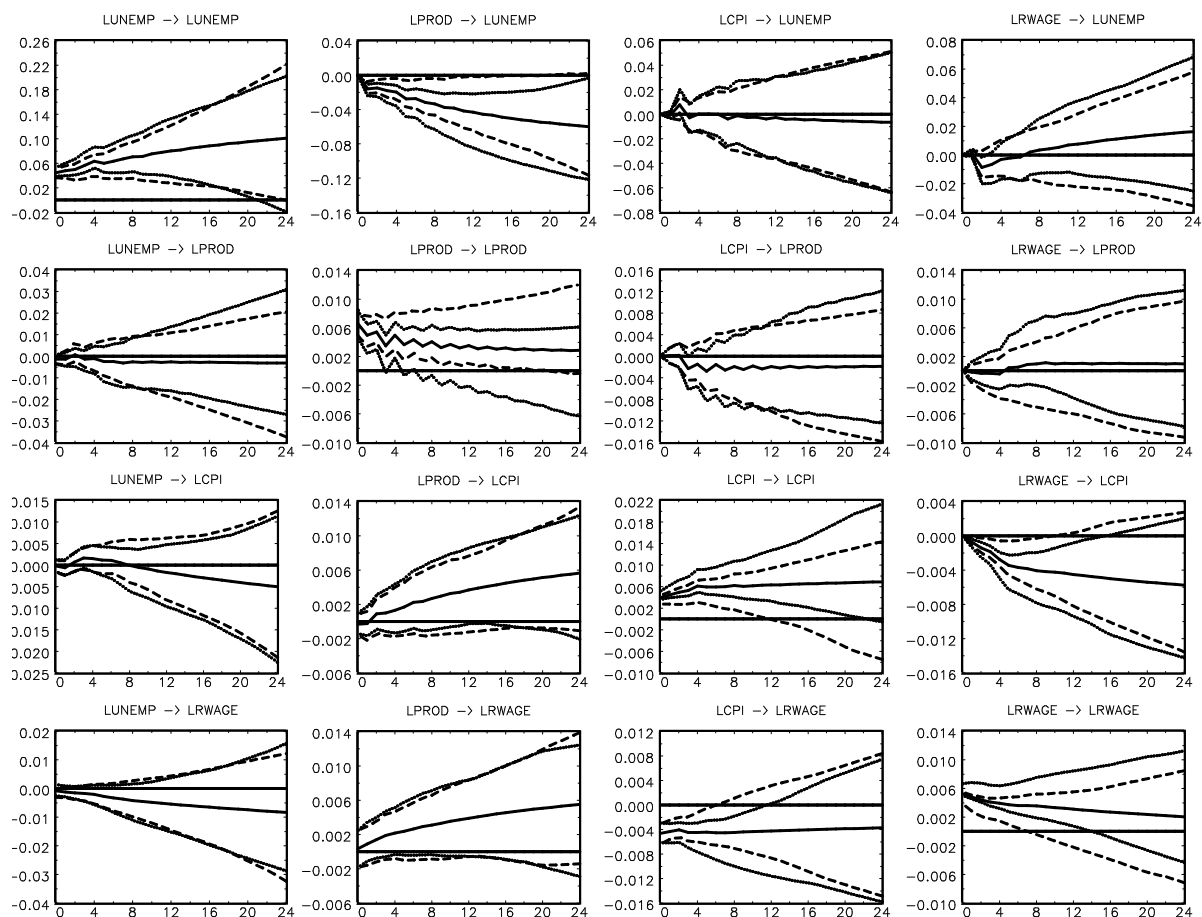


Figure 2. Subset VEC model orthogonal impulse responses with Efron (---) and Hall (•••) 95% confidence intervals (Research results)

The first row shows impulse responses of unemployment to an increase in productivity, prices and wages. It is obvious that an increase in productivity and prices decreases unemployment. On the other side, an increase in wages firstly decreases unemployment but after first six quarters it begins to rise.

#### 4. CONCLUSION

The aim of this study was to analyze the determinants of unemployment in Croatia. For this purpose, a subset vector error correction (VEC) model is estimated. Performed Johansen cointegration tests found two significant cointegrating vectors. Results obtained from the estimated subset VEC model with two cointegrating vectors suggest that an increase in prices

and wages in the long-run lead to a decrease in unemployment. On the other side, an increase in prices in the long-run leads to a decrease in productivity, although this effect is rather insignificant. Finally, an increase in wages in the long-run leads to an increase in productivity. Furthermore, conducted research found evidence that it is possible to set the Phillips curve and determine its nature in Croatia. That puts this research alongside a number of other studies that confirm its existence.

At the end, it is necessary to mention that this analysis has limitations namely because it does not take into account all (or other) variables that affect unemployment. Notwithstanding the above mentioned shortage, the results are indicative and have its scientific value. Inclusion of other variables in the analysis, it could result in somewhat different results. However, as always in this type of research, identified shortcomings of one research represent a stimulus and recommendations for some other researches.

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## ANALYSIS OF FOREIGN DIRECT INVESTMENT AS A TOOL OF REGIONAL DEVELOPMENT

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### ABSTRACT

*Globalization represents a phenomenon of the contemporary world. It is characterized by open borders, constantly turbulent changes, and freedom of movement of goods, services, capital and people. Each country tends to provide greater economic development in the domestic economy and higher living standards for its citizens.*

*The regional development can be defined as a government program which aims to promote industrial development and economic and social regions afflicted by unemployment or other bad economic and social situation. The main objective of the research article is to define and to analyze the foreign investment as a tool of regional development. The relationship between foreign direct investment (FDI) and economic growth is the subject of longstanding debates.*

*These foreign investments represent one of the main factors for economic development that can have positive implications for employment and growth in gross domestic product by creating jobs, boosting productivity and competitiveness, industrial specialization, transfer of sophisticated technology and providing fast access to the global market.*

*The basic problem of the regional development is the decreasing of the differences which are considered as negative between the regions and States, also called disparities that are occurring. But, the target would be the maintenance of the strong sites in those regions, especially in the area of the regional diversity existence.*

*To ensure the effective development, the important point derives from the analysis of the factors influencing the increase of the regional competitiveness and the realization of the targeted activities and projects with objective to decrease disparities, to harmonize development, to ensure regional diversities.*

**Keywords:** *economic growth, foreign direct investment, regional development*

### 1. INTRODUCTION

Globalization represents one base characteristic of economic and political integration, it is a process which in modern society is included in all spheres of public life, is essential for economic growth in the world economy. The process of globalization leads to increase economic interdependence and interconnection of countries, where geographical boundaries and physical distance lose their meaning, and national economies, conditionally said, lose their national economic identity.

There are many authors who worked with the globalization phenomenon and have given their own definition or at least determining framework of globalization. However, there is no generally accepted definition about globalization. The reason for that is the complexity and multidimensionality of this phenomenon, as there are many aspects from which it can be considered and explained.

Here are some of world commonly used definitions on globalization: "*Globalization represents the growing interdependence of states resulting from the increasing integration of international trade, outgrowth of international corporations, labor, finances and ideas in one global market.*" (Soros, G., 2005) Another definition of the globalization says: "*Globalization is defined here as a set of economic and political structures and processes deriving from the changing character of the goods and assets that comprise the base of the international political economy—in particular, the increasing structural differentiation of those goods and assets.*" (Cerny, P., 1995)

International movements of capital, as a part of international funding are one of the most attractive forms of international cooperation and achieving strategic goals. Not one economy can be isolated from the capital fluctuation in the world economy, whether it appears in the role of provider or recipient of capital. Is not a physical movement of capital but more of financial transaction between different countries and refers to the borrowing and lending between those countries.

Each country tends to provide greater economic development in the domestic economy and higher living standards for its citizens. The relationship between foreign direct investment and economic growth is the subject of longstanding debates. These foreign investments represent one of the main factors for economic development that can have positive implications for employment and growth in gross domestic product by creating jobs, boosting productivity and competitiveness, industrial specialization, transfer of sophisticated technology and providing fast access to the global market.

## **2. RESEARCH OBJECTIVE**

The main objective of the research article is to analyse the foreign direct investment and the regional development. The countries are making great efforts to attract foreign investors, which will enable: inflow of capital, encouraging economic growth and development, renewal of outdated technology, acquisition of new managerial skills and etc. Regional development is very closely related to a region and its competitive advantages which affect the competitiveness of the region. Regional development is not a one-off activity, but it is a long-term strategy which has to be developed in great detail (the vision of the policy, objectives and strategic tools are important). This policy, which is applied in the context of ensuring regional development, must have sustainable character.

## **3. METHODS AND METHODOLOGY**

The research is processed by using a wide scale of the scientific methods and procedures. The specific range of methods was based on the research needs of the individual parts. The intention is to follow the logical continuity of the articles' parts, the correctness and the adequacy of information and data. We analyzed scientific publications and scientific articles, papers by various authors. Article represents the basis of the planned long-term research which expected the use of more scientific methods.

## **4. REGIONAL DEVELOPMENT**

Regional development is defined, by the Law no. 539/2008 Coll. on regional development support, as amended, as "*a set of social, economic, cultural and environmental processes and relationships that take place in the region and contribute to improving its competitiveness, sustainable economic development, social development and territorial development and to reducing economic disparities and social disparities between regions.*" According to Skokan

(In: Stejskal, J. – Kovárník, J., 2009), regional development is characterized by *"set of processes taking place in a complex system of regions. The system approach is necessary for influencing and governance these processes."*

Stough and Roberts (In: Stejskal, J. – Kovárník, J., 2009) dealt with issue of the definition of regional development. According to these authors, regional development is a *"process application and resources available in the region, resulting in the sustainable development and desired economic results for the region which meet the expectations of businesses, residents, non-residents as well."*

The main objective of the regional development maintenance is to eliminate or to soften undesirable differences on the level of the economic, social and territorial regional development and therefore to increase the economic efficiency, competitiveness and the development of innovations, to increase the employment and the living standards of the inhabitants in the regions while maintaining the sustainable growth. The last important change of the cohesion policy specification was amended by the **Treaty of Lisbon**. The Treaty of Lisbon comprised a lot of changes in the European system and amended the policy itself as well. From the moment it entered into force, we can really discuss the cohesion policy. From the moment of defining the regional policy in Single European Act, the policy reinforcement affected the area of economic cohesion and social cohesion. By the Treaty, but also by the new strategy Europe 2020, the new dimension is established. The article 3 of the consolidated version of the Treaty on European Union recognizes that EU *"shall promote economic, social and territorial cohesion and solidarity among Member States"*. The macroeconomic indicators of the cohesion policy and their positive influence can be observed, but in the same time, it is possible to observe the critical points which have the negative influence on the economic results of the States or regions. The Cohesion policy creates many synergic effects and therefore the Cohesion policy requires the managerial approach on the regulation and realization. The basic problem of the regional development is the decreasing of the differences which are considered as negative between the regions and States, also called disparities that are occurring. But, the target would be the maintenance of the strong sites in those regions, especially in the area of the regional diversity existence. To ensure the effective development, the important point derives from the analysis of the factors influencing the increase of the regional competitiveness and the realization of the targeted activities and projects with objective to decrease disparities, to harmonize development and to ensure regional diversities.

The role of regional policy is to find differences and causes of unequal development of regions. Recommendations, strategies, plans and objectives can be determine by application of this policy to eliminate these disparities. We consider the main causes of regional disparities - the natural potential, residential structure, position attractiveness, demographic structure, economic specialization of regions, as well as territorial and administrative organization.

While there will be differences between regions, regional policy will be in the country its reasoning. Regional differences have an impact on the resources of the regions (economic area), social conditions (social field), but very strong impact on the policy area. The authors of publications, experts, and researchers concerned with the implementation of regional policy and the case for its implementation from their work:

- States are composed of non-homogeneous regions. The national economy is a set of regional economies, which have different growth rates. The growth of the national economy is slowed down by lagging regions.
- Regional differences are significant problems of socio-economic development.



- Socio-economic differences are the basis of political problems in the region, but especially in the country.
- Regional policy is linked with urban problems.
- Regional policy addresses the allocation of funds detailed, allowing for targeted development.

Regional competitiveness lacks even a clear, widely shared definition, there are several ideas proposed by academics as well as policy making institutions. Bekes (2015) operates on definition by Meyer-Stamer and Dijkstra. Meyer-Stamer states that: "We can define (systemic) competitiveness of a territory as the ability of a locality or region to generate high and rising incomes and improve the livelihoods of the people living there." While Dijkstra proposes: "Regional competitiveness can be defined as the ability to offer an attractive and sustainable environment for firms and residents to live and work." Mrva (2007) defines competitiveness as the ability to create, to maintain and to strengthen the own competitive advantages. The existence of a competitive advantages constitutes a factor that allows to achieve growth of competitiveness and thereby achieve the purposes of that increase of competitiveness pursues.

We can say that regional competitiveness is the ability of regions to generate income and to maintain employment levels in national and international competition. It is necessary for the regions to be able to identify its competitive advantages and exploit them to their advantage. We can identify several factors of competitiveness of regions, by using the analysis of different publications:

- Infrastructure,
- Social capital,
- Human resources,
- The structure of economic activities in the regions,
- Clusters,
- The efficiency of public administration,
- Innovative capacity,
- Foreign direct investment.

Fostering competitiveness will require further improvements in eliminating the barriers to a truly integrated market for services and ensuring compliance with fair- trade rules. European Union should prioritize its investments to foster a smarter European economy by creating an integrated innovation system. One of the solutions could be the foreign direct investment.

## **5. FOREIGN DIRECT INVESTMENT**

The movement of capital across national borders creates international diversification of business activities that contribute to gaining a competitive advantage and creating global competitive product. International capital movements have significant potential benefits for economies around the world. It affects the economic growth, employment and economic stability of individual countries.

The motives for international capital movements have been a subject to analysis of economists since the early stages of capitalism. Economic theorists and experts, Adam Smith and David Ricardo are the first theorists who believe that the main motive for international movement of private capital is the difference in the amount of national profit rates. The representative of classical economic thought, which is considered as one of the predictors of the theory for mobility of factors of production, John Stewart Mill, reviewing the international movement of capital, concluded that the basic reason that causes this phenomenon is the tendency of

declining profit rate in the economies affected by the Industrial Revolution. Although this theorist, as Adam Smith and David Ricardo did not disclose the reason for the trend of declining profit rates in industrial countries, however these authors have set basic assumptions for further observations and learning. In the modern economy, the reasons for the international movement of capital, first of all, depends on the shape of the capital invested in.

In economic theory, there are mainly three types (shapes) of the international capital flow:

- International flow of borrowing capital
- Portfolio investments
- Foreign direct investment.

Unlike the borrowing capital and portfolio-investments, the **foreign direct investments** are a type of capital investment that allows the foreign investor the right to property, control and significant influence in the management on the basis of the invested capital. Considering the fact that foreign direct investments allow significant influence over the company control and their dynamics is also referring to the activities in the multinational corporations and the changes in the global business environment, we can state that the foreign direct investments are something more than an international capital flow. Connecting with foreign companies in any possible way leads to expansion of business activities of that company outside the borderlines of the country, and these are the steps of globalization. (Salacuse, J. W. 2014) Foreign direct investments are the most secure way toward globalization and the most important aspect in the assessment of the level of company's achievements at that particular point. They contribute to the development of the process of globalization and internationalization, help in the economic integration of developing countries and the world economic flows, and their meaning and role grow in the process of liberalization of the world trade. (McConnell, C. – Brue, S. – Flynn, S., 2011)

According to the International Monetary Fund (2009) and OECD (2008) definitions, “*foreign direct investment reflects the aim of obtaining a lasting interest by a resident entity of one economy (direct investor) in an enterprise that is resident in another economy (the direct investment enterprise)* “. The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the company. Direct investment involves both the initial transaction establishing the relationship between the investor and the enterprise and all subsequent capital transactions between them and among affiliated enterprises. According to the IMF-Manual 5th Edition (2005), foreign direct investment enterprise is defined as “*an incorporated or unincorporated enterprise in which a foreign investor owns 10 per cent or more of the ordinary shares or voting power of an incorporated enterprise or the equivalent of an unincorporated enterprise*”.

The numerical guideline of ownership of 10 percent of ordinary shares or voting stock determines the existence of a direct investment relationship. “*An effective voice in the management, as evidenced by an ownership of at least 10 per cent, implies that the direct investor is able to influence or participate in the management of an enterprise, but does not require absolute control by the foreign investor.*” (OECD, 2008) World standards related to statistics on foreign direct investment are also established by the OECD in the manual related to foreign direct investment, Benchmark Definition of Foreign Direct Investment, and the System of National Accounts, 2008-SNA 2008194 that are fully compatible with the concept of the definition of IMF.

In Republic of Macedonia under the Law on Foreign Exchange, *"Direct investments are investments in which the investor intends to establish lasting economic relations and / or acquire the right to manage the company or other legal entity in which invests. In Republic of Macedonia as a direct investment is recognized the following:*

*Establishment of trade company or an increase in the share capital of a the trade company wholly owned by the investor, establishing a branch office, or acquisition of full ownership of the existing company;*

*Participation in a new or an existing company, if the investor holds or acquires more than 10% of share capital of the company, or more than 10% of voting power;*

*Long-term loan with maturity of 5 years or more, when it comes to loan from an investor and which is intended for a company in its full ownership."*

Division of foreign direct investment can be made according to various criteria. The basic forms of foreign direct investment are:

- **Greenfield investments** - Establishment of a new company, when foreign investors build new production facilities with 100% ownership of the foreign investor.
- **Merger and acquisition** – *"The acquisition of a majority stake in the ownership of an existing company by purchasing the company, buying shares or directly buying ownership stake. In a merger, two organizations join forces to become a new business, usually with a new name. Because the companies involved are typically of similar size and stature, the term "merger of equals" is sometimes used."*(Mankiw, G., 2014)
- **Joint Venture** – *"A business arrangement in which two or more parties agree to pool their resources for the purpose of accomplishing a specific task. This task can be a new project or any other business activity. In a joint venture (JV), each of the participants is responsible for profits, losses and costs associated with it. However, the venture is its own entity, separate and apart from the participants' other business interests."* (Geoffrey, J. – Reny, P., 2011)

Division of foreign direct investment can be made by other means, however it is important to know that every company has different reasons when making the decision on where and how to invest. Whether a company decides to invest capital in a country depends on many factors, but primarily on the assessment of the profits that can be made from the long-term operation, but also the willingness of the host country to accept, speed and ease operation. One of the main dilemmas of investors is the selection of the right type of investment in a country, or whether to invest in an existing business or to start a new company, and the overcoming this dilemma influenced by many factors.

### **Determining factors and effects of foreign direct investment**

Guided by the basic motive – maximization of profit and the additional incentive for the safety of the investment, foreign investors before making a decision on the location of the investments, perform detailed analysis and examination of the environment that will allow them achieving the highest profit with the lowest risk.

The calculation of the profit and risk of investing in a specific country, include a full analysis of a range of factors that reflect the complete stability of the country: the political, economic and the legal security, market size, geographical location, (availability of) human and natural resources etc. There are different determinants which have different impact depending on the aspect of an investment.

They include: "*investment motive (seeking new markets, resources or greater efficiency), type of investment (greenfield or existing company), sector of investment (manufacturing or services) and size of the investment.*" (Gruevski, N., 2007)

Determinants that have impact when foreign investors **seek for new markets** in order to achieve economies of scale in already developed production are: the size of the local market, the purchasing power of the population, the growth rates of the market, the preferences of customers and the structure of the domestic market.

When the motive of foreign investors is the **resources-seeking**, then determinants which affect the investor choice are: prices of raw material, labor costs, infrastructure (roads, railways, ports, telecommunications, energy), and the level of technological development.

And if the motive of foreign investors is **increasing efficiency**, foreign direct investment is determined by the ability to increase competitiveness through lower production costs and overall operations. Determinants of foreign direct investments which are motivated by higher efficiency are actually a combination of the determinants of the above mentioned two types of investments.

Nevertheless, because of the complexity of FDI as an economic category, which depends on many factors whose relative importance varies from changes in the economic environment, it is considered that the factors affecting FDI are changing over time – just as there is a change in economic conditions in the host country and the international environment.

The International general environment is composed of **economic, technological, political and socio-cultural** forces/factors within which there are variables that create changes in the environment.

- During the analysis of the environment of the potential host country, as most important **economic factors** are considered: the economic system, the main economic indicators, existing infrastructure, fiscal and monetary policy. Foreign investors will never decide to invest in an unstable economy with unstable national currency, with inconsistent monetary and fiscal policy and high inflation.
- **Technological factors** arise from the different combination of equipment, knowledge and skills. As for the foreign investors, factors of particular interest are: energy resources, information technology, structure of educated workforce in the country, the legal protection of industrial property and so on. All of these factors are important elements that have a great influence on the decision of foreign investors to invest in certain country.
- **Political and legal factors** arise from the political environment of the country which affects the design of laws, and these factors include: the stability of the in a country, the regulation of trade, foreign policy and the legal system. The political stability of the country-potential host of foreign direct investment is very important and has critical impact on the development of the country and on attracting foreign capital, because foreign investors almost never come in unstable and insecure areas. Politically unstable countries attract speculative capital, which due to the increased risk expects fast and high earnings.
- Finally, analysis of the international environment ends with an analysis of the **socio-cultural factors** with special attention to the habits and customs, morals, lifestyle, attitude toward foreigners, and the social institutions. The differences in culture between nations affect the organization of human activities in order to create a widely accepted concept of diversity in work practices.

The listed factors actually determine the risks that foreign investors may face, which can be identified as macroeconomic risks, political risks and risks of competition. If the risks of investing are higher, there should be also a higher profit rate of the investment and vice versa. In order to increase the profit rate and to reduce the risks of foreign investors, countries often give special privileges to foreign investors, using tax incentives, financial subsidies and regulatory benefits. Such incentives cannot be a substitute for creating a favorable business climate in general, but can complement good investment climate or can be a compensation for the domestic market imperfections that cannot be solved otherwise.

## 6. CONCLUSION

Foreign direct investment is an important accelerator of economic growth and regional development. On the other hand, foreign direct investment can be the cause of a deepening of regional disparities. Appropriately selected regional policy can prevent new and old deepening differences between regions. Regional policy must specifically allocate foreign investment in less developed regions. Implementation of regional policy is a complex process involving a large number of subjects and objects that make up a policy. They implement, monitor, evaluate and ultimately carry out the policy. According to the adopted plan and the objectives of cohesion policy, output is represented by a demonstrable reduction of regional disparities. Only if we will have the correct setting and application of basic criteria, the policy can be implemented effectively.

The problem is that such a policy requires the readiness of the regional economy - the absorption capacity of the economy of the region. Impacts of foreign direct investment vary in nature (social, economic, etc.). The analysis deals mainly with regional impact. Foreign direct investment have an impact on increasing regional employment and reducing regional unemployment, increasing regional gross domestic product, regional growth. Socio-economic development at the local, but also regional level can cause growth in the economy as a whole. Foreign investor contributes to the national income.

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## THE MODEL OF STABILITY OF THE PORTFOLIO FOR THE MORTGAGE FINANCING

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### ABSTRACT

*The main subject of this paper is to analyze the financial advisory with focus on the acquisition and the securitization of housing. Financial advisory represents a service offering an independent view to the management of the portfolio of an individual client. The main benefit of the service, for the individual client, is the expertise, individual care, independence, availability of services regardless of the opening hours of financial institutions. The research paper is processed by using specific methods that were selected with an emphasis on the need to generate background data in order to build the Model of stability of the portfolio for mortgage financing. There were used especially those methods: (1) semi-structured interviews with financial intermediaries, (2) questionnaires, (3) analysis of existing financial portfolios, (4) analysis of the supply of mortgage loans from specific banks in the Slovak Republic. The output is the Model of stability of the portfolio for mortgage financing. The model provides the background data for right decisions in the process of applying for a mortgage.*

*Functionality of Model of stability of the portfolio for mortgage financing will be verified by application to particular cases of client's portfolios. The proposed Model of stability of the portfolio for mortgage financing will benefit the applicants for a mortgage, because model provides them the information if their actual revenue is high enough for the requested mortgage. Nowadays many people have turned for advice to financial advisors and intermediaries. The proposed Model of stability of the portfolio for mortgage financing provides the opportunity to check the suitability of the proposed solution, not just blindly trust the skills and knowledge adviser or intermediary. Finally, it may be beneficial for intermediaries and consultants.*

**Keywords:** *financing, mortgage, portfolio, stability*

### 1. INTRODUCTION

Financial portfolio is not comprised only by the product with nature of fully funded, e.g. current account, term deposit, building savings or investment fund. Financial portfolio is comprised also by the product such as loans – mortgage loan. The impulse for writing this paper is the lack of a framework for a process for real estate financing. The aim of this paper is to analyse the system for development financing portfolio of individual clients, with a focus on the acquisition and securitization of housing and propose an optimization model of real estate financing process without compromising the integrity of the financial portfolio.

### 2. RESEARCH OBJECTIVE

The aim of this work is to analyze the system for development of financing portfolio of individual client with focus on the acquisition and provision of housing. Results / outcomes of research is a model that shows the solution housing needs through external financing without disrupting direction of current portfolio in the Slovak Republic.

### 3. METHODS AND METHODOLOGY

The research is processed by using a wide scale of the scientific methods and procedures. The specific range of methods was based on the research needs of the individual parts. The intention is to follow the logical continuity of the articles' parts, the correctness and the adequacy of information and data. The research methods were selected in the context of the need to obtain background data in order to compile The Model of Stability in the Portfolio of Mortgage Financing. In our research, we are mainly used:

1. semi-structured interviews with financial intermediaries;
2. a questionnaire survey;
3. analysis of existing portfolios;
4. analysis of the possibilities of mortgage loans from specific banks in the Slovak Republic (SR).

### 4. LITERATURE REVIEW

We can recognize two basic types of financing of capital goods in terms of accounting, we can use own resources and foreign resources. Own resources can be represented by savings, profit from previous years, by some monetary donations and sponsorship. We can include among foreign sources some short and long liabilities, leasing, bills or simply said some form of loans. Housing is mainly the ownership of the building, so it is therefore an asset for accounting purposes. Two types of financing can be recognized for acquisition of this asset – financing by its own resources or by a loan. The market situation is not very suitable for housing finance from own resources because it is a huge disparity between the amount of income and property value.

If we want to fund, for example, an apartment with an area of 50 m<sup>2</sup>, we would need an annual income of about € 61,350 (€ 1,227 per m<sup>2</sup> x 50 m<sup>2</sup>), while the average net wage is merely € 4,545.38. If we wanted to buy an ordinary house or an apartment from own funding, our income would have to rise almost fourteen times. (Eurostat, NBS)

#### 4.1. Financing of own funds

The first option is to pay / to finance the purchase of residential property solely and exclusively from its own resources. This option is improbable for several reasons:

- a significant imbalance between income and real estate prices;
- a low interest rates;
- the need for financial reserves, respectively free liquid money.

Low interest rates motivate potential buyers to the use of external forms of financing. There is a risk of using all available financial resources to finance the purchase of real estate exclusively from its own resources, the reserve is not created. The creation of reserves is regarded as crucial for the stability of the portfolio and the overall state of family finances.

#### 4.2. Financing of foreign sources

Financing by foreign sources is the purchase of real estate through the use of external sources of funding, e.g. we can borrow to purchase real estate. Due to the nature of this paper and taking account of the rules of creation of a portfolio from external resources, we exclude consumer lending and other various forms of borrowing. Primary attention is focused on the mortgages, because we consider only this source of external financing as rational.



#### **4.3. Risks associated to property purchase**

The most frequently risks occurring during buying real estate are:

- The failure to establish a financial reserve, in case of mortgage financing. (This is related with ensuring a sufficient amount of income in any life situation, at least at the level which is necessary to cover household expenses. Insurance is one of many ways of ensuring an adequate income.)
- The failure to ensure the property and households to weather, to other people or to himself.

In the case of buying a house through a mortgage loan, the biggest threat is the property rights to that real estate. While we use this real estate, we repay loans but the bank formally owns this property. Therefore, in case where we will no longer pay the mortgage, the bank has the right to evict us and the house can be sold at auction. Precisely for this reason it is necessary to have created sufficient cash reserve so that we can cover the short-term loss of income, which may arise either due to illness, injury or job loss. Another threat that exists for both modes of acquisition of real estate is its protection from the weather, but also from ourselves, i.e. from owners. Because no one can say for sure where they come large hail or strong winds or the real estate can be flooding.

The aim of the scheme is primarily the protection of acquired assets, because, as already has been said above, the real estate prices significantly exceed the income of the majority of the population. Thus, if security is neglected, the situation when the house is damaged or is completely destroyed due to some natural disaster, this situation is unsolvable for the family.

#### **5. RESULTS AND DISCUSSION**

Results of our research were divided into sections based on the defined objective, partial objectives and research methods used in the following composition:

- The background in the mortgage market in the Slovak Republic;
- The Model of Stability of the Portfolio for Mortgage Financing.

The exploration of situation in the mortgage market of the Slovak Republic has been important to gather information on the current situation in the field of mortgage loans that are crucial to set the model parameters. In conclusion, we present the proposed the Model of Stability of the Portfolio for Mortgage Financing which usability is demonstrated by application to the particular case.

##### **5.1. The situation in the mortgage market in the Slovak Republic for the needs of the model**

In the Slovak Republic, it is possibly to choose the length of fixation to 1, 3, 5, and 7 or to 10 years. The decision on the length of the fixation is on the client. In the Slovak Republic, the loan to value (LTV) is set at 70% (under specific conditions to 100%), while it is set to 60% in Western Europe (rarely reaches 100%). Single fee is charged at the value of 1% of the value of the outstanding principal in the case of early repayment of loans beyond the anniversary fixation. A fee for providing a mortgage loan is usually 0.8% of the mortgage. The purchase of real estate is supported by the state under specific conditions. State contribution for young people provides total discount from 3% interest rate. State contribution for young people is designed for people aged 18-35 years with income that shall not exceed the 1.3 times of the average monthly nominal wage for employees in the national economy for the calendar quarter of previous calendar quarter in which the application for the mortgage loan was made. (It is fixed at € 1,127.10 from 1 July 2016, while it was at the amount of € 1,242.80 € for the previous quarter – from April 1, 2016.) (Law no. 483/2001 Coll. on banks and on amendments to certain

laws) State Housing Development Fund provides mortgage loans to applicants for selected types of real estate upon fulfillment of the basic conditions, according to Law no. 150/2013 Coll. the State Housing Development Fund.

Since March 2017, Regulation of the National Bank of Slovakia on mortgage credit from the Bulletin of NBS comes into force, it is the legislation amount of 37/2016. Given the above legislative regulation, LTV will be limited to 70% and the conditions for obtaining mortgage loan will also be tightened. The conditions for sufficient creditworthiness will change. So called stress-test is added (premium to the interest rate + 2%) and also the counting of the reserve.

The maximum amount of the loan installments, according to the new rules, will be counted as follows (prepared by the basis of data according to Jančík, M., 2016):

|                                                         |      |
|---------------------------------------------------------|------|
| • Net Monthly Income                                    | 1000 |
| • The minimum subsistence for one person                | -200 |
| • 20% financial reserve (gradual change from 5% to 20%) | -160 |
| • Installment of loans (1)                              | 0    |
| • Credit Card 3% in 1000 (also not drawn)               | -30  |
| • Available balance                                     | 610  |

The maximum amount of mortgage loan, which would be given to the client acquired, is €172,300 at 1.69% a year, 5 years fixation with a maturity of 30 years. In case of setting the stress-test 2%, the client should be entitled only to €132,600 for the same fixation and the same length of repayment.

## 5.2. The Model of Stability of the Portfolio for Mortgage Financing

The mission of the model is to serve the ordinary citizens in evaluating whether their current income possibilities can maintain a stable portfolio and the mortgage loan. The model is created in the application of commercially available Microsoft Office versions 2007 and higher, mainly due to the availability of the program to the public, its popularity, simple user interface and compatibility. The proposed model of stability consists of two parts that work dependent on each other in that order:

- **The calculator of mortgage financing,**
- **The stabilization of the portfolio.**

In Part 1 of the proposed Model portfolio stability, we just fill in the fields in which we enter the values of the following variables:

1. The requested loan amount - we enter the loan amount.
2. Gross income of the applicant and gross income of the co-applicant - we set monthly gross earnings of persons entering into credit relationship.
3. Age of the applicant and co-applicant - in order to ascertain entitlement to the state contribution for young people and to determine the maximum duration of mortgage loan.
4. The number of years of repayment - we enter the number of years we would like to pay, it is checking also with the age of the applicants.
5. Property in the regional capital - whether the property is located in the regional capital - in order to ascertain the maximum value - the maximum of LTV.
6. The length of fixation - we enter the desired length fixation.

The model calculates the following values after entering the input parameters:

1. The total net household income;
2. The entitlement to state support for young people;
3. The interest rate depending on the fixation and on the entitlement to the state support for young people;
4. The permissible duration of the loan - depending on the applicant's age, our model adjusts for repayment of the mortgage loan;
5. The necessary amount of the value of the mortgaged real estate - taking into account the LTV;
6. The amount of own resources needed - given the loan amount and LTV determines the required package of own resources;
7. The amount of the monthly installments of the loan;
8. The surplus value - how much we pay for extra credit in interest;
9. The authorization of credit - whether if the client or household can carry the loan repayment, optimized for maximum 1/3 of total household income.

Part 2 of our Model reflects the impact of the cost of mortgage loan and fees associated with ensuring property and income stability to the portfolio. It provides insight into changing of the cash flow (CF) of households after the change of interest rate and fixation expiration. Part 2 of our Model simulates following four scenarios:

- (1) Increasing interest at 2% p. a.**
- (2) Increasing interest to 3% p.**
- (3) Increasing interest to 4% p.**
- (4) Increasing interest to 5% p. a**

In Part 2 of our Model, we fill only the item of total household expenditure. Other unknown values are calculated based on variables that were entered in the first part of the model. Green box in section A represents cash flow of households which is positive in this case. Suggested remedies do not distort the stability of the domestic finance. Section B shows how to change the installments after a period of fixation in different scenarios. Section C shows the status of cash flow by increasing payments in different scenarios. We can notice that if the family manage its financial resources as before, the cash flow will reached to negative values after a change of the interest rate to 4% or 5%. This is unsustainable for long term. One solution is to insert an extraordinary repayments of such an amount to maintain the level of the initial payments. The amount of money that should be placed during various scenarios in order to maintain the amount of installment can be found in Section D. The last item "Stable portfolio" is based on the estimated present cash flow from section A and it is the stability of the output of the portfolio under current conditions.

### **5.3. Application of the Model of Stability of the Portfolio for Mortgage Financing**

We will show the application of the Model to a particular case:

The client is a young woman who has a university degree, 34 years of age. Woman wants to buy property in Bratislava, the part - Nové Mesto. Gross Average Income represents the amount of € 1,300, without bonuses. The price of the property is €128,000 which represents the amount of €12,800 from own resources, at 90% LTV. The applicant has €15,000 from own resources, which is sufficient amount for this case. She will live with a boyfriend (33 year) in this new apartment. The boyfriends' average gross income without bonus is €1,600. Her boyfriend will not be a co-applicant for the loan, the reasons are irrelevant, but not such that he is excluded from loan relationship (he has any enrollment in banks' register).

*Table1: Truncated Model Output (Processed by authors)*

|                                                                                                             |                     |
|-------------------------------------------------------------------------------------------------------------|---------------------|
| The requested loan amount                                                                                   | 115,200 €           |
| Years of repayment                                                                                          | 30                  |
| The total net income that is counted in the application                                                     | 956.76 €            |
| State support for young                                                                                     | YES                 |
| Enter the length of fixation                                                                                | 5                   |
| Interest rate in%                                                                                           | -0.05* <sup>1</sup> |
| Amount of monthly installments of the loan                                                                  | 377.21 €            |
| Stability of the portfolio                                                                                  | NO* <sup>2</sup>    |
| Total household expenditure                                                                                 | 1,150.00 €          |
| Net income of households                                                                                    | 1,986.76 €          |
| A mortgage loan and insurances                                                                              | 663.21 €            |
| Total cash flow of households                                                                               | 173.55 €            |
| Household cash flow under various scenarios                                                                 |                     |
| Scenario 2%                                                                                                 | 62.48 €             |
| Scenario 3%                                                                                                 | 4.47 €              |
| Scenario 4%                                                                                                 | -57.30 €            |
| Scenario 5%                                                                                                 | -122.68 €           |
| Amount of extraordinary payments on the anniversary of fixation to maintain the original installment amount |                     |
| Scenario 2%                                                                                                 | 10,644 €            |
| Scenario 3%                                                                                                 | 18,644 €            |
| Scenario 4%                                                                                                 | 25,644 €            |
| Scenario 5%                                                                                                 | 31,644 €            |
| Stable portfolio                                                                                            | YES                 |

\*1 the rate is negative because the model calculates a mortgage with a state support for young so the payments amount corresponds to the interest rate of -0.05%. The state support for young is repaid for the sum of €50,000 and the balance amount is remunerated at the full rate. Under the current conditions and simple adjustment, the Model shows a negative interest rate.

\*2 the loan was in the bank approved at a given income opportunities and parameters but our model says that a given loan amount is not optimal under the current income options and parameters. In this case, the income of a friend does not still take into account.

We see that interest rate changes in two scenarios will have a negative impact on cash flow of households. It is necessary to be ready for given situation. One way is to insert an extraordinary payments in order to preserve the original installment amount, our model provides the amount of extra payments needed for all scenarios. The second alternative is to adapt the income resp. to optimizing expenditure. In this case, if revenue will be stable and household spending will not rises rapidly, we can describe the state of the portfolio as a relatively stable because it meets 50% of the possible scenarios.

#### 5.4. Recommendations

Models generally represent simplified processes of reality. Our Model of stability of the portfolio, presented in this paper, is designed to assist in the calculation of mortgage loan and its impact on the existing portfolio, resp. on the stability of the family finances. The effort was to provide the most comprehensive but also simple model of the process of real estate financing

from external sources. The resulting model portfolio stability is simple and compiled specifically for the Slovak Republic. We believe that the resulting model will serve not only to applicants for a mortgage loan but also to consultants and the intermediaries to take into account the stability of the portfolio with respect to the design parameters of a particular financing mortgage.

Simplification of the reality in the Model caused that the model has its limits. We can mention:

- Deviation of calculation of net earnings. Deviation during calculating net earnings is due to the simplification of the original calculation. The initial calculation of net income takes into account the high number of parameters, some of which are actually, under certain circumstances, variable - because they depend on the input values. Our Model proposes a simplified calculation of the parameter resp. derived coefficient.
- Deviation in the calculation of payments during return of the state subsidy for young people. Deviation when calculating payments of the loan during return for the state subsidy for young people is a claim due to the fact that banks did not provide methodology for this calculation. Our derived factor was assessed by the correlation of variables obtained from thirty existing banks offers for real clients.
- Deviations in the results can also be seen for surplus value of the loan. We cannot say with certainty in which direction will move the interest rate after the period of fixation, this value is calculated in the original-fixed interest. Thus, the value is calculated for the entire repayment period but during the initial rate of interest. That is why the data is only indicative. Assuming that interest rate after a period of fixation will increase, this value will be higher than shown model.
- The model does not take account such variables as human factors, change of work, decrease or increase of income in the future. In case that any of the above listed situations occurs it is necessary for cash flow of, respectively for all model to recalculate all parameters with new variables.

Benefit of the model is that it will show whether the applicant can handle the mortgage loan with its income opportunities. The strength of the model is to focus on long term sustainability of portfolio. If the portfolio is stable under administration / approval of the mortgage loan, this portfolio may not be stable for a change in interest rates after a period of fixation. The model provides preview of the development of cash flow in different scenarios. Red color warns the client. In this case, it is necessary to be ready for a possible future situation. The model calculates amount of money the client / household must procure in order to keep the original installment amount. Many people may argue that we do not know what will happen if interest rate decreases after a period of fixation. This situation, of course, can happen even though it is improbable. If that happens, the amount of the installment decreases for a household and household will have a pot of money that can be used for practically anything, although primarily it is advisable to get rid of financial obligations. The model is static so this model will become outdated over time. That is why this model requires regular monitoring, review and adjustment of parameters and coefficients. We can imagine, in the future, more comprehensive compiled model which will exist in the form of a computer application that would be linked to a database. This model will draw the actual data itself and will be regularly updated. We believe that significant positive step would be an application for mobile phones while everyone could have their Model of stability of the portfolio at any time disposable.

## 6. CONSLUSION

We dare to express assertion that model, despite its limitations, provides a sufficient basis to decide on the appropriateness of the inclusion of a mortgage loan in the portfolio. Finally, it

provides solutions to how to prepare for a possible change in interest rates after a period of fixation of the mortgage loan. The proposed Model of stability of the portfolio for mortgage financing will benefit the applicants for a mortgage, because model provides them the information if their actual revenue is high enough for the requested mortgage. Nowadays many people have turned for advice to financial advisors and intermediaries. The proposed Model of stability of the portfolio for mortgage financing provides the opportunity to check the suitability of the proposed solution, not just blindly trust the skills and knowledge adviser or intermediary. Finally, it may be beneficial for intermediaries and consultants.

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## **ADOLESCENTS' PERCEPTION OF CELEBRITIES IN SOCIAL ADVERTISING: ACTIVATION OF TRANSACTIONAL ANALYSIS EGO STATES**

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### **ABSTRACT**

*Celebrities and famous people in general have a high potential for creating and modifying the attitudes and preferences of so-called "ordinary people". From a marketing point of view, they are a unique and effective way of communicating with the consumer. The use of celebrities in marketing activities is inherent in both the commercial as well as a non-commercial sectors. The presented contribution concentrates on the perception of the concepts SELF and the CELEBRITY by adolescents. The study presents results of original exploratory research composed of two phases. The first phase of study applies a method of semantic differential reflecting how adolescents perceive selected celebrities with regards to attractiveness, credibility and likeability.*

*Profiles of the SELF and CELEBRITY concepts are then analysed concentrating on the activation of the transactional analysis ego states. Results of the second phase of the study present how age cohorts of adolescents perceive examined concepts along the lines of dominant ego states. The design of the research study demonstrates the application of transactional analysis as the original psychological theory in the research of marketing communications. Using this innovative method we have recorded the perception of celebrities in social advertising among adolescents. It highlights the specific perception of the phenomenon of celebrity at the level of the mensa ego state-Parent, Adult and Child within the defined target group. The application of transactional analysis concentrated solely on the category of recommended celebrities introduces an innovative approach of examining this phenomenon with a high potential for forming the basis of the further practical application of celebrity support.*

**Keywords:** *adolescents, celebrity endorsement, social advertising, transactional analyses, semantic differential*

### **1. INTRODUCTION**

The current form of modern marketing predicts an emphasis on the strategic importance of marketing communication and its tools, among which social advertising is also included. Social advertising designed to educate and motivate a target group as part of the implementation of socially desirable measures (American Marketing association, 2015). The mission of social

advertising is to reach the public through the selected media, highlight a social problem or try to propose possible solutions and mobilize the public to directly contribute to a solution. The effort to some bring public benefit and ultimately to improve the social situation on a long-term basis, becomes the objective (Göttlichová, 2005, p. 73). Social advertising is one of the means of forming relationships with the surrounding reality, by eliminating the indifference or apathy of society and by bringing attention to social problems. In terms of marketing communication social advertising is determined as a specific sector of advertising, into which, just like in commercial advertisement in recent years, the phenomenon of celebrity has been established. Perception of a celebrity's presence in social advertising by a target group of adolescents in Slovakia is the topic of an extensive scientific study. The authors of this article as co-investigators of the scientific study submit partial results of their findings, which are related to the perception of celebrities by adolescents as interpreted the theory of transactional analysis.

## 2. CELEBRITY CULTURE

Figures who have gained their success and fame through a strong media presentation we generally refer to using the term celebrity. The interpretation of this concept and subsequent specification of a set of personalities can be made through different perspectives. The current and more media-oriented definitions use this term to refer to celebrities who have gained fame primarily through their extensive media exposure (actors, television celebrities, popular musicians) (Danesi, 2009, p. 57) or it is generally associated with famous people in the field of sports or entertainment (Oxford Dictionary, 2016).

Applying a linguistic perspective of the interpretation we can break it down into two basic terms: the Latin term *celebrem* and the French term *célèbre* (Marshall, 2004, p. 6 - 7). According to Marshall the status of celebrity symbolizes the democratic character of contemporary societies, which is also reflected in the connotations of the term *celebrem*. This is, in fact, associated with not only fame, but also with the social availability of these celebrities, with the enthusiasm of the audience being the celebration of success of the given individual. On the other hand, the term *célèbre* tends to lean more towards the media perspective previously mentioned, since it connotes something public and well known (Marshall, 2004, p. 6 - 7).

Today, the origins of the already significant socio-cultural phenomenon of celebrity, we can also derive from the genetic predisposition of the individual, which depends on a need to look up to a higher element (Harland, Moser, 2008, p. 46). It is characteristic of people to have a specific need to have faith in something "perfect" and in the case of the absence of such faith, or fragmentation of organized religious ideas (Rojek, 2001, p. 51-53) it leads to the formation of a significant affection for famous celebrities. This 'demand' for celebrities, is according to Rojek connected not only with the aforementioned fragmentation of religion, but also with the actual democratization of society and the commodification of everyday life. Concentration on the lives of individuals, was according to Marshall (Marshall, 2004, p. 4) supported by the principles of liberal capitalism and Western democracies, while the rationalization of the ideas presented was the basic principle of understanding the cultural world.

Based on these determinants we can position a celebrity somewhere between dominant rationalization principles of the given culture and popular application of the audience, identification and expressivity of the emotional force that celebrity culture in terms of a rationalizing system reflects.



### 3. BASIC PREMISES FOR SUPPORT BY A CELEBRITY

The application of celebrity support is a persuasive process of a socio-psychological nature, in which Světlík (Světlík, 2012, p. 149) highlights its complex and several-level character of the interaction process. Though, there's a conflict of several multidimensional factors: brand, recipient, notification, the originator of the notification and the actual situational factors of perceiving the communication. Celebrities as a marketing tool have considerable potential to increase the value of a product, brand or an idea and according to Erdogan we can determine this potential by three communication objectives of the application of celebrity: 1) obtaining and maintaining attention; 2) ensuring the transmission of desired attributes from a celebrity to the brand; and 3) reaching a high level of awareness (Erdogan, 1999, p. 293-297).

These objectives can also be identified in the background of five primary functional aspects of the application of celebrity determined by Mikuláš and Wojciechowski: surveillance, correlation, the transfer of values, entertainment and mobilization (Mikuláš, Wojciechowski, 2015, p. 192). Congruence of the aforementioned concepts can be also found in their comparison with the perspective of Escalas and Bettman, who define four basic strategies for the application of celebrity in marketing communication: (1) support of celebrities increasing the interest and attention of the recipients of the advertising; (2) the use of celebrities as generally attractively considered role models (resulting in presenting a lower risk of negative social evaluation); (3) application of celebrity as an expert, and in many cases as a professional in a given field and as an experienced and knowledgeable resource, it also increases the perceived credibility; and finally, it is considered (4) a strategy based on attractiveness and general popularity of these celebrities assumes the interest of consumers in identifying with these individuals (Escalas, Bettman, 2015, p. 30).

The essential connection of the above concepts is not only their relationship to the communication objectives defined by Erdogan, but also the current reference to the original models explaining the function of celebrities in marketing communication. The principles of the functional position of celebrities in the current relatively fragmented markets are explained by several paradigms, including the Theory of the Credible and the Theory of an Attractive Source, Model of the Transmission of Meaning, and Image Congruence (Hung, 2014, p. 157) as well as The Product Match-Up Hypothesis. Although they deal with traditional models of celebrity support, the authors Mikuláš and Světlík (Mikuláš, Světlík, 2016, p. 94) take them as the basis for currently applied criteria for the selection of celebrities based on the qualities of a personality and a predetermined manner as well as aim of use.

The Model of a credible source is, according to Erdogan, a strategy involving the celebrity support based on the fact that the information and incentives distributed by a credible source can influence the beliefs, opinions as well as attitudes or behavior of the recipient much more effectively. According to the author the basis of this strategy is the principle of an internalizing characteristic for the situation of the percipient who respects the sender of the information on the basis of their own personal attitudes and value structures (Erdogan, 1999). This concept is made up of three significant multi-component categories: (1) attractiveness, (2) reliability and (3) expertise of the source (Ohanian, 1990, p. 39).

The attractiveness of the source by the author lies in its physical attractiveness taking into account appearance and human beauty. The paradigm of assurance refers to the level of confidence and the degree of acceptance of the communicator and the offered message by the recipient. Expertise is the last dimension of a credible source identified originally by Hovland, Janis and Kelley, and is based on authoritarianism, competence, competence and qualifications

or expertise of the source of the message, that is the celebrity in relation to the message itself (Ohanian, 1990, p. 39). The theory of an attractive source is rooted in the theory of valence by William McGuire (1985, p. 233) and its current form is made up of four basic pillars determining the overall attractiveness of a source of referral: (1) familiarity (2), likability, (3) similarity and (4) attractiveness itself (McCracken, 1989, p. 311-312; Swerdlow and others, 2003). According to Erdogan, the first mentioned dimension is associated with the target audience's familiarity with a celebrity. Indeed, in the case that the recipients know the given figure it is possible to expect the building of a deeper and more intimate relationship leading to the identification of a consumer with the presented idea. The popularity of the figure represents a sympathy by the target segment towards a celebrity and it refers similarity to the congruence of characteristics, features, opinions and the behavior of a celebrity and the recipient of the communication. The fourth factor is the attractiveness itself referring to the physical attractiveness of the source as a successful determinant of shopping intentions and change of the recipient's attitude (Erdogan, 1999, p. 299-301).

Another important framework of the support of celebrity is the Hypothesis of Association referring to the harmonic combination of a celebrity and the item being promoted (Amos and others, 2008), that is the congruence between the values of the characteristics of the given celebrity and of the idea itself, which is being promoted. According to Světlík, when analyzing the support of celebrities, based on a specific perspective, it is necessary to look at the celebrity's affiliation itself to a particular category, since different categories of those making the recommendation embody a different set of values and possible meanings that can be associated with the product (Světlík, 2012, p. 149). In addition to the given paradigms, during the analysis of the support of celebrities, we also employed the meaning transfer model that is defined by McCracken as a three-step transfer of the meaning and values of a celebrity on the product (McCracken, 1989, p. 314 - 318).

This model is based on the fact that every person represents a set of specific characteristics and values (Schlecht, 2003, p. 7-9), which are attractive to the consumer while at the same time the consumer himself, as part of this process, identifies with them as well. The process itself is composed of three levels in which there is a gradual transfer of meaning and significance from the celebrity to the product and ultimately to the consumer himself.

#### **4. THE SOCIAL AND PSYCHOLOGICAL ESSENCE OF THE SUPPORT BY CELEBRITIES**

As already pointed out, support by celebrities is a persuasive socio-psychological process, the effect of which may be explained by the principles of the central and peripheral route of persuasion. Although there are a variety of approaches explaining the change of attitude or the principle of persuasion itself, according to Petty, Cacioppo and Schumann there are two fundamental aspects that are the common denominator of these theories: the central and peripheral route of changing attitudes (Petty, Cacioppo and Schumann, 1983, p. 138).

The central route is based on a change of attitude as a result of considering the information offered as focal points for the change of attitude. The second method of the change of attitude is based on the peripheral way of processing information, which is not accomplished on the basis of a cognitive assessment the offered information, but rather because the object of the attitude is associated with an emotionally driven key (positive - negative) (Petty, Cacioppo and Schumann, 1983, p. 138). These routes of persuasion are explained using the ELM model grounded in the knowledge of social psychology – theories, which analyze the ways a recipient's, in other words a customer's, attitude changes. According to (Petty, Cacioppo and

Schumann, 1986, p. 125) Petty and Cacioppo The Elaboration Likelihood Model provides a general framework for organizing, categorizing as well as understanding the fundamental processes of the effectiveness of persuasive communication, which is through merging primarily contrasting scientific knowledge and theoretical concepts within a complex idea ad approach.

Application of the ELM model in the context of celebrity support according to Hung comes from the predispositions of celebrities to capture the attention of the recipients on the basis of their specific attributes, which are the basis for the systematic processing of outgoing information through the central route of persuasion flowing in a persistent change in attitude (Hung, 2014, p. 159-161). This principle, however, occurs only when the recipient is interested in the given person, but as the author adds, in the case of a lower perception and knowledge of the specific attributes of the celebrity by the recipient, the involvement of the recipient of the communication remains only on the level of peripheral processing of information. In this case, the resulting elaboration is limited, the process is more heuristic and the dominant aspect is the impression transferred from the celebrity to the product.

This specific change of attitudes, is however, according to the author, much less persistent and is not stable with regards to negative arguments (Hung, 2014, p. 159-161). The Elaboration Likelihood Model gives us the background to understand the persuasive nature and character of celebrities in advertising.

According to Ruggiero (Ruggiero, 2000, p.5), the general primary postulate of celebrity involvement in media communication is their own contribution in terms of fulfilling the two basic needs of a consumer's perception: to ensure diversity (differentiation) and the subsequent identification of a brand. These needs are achieved through the application of the above analyzed concepts and are inherent to the commercial as well as non-profit sector and how they apply celebrity support. These celebrities are major players not only in the promotion of products and services, but they are currently a quite frequently used strategy in the presentation of the social marketing ideas of non-profit organizations.

The role of social marketing is to show the solution of current social problems and the shortcomings of life in a particular area, culture or society. Its mission is to change the presented and applied positions, and thus affect positively the unfavorable situation in the economic, social, political or environmental plain (Hodinková, 2015, p. 35). In this way social advertising integrates celebrities, and their more or less explicitly expressed support for the idea being presented, as well as for the socially-oriented purpose itself.

## **5. RESEARCH FILE**

The persuasive character of the entire application process of celebrity support in social advertising is significantly determined by the awareness, knowledge, assessment and perception of celebrities by the target group itself. For the social advertising of non-profit organizations the target audience is quite disperse and heterogeneous, because the message is mostly concentrated on just to getting attention, or on changing attitudes or increasing activity in relation to a significant but negative social phenomenon. In the long-term perspective, the most important recipient of pro-socially oriented campaigns as well as the target group of a marginal part of non-profit organizations, are young people. Most often these are adolescent aged individuals, which is, according to Macek an important determinant of the social and emotional experience and intelligence meeting the needs of the individual and his environment, culture and allowing him or her to form his or her own goals and determine his or her future

life direction (Macek, 2003, p. 10). The study thus focuses on how by adolescent perceive famous celebrities in social advertising, particularly with regards to the cohort of people aged 17 - 23. However, the formation as well as the analysis of the social orientation of adolescents in this period itself is highly sought after and necessary, since experiences from this stage of life significantly influence their later attitudes towards ethical, social, economic, legal and environmental problems that affect the whole of society.

The subjects of our analysis were social ads of non-profit organizations (e. g. The League Against Cancer, Good Angel, A Drop of Hope and others), which aim to improve the life conditions of Slovak society. Within all the analyzed ads (total number) 51 various Slovak celebrities were represented during 2016. Based on the initial phase of our research we selected the 6 most popular Slovak celebrities for our analysis, who represent not only the present but also historically significant figures, who, nowadays, in the age of celebrity, would also be holders of this "prestigious" status. The group of current celebrities includes prominent Slovak actors such as Lukáš Latinák and Michaela Čobejová and entertainer and presenter Adela Banášová and Katarina Brychtová. Prominent Slovak artists, linguists and politicians - Janko Alexy and Ľudovít Štúr were, based on the results of the primary studies, were the historically significant figures most frequently used in the current Slovak marketing space.

## 6. METHODOLOGY

This study presents the results of an extensive project oriented on individual aspects and specifics of celebrity support in social advertising by non-profit sector organizations. The main objective of this partial study was to identify the representation of the individual ego states (Parent, Adult, Child) of transactional analysis regarding the perception of the concept of SELF and celebrity in the research group of adolescents. We have focused on analyzing and interpreting the results of semantic differential, which, based on valence showed notable ambivalence in the pairs of adjectives on the perception of the concept of SELF and a celebrity. Transactional Analysis (hereinafter referred to as TA) is in terms of its historical genesis a rather young originally psycho-therapeutic approach that originated in the mid 1950's. TA analysis is based on the premise that the human personality is structured into three mutually detached Ego states - Parent, Adult and Child. Each individual is thus able to act in three separate, internally coherent structures, which have different motivational circles, the way of reflection as well as behavioral patterns, but tend to work together as one. The Ego state of Parent (Ro) - constitutes a major set of rooted ways of behavior, norms, values, rules exhortations, principles how to live, values of what is good and what is bad, what is acceptable and what is not ( Zacharovský, Žilinčík, 1992). When describing the ego state of Parent the emphasis is put on the possibility of caring, fulfilling the obligation of socialization, in other words guidance, accompaniment and inculcation through expectations and behavior control. Several authors describe Ego state as follows: Ego state Adult (Do) - is a logical and rationally contemplating part of the personality of an individual. This mental ego state is unemotional, rational, is interested in what is sensible and useful. It dissociates itself from the traditional and conventional views. Ego state Child (Di) – is the emotional part of the personality of an individual. In unified way a child's behavior is impulsive, linked to direct incentives, it is irrational. It is a source of spontaneity, humor, fun and creativity.

The research study was conceived and carried out at different times using two separate studies: the first part of the research is composed of semantic differential reflecting the perception of concepts SELF and CELEBRITY by adolescents, and these data were, within the second phase, subjected to the application of transactional analysis reflecting the perception of selected

celebrities with regards to individual ego states, and providing answers to the given research questions.

The research sample consisted of 150 respondents, including 57 men and 83 women, with an average age of 19.67 years (Tab 1). The disproportionality of the research group in terms of gender reflects the current state of society in Slovakia, dominantly represented by women within the population (Statistical Office, 2017).

*Table 1: Constitution of research group (processed by authors)*

| <b>Age cohort (17-23)</b> |                |       |
|---------------------------|----------------|-------|
| <b>N</b>                  | Valid          | 150   |
|                           | Missing        | 0     |
|                           | Mean           | 19,67 |
|                           | Std. Deviation | 1,536 |
|                           | Variance       | 2,358 |

Our study reflects partial results of a wide research focused on perception of celebrity endorsement in social advertising by adolescents. In our research we have analysed and compared perception of two basic concepts - SELF and Celebrity. We have used a 7-point scale, integrating the approaches applied by the authors Van der Veen and Song (2010) as well as Choi and Rifon (2007) was used as the research instrument.

In 2007, Van der Veen and Song carried out a study measuring the perceived image and effectiveness of an ad using the support of celebrities. In this study three dimensions were evaluated: attractiveness, credibility and expertise. On the other hand, Choi and Rifon (2007) focused on understanding the individual dimensions of the image of a celebrity, and the scale constructed by them consisted of four categories - genuineness, competence, excitement and sociability. Based on the above studies, as well as on the theories of other credible (Ohanian, 1990, p. 39) and attractive sources (Swerdlow and others, 2003; McCracken 1989, p. 311-312; McGuire, 1985, p. 233), we constructed a set of 35 adjectives representing a total of 8 dimensions of celebrity: 1) authenticity (socially responsible - socially irresponsible; smart - dumb, pleasant - mean, comfortable - uncomfortable, sophisticated - simple, rational - emotional, modest - vain; careful - careless, family-like - solitary, tactful - cheeky), 2) competence (strong - weak; confident - insecure, excited - unconcerned; resolute - hesitant, athletic - unsportsmanlike), 3) excitement (rough - smooth, tense - quiet, dominant - submissive, male - female), 4) sociability (public - private, daring - shy), 5) attractiveness (attractive - repulsive, exclusive - normal, nice - ugly; elegant - tasteless, sexy - not sexy), 6) credibility (reliable - dubious, honest - spineless, sincere - false, credible - misleading), 7) expertise (experienced - inexperienced; sober - impractical; qualified - amateur; skilled - awkward).

Transactional analysis includes a higher understanding of personality structure while it helps to understand the current status of an individual, motivational factors, knowledge, prediction of behavior, attitudes as well as their perception. This perception comes from the activation and therefore the dominance of one of the Ego states (Parent, Adult, Child), to which Polakevičová (2015, p.99) draws attention in her studies. Each individual has a repertoire of parallel Ego states available, which are not roles, but psychological facts reflected in their perception.

| Descriptive Statistics | N   | Mean  | Std. Deviation | Variance | Descriptive Statistics | N   | Mean  | Std. Deviation | Variance |
|------------------------|-----|-------|----------------|----------|------------------------|-----|-------|----------------|----------|
| SD CEL (1)             | 150 | 5,627 | 1,4726         | 2,168    | SD JA (1)              | 150 | 5,387 | ,9884          | ,977     |
| SD CEL (2)             | 150 | 5,807 | 1,5444         | 2,385    | SD JA (2)              | 150 | 4,600 | 1,5544         | 2,416    |
| SD CEL (3)             | 150 | 5,740 | 1,3924         | 1,939    | SD JA (3)              | 150 | 5,440 | 1,0712         | 1,147    |
| SD CEL (4)             | 150 | 5,660 | 1,5054         | 2,266    | SD JA (4)              | 150 | 5,387 | 1,1100         | 1,232    |
| SD CEL (5)             | 150 | 4,947 | 1,8529         | 3,433    | SD JA (5)              | 150 | 4,613 | 1,2520         | 1,568    |
| SD CEL (6)             | 150 | 3,707 | 1,5130         | 2,289    | SD JA (6)              | 150 | 5,967 | 1,1895         | 1,415    |
| SD CEL (7)             | 150 | 3,860 | 1,4000         | 1,960    | SD JA (7)              | 150 | 6,200 | ,9554          | ,913     |
| SD CEL (8)             | 150 | 3,660 | 1,3453         | 1,810    | SD JA (8)              | 150 | 6,387 | ,7578          | ,574     |
| SD CEL (9)             | 150 | 3,527 | 1,4410         | 2,076    | SD JA (9)              | 150 | 6,340 | ,8096          | ,655     |
| SD CEL (10)            | 150 | 4,993 | 1,9404         | 3,765    | SD JA (10)             | 150 | 4,433 | 1,3382         | 1,791    |
| SD CEL (11)            | 150 | 4,833 | 1,4162         | 2,006    | SD JA (11)             | 150 | 5,327 | 1,3635         | 1,859    |
| SD CEL (12)            | 150 | 4,687 | 1,5463         | 2,391    | SD JA (12)             | 150 | 5,480 | 1,1394         | 1,298    |
| SD CEL (13)            | 150 | 4,367 | 1,5124         | 2,287    | SD JA (13)             | 150 | 5,740 | ,8856          | ,784     |
| SD CEL (14)            | 150 | 4,793 | 1,5557         | 2,420    | SD JA (14)             | 150 | 5,620 | 1,2077         | 1,459    |
| SD CEL (15)            | 150 | 4,613 | 1,7176         | 2,950    | SD JA (15)             | 150 | 4,553 | 1,3686         | 1,873    |
| SD CEL (16)            | 150 | 4,733 | 1,5573         | 2,425    | SD JA (16)             | 150 | 4,580 | 1,6065         | 2,581    |
| SD CEL (17)            | 150 | 4,947 | 1,5961         | 2,547    | SD JA (17)             | 150 | 4,993 | 1,7282         | 2,987    |
| SD CEL (18)            | 150 | 3,793 | 1,5856         | 2,514    | SD JA (18)             | 150 | 4,240 | 2,0682         | 4,278    |
| SD CEL (19)            | 150 | 2,527 | 1,5531         | 2,412    | SD JA (19)             | 150 | 5,073 | 1,5066         | 2,270    |
| SD CEL (20)            | 150 | 3,827 | 1,5533         | 2,413    | SD JA (20)             | 150 | 4,873 | 1,8219         | 3,319    |
| SD CEL (21)            | 150 | 5,140 | 1,5371         | 2,363    | SD JA (21)             | 150 | 4,400 | 1,2532         | 1,570    |
| SD CEL (22)            | 150 | 4,353 | 1,4752         | 2,176    | SD JA (22)             | 150 | 5,487 | 1,7407         | 3,030    |
| SD CEL (23)            | 150 | 4,040 | 1,5880         | 2,522    | SD JA (23)             | 150 | 5,547 | 1,2128         | 1,471    |
| SD CEL (24)            | 150 | 4,433 | 1,4303         | 2,046    | SD JA (24)             | 150 | 5,653 | 1,1757         | 1,382    |
| SD CEL (25)            | 150 | 4,913 | 1,4969         | 2,241    | SD JA (25)             | 150 | 4,747 | 1,6596         | 2,754    |
| SD CEL (26)            | 150 | 6,093 | 1,3074         | 1,709    | SD JA (26)             | 150 | 4,840 | 1,6752         | 2,806    |
| SD CEL (27)            | 150 | 5,233 | 1,6029         | 2,569    | SD JA (27)             | 150 | 5,227 | 1,5377         | 2,364    |
| SD CEL (28)            | 150 | 5,440 | 1,3732         | 1,886    | SD JA (28)             | 150 | 4,193 | 1,9514         | 3,808    |
| SD CEL (29)            | 150 | 4,813 | 1,1492         | 1,321    | SD JA (29)             | 150 | 4,467 | 1,8848         | 3,553    |
| SD CEL (30)            | 150 | 3,920 | 1,2613         | 1,591    | SD JA (30)             | 150 | 4,320 | 1,7506         | 3,065    |
| SD CEL (31)            | 150 | 3,933 | 1,6330         | 2,667    | SD JA (31)             | 150 | 4,147 | 1,7737         | 3,146    |
| SD CEL (32)            | 150 | 5,507 | 1,2302         | 1,513    | SD JA (32)             | 150 | 4,760 | 1,3742         | 1,888    |
| SD CEL (33)            | 150 | 3,780 | 1,1403         | 1,300    | SD JA (33)             | 150 | 3,580 | 2,5071         | 6,286    |
| SD CEL (34)            | 150 | 6,100 | 1,4272         | 2,037    | SD JA (34)             | 150 | 3,620 | 1,7558         | 3,083    |
| SD CEL (35)            | 150 | 5,180 | 1,9935         | 3,974    | SD JA (35)             | 150 | 4,313 | 1,7072         | 2,915    |
| Valid N (listwise)     | 150 |       |                |          | Valid N (listwise)     | 150 |       |                |          |

DESCRIPTIVES VARIABLES=SDCEL1 SDCEL2 SDCEL3 SDCEL4 SDCEL5 SDCEL6  
SDCEL7 SDCEL8 SDCEL9 SDCEL10 SDCEL11 SDCEL12 SDCEL13 SDCEL14 SDCEL15  
SDCEL16 SDCEL17 SDCEL18 SDCEL19 SDCEL20 SDCEL21 SDCEL22 SDCEL23 SDCEL24  
SDCEL25 SDCEL26 SDCEL27 SDCEL28 SDCEL29 SDCEL30 SDCEL31 SDCEL32 SDCEL33  
SDCEL34 SDCEL35  
/STATISTICS=MEAN STDDEV VARIANCE.

Table 2: Average profiles of the perception of the concept of SELF and CELEBRITY  
(processed by authors)

In the first step of our analysis, we concentrated on the comparison of two important concepts - Self and celebrity. The profile of both assessed terms was formed through the evaluation of a set of 35 bipolar adjectives (tab. 2). The results suggest that the common attributes in the perception of the concept of self and celebrity were the following adjectives: comfortable, organized and enthusiastic. There was less direct congruence with the following adjectives: attractive, pretty, elegant, sexy, inexperienced, sophisticated, rational, thin, athletic, gentle, quiet, and dominant and feminine. Incongruencies were also reported in the following adjectives (chart 1): exclusive, reliable, frank, sincere, credible, reliable, honest, sincere, trustworthy, skilled, socially responsible, wise, pleasant, modest, diligence, competent, familiar, discrete, sober, self-confident, determined, public and shy. But here it should be noted that incongruencies also lie in the intensity in which adjective was used to describe the term in question. Consequently it is important to employ valence to directly suggest that the profile of celebrity and self are almost ambivalent within the characteristics of the reliable (SELF) – unreliable (celebrity), honorable (SELF) - unprincipled (celebrity), honest (SELF) - false (celebrity), trustworthy (SELF) - misleading (celebrity), humble (SELF) - vain (celebrity), caring (SELF) -careless (celebrity), public (SELF) - public (celebrity). The most significant differences were thus achieved in the dimension of authenticity, sociability (Choi - Rifon, 2007) as well as in the dimension of credibility of the individual (Van der Veen, Song, 2010). Within the dimensions of competence, and excitement (Choi - Rifon, 2007) as well as the dimensions of attractiveness and expertise (Van der Veen, Song, 2010) incongruencies were achieved more in the intensity than the polarity of these meanings, in other words these profiles with regards to these adjectives were actually quite congruent. RQ (research question): Will there be a differentiation between the dominance of the activated Ego state in the perception of self and celebrity by adolescents.

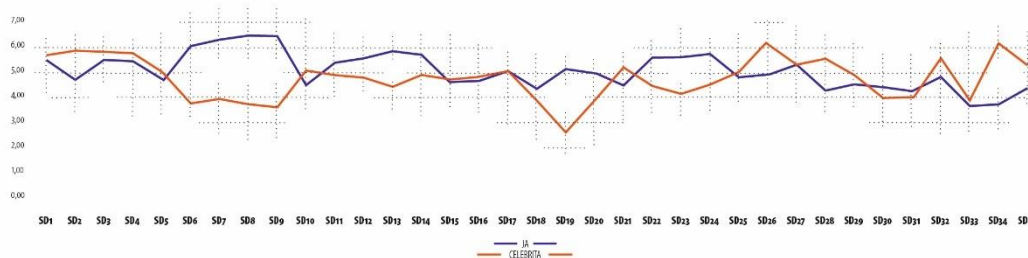


Chart 1: SELF and CELEBRITY concepts profile comparison (processed by authors)

In the second step of the analysis, we assigned each pair of adjectives exhibiting a significant degree of ambivalence in the perception of the concept of self and celebrity to each mental state of Ego mental according to their characteristic manifestations as defined by Harris (1997, p. 37), L. Nagyová (1999, p. 159) and L. Dobšovič (2000, p. 79) with regards to a qualitative type of structural analysis TA.

| SELF            | Ego state | CELEBRITY         | Ego state |
|-----------------|-----------|-------------------|-----------|
| <b>reliable</b> | Adult     | <b>dubious</b>    | Child     |
| <b>honour</b>   | Parent    | <b>spineless</b>  | Child     |
| <b>honest</b>   | Parent    | <b>false</b>      | Child     |
| <b>trusted</b>  | Adult     | <b>misleading</b> | Child     |
| <b>modest</b>   | Parent    | <b>vain</b>       | Child     |
| <b>caring</b>   | Parent    | <b>careless</b>   | Child     |
| <b>private</b>  | Parent    | <b>public</b>     | Child     |

Table 3: Perception of SELF and CELEBRITY concepts by adolescents (processed by authors)

The results indicate (tab 3) that adolescents perceived Self to a more dominant extent through the Ego state of Parent and to a lesser degree through the Ego state of Adult. The Ego state of Child was absent. The positive connotations of the self explain that adolescence is a sensitive period for the construction of an individual's personal identity. At this stage of development, the individual is preparing for the role of an adult. The quality of living, experiencing, train of thought and actual perception are changing. The absence of the Ego state of the Child shows a strong rejection to see oneself (self) as an immature individual. Adolescents perceived the concept of celebrity negatively from the perception of the Ego state of Child. A low level of understood authenticity stems from the actual effects of mass media on the identity of a celebrity, which is formed by the consumer culture itself (Escalas, Bettman, 2015, p. 35). Two other attributes are connected with this fact – trustworthiness and social significance itself, in other words the aspect of celebrity.

## 7. CONCLUSION

Based on the achieved results and their application on the perception of social advertisements by adolescents, we can state that celebrities do not constitute the chosen target group that is perceived as sufficiently trustworthy nor as authentic sources of information, which may adversely affect the desired and actual effect of the message being communicated. This is confirmed by the analysis of partial results which show that the perception was dominant in the mental Ego state of the Child. Since this concerns a social campaign by non-profit organizations, the very dimension of the credibility of celebrities played perhaps the most important position. In the case where the image of the celebrity was of a significant public nature, having an impact on a lower degree of authenticity, it resulted in a reduction of

trustworthiness in the individual figure. The non-profit organization sector and the message of social marketing is presenting a very intimate and personal topic, which must be presented by an adequately chosen speaker/advocate, who is not only well-known, but also has the respect and trust of target group.

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## ASPECTS OF THE STRATEGIC MANAGEMENT IMPLEMENTATION AND ASSESSMENT STAGE REALIZATION IN LATVIAN TRADE UNIONS

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### **ABSTRACT**

*At the start of this century NGOs became organisations that were engaged in social, political, environmental and economical processes at a national and international level. The special role of trade unions as NGOs involves the aspect of social partnership – unlimited partnership agreements and a social dialogue are an inherent part of the European social model. In order for Latvian trade unions to not only survive in today's changing environment, but also to develop and strengthen their impact on processes in public administration, emphasis should be put on developing strategic management in these organisations.*

*The topicality and scientific importance of the study is based on several factors: decreasing number of members in Latvian and European trade unions; little research on European and Latvian trade union work, especially with regards to the strategic management. Methods applied in the research: theoretical research methods: content analysis of management science literature. Empirical research methods: analysis of documents and expert interviews with chairmen of Latvian trade unions. Aim of the study is to justify the realisation options of the implementation and evaluation phase of strategic management. Tasks of the study: analyse the scientific literature on trade union strategic management; develop the process of Latvian trade union strategic management implementation and evaluation phase. The main results of the study show that the implementation and evaluation stage is an important part of the strategic management process. The author has formulated the main areas for trade union goal setting and has developed a methodology for assessing the strategic management implementation considering specific criteria and indicators.*

**Keywords:** *strategy evaluation, strategy implementation, strategic management, trade unions*

### **1. INTRODUCTION**

In the past decade trade unions have become a significant social partner in the EU countries, among which in Latvia, taking part in meaningful decision-making processes within the National Tripartite Cooperation Council. Given the importance of the role trade unions play, research has been conducted to explore the most efficient approach to trade union management. This is needed because the society takes interest in the fact that decisions made by the National Tripartite Cooperation Council are justified and weighed out, in order to promote economic development and social wellbeing. Since the start of the past century, organisations around the world have been impacted by continuous changes and their consequences. Trade unions are no exception to this. Changes brought in by globalisation, concerning the political, economical and technological environments, adversely affect the number of trade union members in several countries (Visser et al., 2007, pp. 97-100; Fitzenberger et al., 2011, pp. 145). Global competition around the world brings about change in the nature of work, results in relocation of companies, and causes other types of restructuring. This, in turn, facilitates unemployment and creates a situation, where one part of the employees is only in part-time employment (Baglioni, 2006, pp. 4; Rigby et al., 2006, pp. 135). National legislative environments equally have significant impact upon activities and management of trade unions. The author believes that the legislative and economic changes and the vast technological development requires changing the tasks of trade unions, searching for new types of activity and planning for pressing

activities. Therefore for trade unions to fulfil their functions as a social partner in today's economic situation, the capacity of trade unions must be equal to the capacity of other social partners. The capacity of trade unions can be increased by developing a long-term vision on the organisation's development, which requires application of strategic management principles in management of these organisations. Trade union management makes use of notions revealed in the 1970s, whereas questions of strategic management in the context of trade unions have not been studied and developed – only aspects of strategic planning have been explored (Weil, 2002, pp. 10; Hannigan, 1998, pp. 203-210; Holley et al., 2011, pp. 126). The questions of applying strategic planning, the differences and commonalities in entrepreneurial and trade union membership, remain open. To this date trade union management theories do not make use of a systemic approach, which encompasses strategic management (strategic planning and implementations of plans); the leadership role in trade unions has not been sufficiently assessed, particularly with regards to the strategy implementation and evaluation stages.

## 2. LITERATURE REVIEW

Strategic management may be defined as a process, during which strategies are identified, evaluated and implemented in order to carry out the aims of an organisation. Strategic management is of importance to all organisations, as it ensures a structured analysis of internal and external environments and a logical approach to strategic decision-making (Jeff, 2008, pp. 13). Research on questions related to trade union strategy is by far not as longitudinal or comprehensive as that of organisations in other fields. Some issues concerning trade union aims and tactics for achieving these aims were studied in the US at the start and in the middle of the 20th century by Webb & Webb, Common, and Hardman (Gahan, 1998, pp.14). However no broad-ranging studies on management aspects of these trade unions have been conducted. In 2002 David Weil analysed strategic planning in trade unions, characterising its three stages: strategy formulation, implementation and evaluation (Weil, 2002, pp.10). Although the theoretical aspects of implementing a strategy are just as crucial as aspects of strategy development, several scientists, e.g., Otley, Okumus and Roper have emphasised that strategy implementation has been studied to a much lesser extent (Atkinson, 2006, pp.1441). It is noted (Hill, Jones, 2012, pp. 15-30) that the strategy implementation stage must ensure: development of the necessary organisational structures; development of strategy preserving policies and procedures and their implementation; strategically appropriate distribution of an organisation's financial, human and material resources; development of communication, operational and electronic systems in order to help staff implement the particular strategy; provision of an external motivation system that is tied to the implemented strategy; introduction of an organisational culture that would facilitate implementation of strategy; maintaining leadership, which would promote implementation of strategy. The elements reflected in Daft's study on strategy implementation (Daft, 2008, pp. 260) show the significance of a structural, human resource, information and control systems, as well as the importance of leadership aspects in strategy implementation. Researchers (Hambrick; Smelzer & Olsen; Miller) on strategy implementation have paid considerable attention to organisational structure, organisational culture, and allocation of resources, staff wages, training and selection, leadership and follower styles, as well as communication. This way implementation of strategy is dependent on strategic management effectiveness (Okumus, 2001, pp. 328). The notion "strategic management" is barely used in trade union management literature. Instead the notion "strategic planning" is applied, predominantly analysing the theoretical aspects of strategic planning, and paying less attention to strategy implementation and evaluation than in business management. In his analysis of the trade union strategy implementation stage, Weil (Weil, 2002, pp. 154-184) emphasizes analysis of the internal environment, which includes a careful studying of the financial situation. Weil emphasises the important role that changes in income play in the future

financial situation of organisations. By conducting this analysis, trade unions can create a stable physical base and a “cash cushion”, to prepare themselves for potential short-term or long-term decreases in income. Weil emphasises (Weil, 2002, pp.158) that financial savings allow trade unions to preserve the chosen strategy during periods of short-term crisis, yet the researcher also suggests analysing the organisational structure, human resources systems and the organisational culture. Whereas questions around leadership and communication have not been explored. Weil accentuates (Weil, 2002, pp. 184) that each of these elements influences trade union activity: some of these can be matched with the new strategy, while others delay its implementation. Implementation of a new strategy is often dependent on a chairman’s ability to change organisational culture and the ‘old world order’. These conclusions show a necessity for change and the significant role that effective management plays in this. The process of assessing a strategy at trade unions has been studied to a very little extent. Weil notes that this stage looks for an answer to the questions: “How well is the chosen policy or programme working?”, “Does it require improvements?” and “How should it be improved?” (Weil, 2002, pp. 234). Whereas Hannigan slightly touches upon control on strategy implementation, acknowledging that this is being done at trade unions by applying various rules and by setting budget limitations (Hannigan, 1998, pp. 227). Comparison of approaches to implement and evaluate a strategy at trade unions is summarised in Table 1.

*Table 1: Comparison of strategy implementation and evaluation approaches in trade unions (author’s summary based on Holley et al., 2011, p. 126; Weil, 2002, p.10, 24; Hannigan, 1998, p. 48)*

| Strategy implementation aspects | Author                   |                 |              |
|---------------------------------|--------------------------|-----------------|--------------|
|                                 | Holley, Jennings, Wolter | Weil            | Hannigan     |
| Resource allocation             | Not analysed             | <b>Analysed</b> | Not analysed |
| Organisational structure        | Not analysed             | <b>Analysed</b> | Not analysed |
| Organisational culture          | Not analysed             | <b>Analysed</b> | Not analysed |
| Leadership                      | Not analysed             | Not analysed    | Not analysed |
| Follower types                  | Not analysed             | Not analysed    | Not analysed |
| Communication                   | Not analysed             | Not analysed    | Not analysed |
| Strategy evaluation             | Not analysed             | <b>Analysed</b> | Not analysed |

Comparison of information included in Table 1, leads the author to find that trade union researchers have studied and analysed strategy implementation to a very little extent. Weil (Weil, 2002, pp.184-194) has explored distribution of resources, organisational structure and assessment of strategy, and has lightly touched upon questions of organisational culture. However the author establishes that to this date studies on trade union strategy implementation have not paid sufficient attention to questions of leadership and have not analysed aspects of communication. Compared with leadership in business, leadership in trade unions has been studied to a very little extent, for there are no general studies on trade union leader personalities, functions and roles or leadership styles. One of the first studies on leadership at trade unions was conducted in early 1940s, when US scientists Mills and Atkinson developed a portrait of a trade union leader of the highest level. Trade unions are complex organisations: contemporary researchers Clarke and Grey have acknowledged that experience and personality traits of trade union chairmen should match those of managers in charge of large business organisations

(Dempsey, Brewster, 2009, pp. 348). In turn Shamir believes that leadership at trade unions must firstly be analysed in the context of the relationship that leaders have with their followers: follower activities, attitude and expectations impact the behaviour of leaders (Cain, 2012, pp. 182). Trade union leadership is influenced by the fact that chairmen obtain their position as a result of members voting. Maintaining their position and potential growth is fully dependent on the members' opinion of them. This particularity ensures dependence on members and increases the significance of internal communication. The essence of trade union leaders also emphasises moral aspects – if trade union chairmen are unable to formulate basic organisational values or act in line with these values as well as the socio-economical principles of justice, they will not achieve long-term co-participation of members, which is of particular importance to strategy implementation.

### 3. EMPIRICAL RESULTS

#### 3.1. Analysis of the Latvian trade unions statutes

The author analysed strategic guidelines of trade unions in Latvia, based on Free Trade Union Confederation of Latvia (LBAS) as the largest and the most active federation of Latvian trade unions. LBAS member organisations are industry and professional trade unions, as well as small trade union associations. Although a decrease in membership rates is observed, LBAS remains the largest and the most active association of trade unions in the country, which counted 95879 members on January 1, 2015 (*Unpublished materials: LBAS Membership Statistics*). LBAS unites twenty different industry and professional trade unions. Document analysis shows that the aims formulated in the LBAS member organisation statutes must be assessed as long-term aims of trade unions, for according to the author's observations, the aims usually are not changed. The majority of LBAS member organisations have formulated no more than three long-term aims in their statutes, which foresee defence of member rights and their unification for a joint action. Yet other, more general formulations of aims can be found as well: The aims formulated in the Latvian Forest Sphere Workers Trade Union statutes include: "standing up for: a free and democratic state; legal consolidation and increase in social security; further democratisation of the economy, the state and the society; peace and understanding between nations; environment protection". The following tasks are designed for achieving the objectives: engage in social dialogue at all levels; represent and defend member interests at various institutions; take part in international trade union organisations; educate members on developing laws, other normative acts and "social development programmes" (LMNA Statutes). In relation to wage issues, the statutes contain generally formulated objectives. For instance, Trade Union Energija plans to "take care of long-term improvement of wages, working conditions and social conditions" (Trade Union Energija Statutes); Health and Social Care Workers Trade Union represents member interests in relation to employment and appropriate remuneration (LVSADA Statutes), while the Railway Workers Trade Union aims to protect the right of workers to fair pay (LDzSA Statutes). Trade union statutes do not provide more details on the strategic activities of organisations, therefore a more specific formulation of aims and tasks would need to be present in specific strategic planning documents. The LBAS activity programme confirmed by the congress serves as its organisational strategy: closer examination of the document "Strategic Directions of LBAS 2012 – 2016" shows more concrete aims, and the activities captured in the document are divided into four subgroups: economics, economy and taxes; work rights, work protection, social protection, health and culture; social dialogue; organisational activity. The 7th LBAS Congress proposes the following aims in relation to salary and taxes: "To invite the Parliament and the government "to draw the average salary closer to the average in the EU, by working in conditions for increasing the salary in collective agreements and in general industry agreements"; to invite the Parliament and the government to support the development of a tax environment beneficial to

employees, by decreasing the total amount of employee taxes, pushing down the mandatory social contribution rates by at least 2% in the next 3 years" (LBAS 7<sup>th</sup> Congress Proceedings; 62). The listed aims may possibly not be realistically achievable due to the lack of precision in the way they are formulated and due to the neoliberal policy of the current administration.

### **3.2. Summary of the findings of expert interviews**

Different Latvian branch/professional trade union chairmen with trade union administration experience of 5 years or more and whose trade unions represent different economic sectors, were chosen as experts. The average age of the experts is 55,4 years, and the average leadership work experience is 12,7 years. Twelve Free Trade Union Confederation of Latvia member organization chairmen, which is 60% of the total amount of the member organization chairmen, were interviewed in May 2015. The interviews were firstly audio recorded, then they were transcribed – qualitative transformation of the results in a printed form; based on the transcript information, a qualitative content analysis was performed. Interviews established the prevailing opinion of trade union chairmen that trade unions in Latvia struggle to implement the indented activities. According to the respondents, achievement of aims is made difficult by the neoliberal policy of the government, the negative attitude of entrepreneurs towards trade unions and a lack of financial resources at trade unions. The way in which strategy is implemented (priority fields of organisational activity) may be difficult for the trade union chairmen to describe. This shows that they have no experience in purposeful strategy implementation, and trade unions in Latvia are focused on activities aimed at achieving concrete, measurable goals. At nearly all trade unions the evaluation of implemented priority fields takes place within congresses or precedes such congresses. Prior to each congress the aims are reviewed to establish which of these have been achieved. No specific criteria or procedures are produced for this purpose. The information obtained in interviews shows that trade unions function in line with long-term goals fixed in the statutes, whereas concrete, strategic aims are applied by only one of the surveyed trade unions. Respondents agree that leadership plays a role in achieving aims in trade unions. Interviews reveal a prevailing opinion that trade union chairmen must be communicative, charismatic, and have broad and legal education. Chairmen believe that trade union leaders must apply a friendly, democratic leadership style, at the same time preserving the possibility to be strict should it be necessary. Respondent responses on the aforementioned key areas of trade union aim proposition are dominated by an opinion that all basic fields of aim proposing listed by the author are equally important – improvement of social partnership; social wellbeing of members and a safe work environment; development of the represented field; dialogue with interested parties and the society on the whole; provision of support to members and trade union activity and development. Interview results generally reveal insufficient understanding of chairmen on the significance of strategy implementation and assessment in Latvian trade unions. Yet simultaneously it confirms the author's opinion on trade union readiness to change the existing strategic management practices.

## **4. IMPROVEMENT OPPORTUNITIES OF THE STRATEGIC MANAGEMENT IMPLEMENTATION AND ASSESSMENT STAGE**

### **4.1. Preferable Basic Fields of Setting Aims**

In order to facilitate formulation and implementation of trade union aims, the author has formulated five basic fields, in which trade unions should put forward their aims. These are: development of social partnership; social wellbeing and a safe work environment of members; dialogue with interested groups and the society in general; providing support to members; activity and development of a trade union.

The usefulness of these particular sub-fields was proven by the empirical study conducted by the author – expert interviews with trade union chairmen in Latvia. Each of the five basic fields includes several sub-fields, based on which concrete, measurable long-term and short-term aims can be set (See Table 2).

*Table 2: Basic Fields of Trade Union Aims (Produced by the author)*

| Basic field                                                | Sub-fields                                                                                   |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Development of social partnership                          | Social dialogue at an industry level                                                         |
|                                                            | Social dialogue at a company level                                                           |
| Social wellbeing and a safe work environment of members    | Salary of members employed in the field/profession                                           |
|                                                            | Social guarantees of members employed in the field/profession                                |
|                                                            | Safety of work environment of members employed in the field/profession                       |
|                                                            | Development of the field/profession                                                          |
| Dialogue with interested groups and the society in general | Communication through the mass media                                                         |
|                                                            | Online communication                                                                         |
|                                                            | Direct communication with stakeholders, including other trade unions and youth organisations |
| Providing support to members                               | Providing support to members at a company level                                              |
|                                                            | Providing support to members in the field/profession at a trade union level                  |
| Activity and development of a trade union                  | Growth of leaders                                                                            |
|                                                            | Provision of the strategic management process                                                |
|                                                            | Member learning, engagement and loyalty                                                      |
|                                                            | Improvement of internal communication                                                        |
|                                                            | Increase in the number of members                                                            |
|                                                            | Long-term financial sustainability                                                           |
|                                                            | Participation in international trade union organisations                                     |

#### 4.2. Methodology for assessing implementation of a trade union strategy

The strategy assessment stage involves an analysis of proposed and achieved aims and tasks: the strategy development team conducts activities with the help of which the pace at which a strategy is implemented is being assessed and measured. Methodology includes criteria, sub-criteria, indicators and a framework for its assessment. The criteria offered for the assessment of strategy correspond to the fields in which trade unions have set their aims: development of social partnership; social wellbeing of members and a safe work environment; dialogue with the interested groups and the society in general; providing support to members; activity and development of trade unions (see Table 3). The author believes that when assessing the implementation of strategy, use should be made of the analytical rather than the mathematical approach. The analytical approach foresees that the strategy development team analyses each indicator and discusses its corresponding level, by establishing aspects for its development. Level A indicates a low level of completion; Level B indicates average completion and Level C indicates high-level completion of the criterion (Table 3). Whereas the mathematical approach means that indicators can be assessed by using a points system, granting a number of points in line with levels A, B and C. For that reason the author believes that the mathematical approach may lead to a formal assessment of strategy implementation.

Table 3: Example of Industry/Professional Trade Union Strategy Assessment Criterion and Sub-Criteria (Produced by the author)

| <b>Criterion 1 – Improvement of Social Partnership</b>                                                                  |                                                                                                                                                                                               |                                                                                                                                                                                    |                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sub-Criterion 1 – Social Dialogue at an Industry Level</b>                                                           |                                                                                                                                                                                               |                                                                                                                                                                                    |                                                                                                                                                                                                            |
| <b>Indicators/<br/>levels</b>                                                                                           | <b>A</b>                                                                                                                                                                                      | <b>B</b>                                                                                                                                                                           | <b>C</b>                                                                                                                                                                                                   |
| Signing a general agreement, its quality                                                                                | Never or not regularly signed                                                                                                                                                                 | Not regularly signed, the guarantees cover no more than what is covered by the legislation                                                                                         | Regularly signed, guarantees cover more than what is covered by the legislation                                                                                                                            |
| Particular results in relation to discussions and consultations with the partners of the social dialogue                | Discussions and consultations with employer organisations and/or Ministry representatives in the industry do not take place or are irregular. No activity takes place in the NTCC Sub council | Discussions and consultations with employer organisations and/or Ministry representatives in the industry take place annually. There is irregular activity in the NTCC Sub council | Discussions and consultations with employer organisations and/or Ministry representatives in the industry take place more often than on an annual basis. There is regular activity in the NTCC Sub council |
| <b>Sub-Criterion 2 – Social Dialogue at a Company Level</b>                                                             |                                                                                                                                                                                               |                                                                                                                                                                                    |                                                                                                                                                                                                            |
| <b>Indicators/<br/>levels</b>                                                                                           | <b>A</b>                                                                                                                                                                                      | <b>B</b>                                                                                                                                                                           | <b>C</b>                                                                                                                                                                                                   |
| Number of signed collective agreements                                                                                  | 60% of companies have signed collective agreements                                                                                                                                            | 80% of companies have signed collective agreements                                                                                                                                 | 100% of companies have signed collective agreements                                                                                                                                                        |
| Quality of collective agreements                                                                                        | Collective agreement does not provide additional guarantees to those set by the Labor Law of Latvia                                                                                           | Collective agreement provides a few additional guarantees to those set by the Labor Law of Latvia                                                                                  | Collective agreement provide several additional guarantees to those set by the Labor Law of Latvia                                                                                                         |
| Indicators of collective agreements covering the industry (each indicator depends on the number of trade union members) | Collective agreements concern 30% of employees in the industry                                                                                                                                | Collective agreements concern 50% of employees in the industry                                                                                                                     | Collective agreements concern over 50% of employees in the industry                                                                                                                                        |

\* NTCC- National Tripartite Cooperation Council

Assessments are made by the strategy development team following an assessment process, and its results are recorded in writing. Assessment is commenced by giving an A, B or C level description to each criterion and each sub-criterion. The assessment process is formalised by making use of the result summary table (see Table 4).



*Table 4: Example of a Trade Union Strategy Implementation Assessment Summary  
(Produced by the author)*

| <b>Criteria, sub-criteria, indicators/levels</b> | <b>A</b> | <b>B</b> | <b>C</b> |
|--------------------------------------------------|----------|----------|----------|
| 1 cr., 1 subcr., 1 ind.                          | x        |          |          |
| 1 cr., 1 subcr., 2 ind.                          |          | x        |          |
| 1 cr., 2 subcr., 1 ind.                          | x        |          |          |
| 1 cr., 2 subcr., 2 ind.                          | x        |          |          |
| 1 cr., 2 subcr., 3 ind.                          | x        |          | x        |
| Total number of levels                           | 4        | 1        | 1        |

\*cr.- criterion; subcr.- sub-criterion; ind.- indicator

The example depicted in Table 4 summarises the assessment results of Criterion 1 – improvement of social partnership. In this particular example level A is more typical to the trade union, which points out the necessity for a significant social partnership improvement. This way trade unions analyse all criteria and obtain a general analytical result: the total number of levels for each criterion determines the dominant level or a combination of levels. The dominant level A indicates a necessity to make significant improvements in the particular field. The dominant level B indicates a necessity to make several improvements in the particular field. The dominant level C indicates a necessity to conduct activities that would help maintain the existing situation and allow flexibility in reacting to changes in the external and internal environments.

All assessments of criteria are recorded in writing and introduced to the trade union board and council.

An analogue methodology for assessing strategy implementation is applied when assessing the implementation of the national trade union association strategy.

This way, by applying the methodology developed by the author, based on all five basic fields in which aims are proposed, activities will be ensured to increase and to strengthen the development of trade unions in Latvia and their impact upon decisions made by public administration.

#### **4. CONCLUSION**

Literature analysis reveals that implementation and evaluation of strategy both are significant components of strategic management. These include development of a policy to maintain the strategy, distribution of financial and material resources, as well as maintenance of leadership, which would ensure actual implementation of the strategy. Research on distribution of resources at trade unions and organisational structures as part of strategy implementation is very fragmented; strategic evaluation has been studied to a very little extent.

Empirical research results affirm the strategic management flaws present in Latvian trade unions: the difficulty trade union chairmen experience in describing the strategy implementation process; a lack of criteria for strategy evaluation and assessment, a lack of purposeful activity that would lead to increased and strengthened effectiveness of Latvian trade unions.

The author believes that the offered improvements in the strategic management process – activities conducted in line with the five basic fields for proposing aims and a methodology for strategic evaluation (criteria, sub-criteria, indicators and a framework for their evaluation) serves as a contribution to trade union management theory and practice.

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## MEASURING THE CELEBRITY: CONTEMPORARY METRICS OF FAME

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### **ABSTRACT**

*A concept of celebrity plays important role in many disciplines, including cultural, media and marketing studies. From the perspective of theory but especially media practice, it is necessary to analyze this concept as something measurable, as there is lots of evidence of different kinds and levels of fame. Today, there are several tools of measuring the qualities of celebrities created and used in order to make their characteristics more concrete and better traded. In following paper we present and analyze various metrics used for mentioned purpose: Ulmer's Scale, Q-score, E-score, Davie-Brown Index and others. Our primary aim is to provide the most current information on this field, particularly in connection to the bankability of celebrities as media and marketing products.*

**Keywords:** *Celebrity, Fame, Metrics of Fame*

### **1. INTRODUCTION**

Celebrities have been an integral and inseparable part of the media culture from its very beginning as they are nowadays. We encounter them through a wide spectrum of the media channels and the media genres. One of the significant expositions of the celebrity culture is also a field of marketing communication, mainly the advertisement (see e.g. McCracken, 1989). This field cannot be seen as autonomous, vice versa – it is tightly connected with the overall representation of celebrities in the culture. Through advertisement performances of celebrities there can be seen the transfer of commercial messages, however, moreover, further values connected with celebrities such as the cultural values, social influences, the construction of a social reality, etc.

The most famous definition of a celebrity endorser is a definition by McCracken (1989, p. 310): celebrity endorser is a person who „enjoys a public fame and such a fame is used in a way that he/she appears in advertisements for a promoted product.“ Kamins (1989, in Swerdlow and Swerdlow, 2003) points out that it is „... a person that is publicly known due to his success in another field than of that of the promoted products.“ Celebrity endorsement should fulfil three communication aims (Erdogan, 1999 et al.): gain and retain attention; provide a transfer of willing qualities of celebrities to a brand; and reach a high level of remembering. In these circumstances, the important question becomes appropriate selection of celebrity, which is not based solely on intuition of marketers, but uses the exact data.

Identification or celebrity selection is related to the evaluation of suitable connection between particular celebrity and the brand/product endorsed. Since the problem of selection is among the key problems in celebrity endorsement, it is reflected widely in literature. In many sources we can find a number of recommendations for celebrity selection, however, most of them are only on theoretical level. Clear instructions for celebrity endorsers selection are missing. In this field, theory seems not to be in connection with practical tools available. The most important goal of this paper is to fill this gap.

Practical tools for celebrity selection will be referred as metrics in this paper. These metrics help advertising agencies and brand agents to make decisions about the right celebrity selection.

In first stage of our research we identify available metrics aimed on fame of personalities. As the most cited ones are as follows: Ulmer Scale, Nielsen N-Score, Q-Score, E-Score, The Davie-Brown Index, IME Star Index, Klout Score and possibly others. In this study we focused on metrics aimed specifically for the purposes of celebrity endorsement in marketing communications, connected by the same form of data collection based on the panels. This category consists of the Q-score, E-score and Davie-Brown Index. Next, we analyze mentioned metrics to reflect characteristics such as the number of celebrities included, or the periodicity of research, the most frequent criteria of fame evaluation, the way of its calculation and others.

## 2. Q-SCORE

The Q-Score is one of the earliest metrics aimed on market evaluation of celebrities (Williams, 2014). In general, Q-Score represents a beginning of the utilization trend in marketing research. This metric is used for wide range of marketing, media, advertising or public relation subjects, providing the measurement of the awareness and attractiveness of TV programmes, brands, corporations and celebrities. From the point of view of the celebrity endorsement, Q-Scores provides a high quality data helping agents to find the most appropriate personality for the role of influencer, ambassador or advocate of the brand (QScore-Insights, 2016).

The Celebrity Q-score system was developed to track the popularity of celebrities with the general public (Gunter, 2014, p. 20). This system uses a panel of American households surveyed by an email. According to Gunter, respondents answer the questionnaire „... that invites them to provide personal indications of the familiarity with a celebrity and their feelings about that individual.“ (Gunter, 2014, p. 20). The Celebrity Q-score contains public figures including athletes, entertainers, artists or other media personalities. The national representative panel consists of 1800 individuals (Shimp, 2013, p. 297). As the database dates back to 1964, the company has compiled the data of over 55 000 personalities from 5 unique categories. These categories are as follows: Performer Q (25 000), Cartoon Q (15 000), Sports Q (15 000), Hispanic Performer Q (2000) and also Dead Q (1000) and they are focused on a particular and specific category of celebrities (QScore-Insights, 2016)<sup>1</sup>.

According to Simon et al. (2014, p. 41) the Q-score most commonly uses two rankings, (1) the Familiarity Percentage and (2) the celebrity's score which is also referred as the Positive Q-score. The Familiarity Percentage indicates to the amount of people who have heard about the celebrity and the Positive Q-Score or “one of my favorite” score refers to an absolute measure of the appeal to the celebrity (Fang, Jiang, 2015, p. 159). According to mentioned concepts the Q-score measures awareness of popular people and identifies the appeal to evaluated celebrities. The final Q-score is calculated by the percentage of respondents indicated that celebrity is “one of my favorite” divided by the percentage of respondents who have heard about particular personality (Fang, Jiang, 2015, p. 159). The Q-score is derived from data collection model of the Favorites Concept which helps to identify the most enthusiastic consumers of a personality (QScore-Custom Research, 2016), because if customer regard the celebrity as a favorite, there is much higher awareness of the celebrity and it is considered to be an indicator of a successful celebrity endorsement Simon et al. (2014, p. 41). It serves as influential predictor of effective consumer involvement (QScore-Custom Research, 2016). As Q-score's provider states, its mission is to maintain the most comprehensive coverage of accessible media and entertainment platforms with focus on the personalities of growing online media platforms such as various types of social media (video streaming sites, social networking sites, communities) (QScore-Insights, 2016).

The survey is executed by online questionnaire. Participants are asked two questions about each public figure. First question „Have you heard of this person?“ is constructed to measure the

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<sup>1</sup> Besides celebrity data, Q-score includes over 7000 brands and 25 000 television programs.

familiarity of the person (Shimp, 2013, p. 297). The factor of familiarity depends mostly upon the length of the public knowledge and interest in a particular person. Gunter also notes that it is directly connected with the exposure of the public figure or received media publicity (Gunter, 2014, p. 21).

The second question reflects the popularity of the person: „If so, do you rate him or her poor, fair, good, very good, or one of your favourite?“ (Shimp, 2013, p. 297). A factor of likeability measures the positive or negative feelings about particular personality. Although this factor is constructed quite differently from the familiarity factor, it is possible to assume some intercorrelations between them. However as Gunter notes, the obtained liking score is not necessarily connected with the exposure of the celebrity (Gunter, 2014, p. 21). Some celebrities can be exposed by media really often, however they appeal does not have to be considered positive. The quotient (that’s why Q-score) reveals the proportion between the two answers given by respondents multiplied by 100, so the final Q-score rating is calculated by the popularity percentage divided by the familiarity percentage (Shimp, 2013, p. 297), while only answers “one of their favorites” are taken into account (Williams, 2014). It is necessary to note that celebrity can obtain a high liking score even if the public exposure is limited, or on the other side, the high media exposure is not directly connected with high likeability score.

Q scores focused on personalities or character are divided into 5 categories<sup>2</sup> (see table 1).

*Table 1: Characteristics of Q-score (QScore-Insight, 2016).*  
(Continues on the next page)

| Category    | Database contains                  | Number of surveyed characters | Category of engaged personalities                                                                                                                                                                                                                     | Representative panel                                                                                                                                                                                            |
|-------------|------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cartoon Q   | Characters and licensed properties | 15 000                        | Comics, cartoon and animated movie characters.<br>Video Games or toys.                                                                                                                                                                                | Kids 6-11.<br>Teens 12-17.<br>Adults 18+<br>Mothers of children in age 2-5, 6-11, 12-17.<br>Purchasers of video games.<br>Purchasers of home entertainment video.<br>Social media users.<br>TV network viewers. |
| Performer Q | Celebrities                        | 25 000                        | Movie actors and actresses.<br>Prime time TV stars.<br>Sports personalities.<br>Social media influencers.<br>Musical performers.<br>Chefs.<br>Comedians.<br>Reality personalities.<br>Models.<br>Fashion designers.<br>Newscasters and program hosts. | Adults 18+<br>Kids 6-12.<br>Teens 13-17.<br>Social media users.<br>TV network viewers.<br>Movie goers.                                                                                                          |

<sup>2</sup> There are 3 more Q-scores besides those mentioned in table 1 (Kids and Teens Brand Q, Brand Attachment Q, TV Q / Cable Q).

|                      |                             |        |                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                     |
|----------------------|-----------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sports Q             | Sports personalities        | 15 000 | Active and retired personalities.<br>Extreme athletes.<br>Coaches and managers.<br>Broadcasters.                                                                                                                          | Adult 18-64 sports fans broken down by age segments and gender.<br>Teen 13-17 sports fans.<br>Other household demographic.<br>Social media users.                                                                                                                                                   |
| Hispanic Performer Q | Hispanic celebrity database | 2 000  | Movie actors and actresses<br>Prime time TV stars.<br>Sports personalities.<br>Social media influencers.<br>Musical performers.<br>Chefs.<br>Comedians.<br>Fashion designers.<br>Models.<br>Newscaster and program hosts. | Adults 18-64, teens 13-17 and other household demographics (income, education, occupation...).<br>Social media users.<br>TV viewers.<br>Movie goers.<br>Reality personalities.<br>The research is made over all levels of acculturation (Spanish-dominant, English-dominant, bilingual households). |
| Dead Q               | Deceased personalities      | 1 000  | Movie actors and actresses.<br>Chefs.<br>Prime time TV stars.<br>Newscasters.<br>Comedians.<br>Models.<br>Musical performers.<br>Fashion designers.                                                                       | Male and female adults 18+<br>Social media users.<br>TV viewers.<br>Movie goers.<br>Casino and slot players.<br>Home entertainment video purchasers.                                                                                                                                                |

The Q-score ratings are available for various demographic segments, such as those calculated by income, education, region, race, ethnicity etc. (QScore-Insight, 2016).

### 3. E-SCORE

E-Score by E-Poll Market Research is a celebrity appeal ranking which includes a measurement of 46 personality attributes. A database includes more than 9,000 celebrities, 4,500 characters and 1,000 athletes. Gerry Philpott, the founder of E-Poll Market Research has developed this methodology to gather a data on celebrity perception by the public. E-score was developed as one of the first methods of quantitative celebrity value expressing. It's goal it to make the selection of the celebrities for advertising campaigns, television shows and films more transparent and easier (Williams, 2014).

A ranking is provided in following categories: „most appealing“, „biggest gain and losses“, „up and comers“ and „top potential spokespersons“ (E- Poll Market Research, 2011 in Marshall and Redmond, 2016, p. 200). Weekly updates of E-scores give marketers the opportunity to permanent access to relevant information about celebrities, so they can analyze current, but also past events of the celebrities' careers with potential impact on their perception by the public (Williams, 2014). By providing the comprehensive perception of celebrity's personality, E-score offers complex profile of the celebrity (Solomon, 2009, p. 298).

E-score is executed by panel research and the survey is distributed via email. A panel represents the general population by age (starts at 13), gender and region. Each survey is limited to 25 names of personalities. Data are collected on weekly basis which makes them very current. The awareness is measured by name only or image only evaluation and the appeal is measured on 6

points scale with 46 attributes of personality (Williams, 2016). Thus the survey results reflect the (1) the awareness, (2) demographic information about respondents, (3) personality attributes and it also offers (4) qualitative insight into appeal (Williams, 2014). For a charge of \$1,250 even personalities not included in a core database can be examined.

According to Williams (2014) the split name and face awareness is researched through the procedure in which the half of the surveyed respondents are given only a photo of celebrity and the second part of them are only given the name (Williams, 2014). In the second part of the study, respondents evaluate 46 personal attributes of each celebrity referring to their general feelings about the celebrity. This attributes are evaluated on six point scale: like a lot, like, like somewhat, dislike somewhat, dislike and dislike a lot, reflecting the correspondence with celebrity (Williams, 2014). The result of the evaluation is presented by the percentage of celebrity's positive or negative appeals and a set of his or her characteristics (Williams, 2016). The attributes section offers respondents to add comments by the open-ended questions (E-Poll Market Research, 2011, p. 11) to make a qualitative insight into the appeal to evaluated person (Williams, 2014). Moreover, the same procedure is conducted with the important role or character/characters acted by the celebrity in popular media products, eg. movies or TV shows (the character and the celebrity persona is evaluated separately). The awareness and appeal scores of each celebrity are weighted through the special algorithm, in which partial scores of particular celebrity are compared with other celebrities' scores and the result represents the final E-score. As Williams notes, the E-score works like a percentage, because achieved score also represents the percentile rank (Williams, 2016).

To present E-score method in praxis, we can point to Emma Watson (popular actress). According to E-score celebrity from 2011 (E-Poll Market Research, 2011, p. 33), her awareness score was 42% and the most presented appeals were „like a lot“ and „like“ (both 38%). Moreover, Emma Watson was also evaluated as Hermione Granger, one of the main characters in Harry Potter movies. E-score showed that Hermione generated even higher „like a lot“ rating (45%). Due this fact we can assume that public is more familiar with Harry Potter character than with the actress herself. The actress and film character has achieved 3 out of 5 identical attributes (talented, attractive and intelligent). Attributes „attractive“ and „talented“ were rated very closely, however the „intelligent“ was rated much higher in case of Hermiona (78 %, while only 44% for Emma). Moreover, the actress was perceived as „cute“ and „beautiful“, while Hermiona as „brave“ and „articulate“.

### 3. DAVIE-BROWN INDEX

The Davie-Brown Index (DBI) measures overall consumer perception of celebrities. It uses quantitative and qualitative approaches (DBI-What is the celebrity, No date). This evaluating technique has been developed by Sharp Analytics in 2006 (Hogg, 2014). Today, it is a product of The Marketing Arm<sup>3</sup> and Repucon<sup>4</sup> promoted as „...a genuinely global product...“ sold to advertising agencies and brands (Long, 2014)

DBI measures perception of more than 8.000 personalities and it offers evaluation by more than one million people in 15 markets around the world (O'Reilly, 2016). The survey is based on monthly data collecting from a sample of 500 respondents representing particular national market. DBI is run by independent panel providers for each national market (Dundas, 2014 in Long, 2014). The overall DBI score aggregates the eight attributes: (1) awareness, (2) appeal, (3) aspirations, (4) breakthrough, (5) endorsement, (6) influence, (7) trendsetter and (8) trust (Long, 2014). All answers are given through 6 degree attitude scale.

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<sup>3</sup> Consumer engagement agency, part of promotion agency Omnicom Group, Inc.

<sup>4</sup> Sports and entertainment intelligence and advisory company, based in London.

Maximal DBI score is 100. For example, Taylor Swift’s score was 88.5, which helped her to become the best rated music artist for 2016 (O’Reilly, 2016).

| Attribute    | Question                                                                                        | Characteristic                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Awareness    | Are you aware of this person?                                                                   | Percentage of people who are aware of the celebrity and can her/ him recognize by name or a face |
| Appeal       | How much do you like or dislike this individual?                                                | Measures the likeability of the celebrity (from „dislike a lot“ to „like a lot“)                 |
| Aspiration   | Do you consider a life of this celebrity to be a one you would aspire?                          | Reflects the degree of ideal life of celebrity according to consumers’ preference.               |
| Breakthrough | Do you tend to pay attention if you come across this person in the media (TV, print, radio...)? | Indicates the notice degree of the celebrity appeared on TV, print or in a film.                 |
| Endorsement  | Do you consider this celebrity being an effective product spokesperson?                         | Reflects the degree of celebrity’s identification as an effective product spokesperson.          |
| Influence    | Do you think that this individual is influential with today’s audience?                         | Measures consumers’ belief in celebrities’ influence in today’s world.                           |
| Trendsetter  | Is this individual a trendsetter with today’s audience?                                         | Reflects the opinion on the celebrity’s position in trend led society.                           |
| Trust        | If you were acquainted, would you trust this individual to consider your interests?             | Indicates the level of trust in celebrity’s image and words.                                     |

*Table 2: The eight basic attributes of the Celebrity DBI. Processed by authors (inspired by Foster, O’Reilly and Davilla, 2016, p. 326).*

The DBI scores are currently collected in 15 countries: USA, United Kingdom, Australia, Japan, France, Germany, Italy, Spain, Argentina, Brazil, China, India, Mexico, Russia and Turkey (Long, 2014). The database includes media personalities such as film, TV or music stars, but also business leaders, athletes and other categories of popular people (Foster, O’Reilly and Davilla, 2016, p. 325). According to official DBI web page (celebritydbi.com), the Celebrity DBI is the only celebrity evaluation service providing brand-relevant insights. This metric works with online database of over 5,000 celebrities and it allows data segmentation by key demographic criteria. Through the image or name recognition, DBI offers a celebrity awareness assessment and it also determines celebrity’s ability to impact brand affinity or consumer purchase intention (DBI-What is the celebrity, no date). This metric provide a celebrity “currency” and allows marketers and agents to compare levels of celebrities influence in the population (Marshall and Redmond, 2016, p. 200).

*Table following on the next page*



|                          | Number of celebrities in the database | Data available from | Periodicity  | Factors investigated                                                                                                              | Panel                                                                                                                                                | Calculation                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|---------------------------------------|---------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Q-score</b>           | 58,000 <sup>5</sup>                   | 1964                | Twice a year | Familiarity<br>Likeability                                                                                                        | Specific panel for each celebrity category                                                                                                           | Popularity divides by familiarity (only answers “one of their favorites” are taken into account)                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>E-score</b>           | 14,500 <sup>6</sup>                   | 2001                | Per week     | Familiarity (awareness)<br>Quantitative and qualitative<br>Appeal to a celebrity (likeability)                                    | General population 13+                                                                                                                               | Calculation of averages (46 attributes on 6 point scale plus open ended questions) to benchmark individuals (celebrities) against their peers (other celebrities in the same category).                                                                                                                                                                                                                                                                                                  |
| <b>Davie-Brown Index</b> | 8,000                                 | 2006                | Per month    | Awareness + 7 personality attributes<br>Appeal<br>Aspirations<br>Breakthrough<br>Endorsement<br>Influence<br>Trendsetter<br>Trust | The sample consists of 500 people representing each from 15 national markets. The providers of panel are independent and specific for each location. | The overall DBI is calculated according to awareness and the other seven measured attributes. Because the recognition is the base part of brand success, awareness is given a 60 percent weighting in the overall DBI and remaining 40 percent is calculated using average sub-index scores.<br>DBI =<br>$0,6 * (\text{Awareness}) + 0,4 * ((\text{Appeal} + \text{Breakthrough} + \text{Trend-Setter} + \text{Influence} + \text{Trust} + \text{Endorsement} + \text{Aspiration}) / 7)$ |

*Table 3: Characteristics and comparison of Q-score, E-score, Davie-Brown Index (by authors).*

#### 4. CONCLUSION

From the point of view of the celebrity endorsement selection, mentioned metrics have number of advantages as well as disadvantages. By desk research we found that Q-score is probably the most common metrics for marketing communication praxis. It also offers results available for more various forms of endorsement, including those using deceased celebrities and cartoon characters. Q-score even divides celebrity personas into the three categories (performers, athletes and Hispanic performers), which helps marketing professionals to better orientate on the field. From this perspective, Q-score seems to be the most complex metric on the market. Q-score offers not only information about the awareness, but it also analyses the level of likeability of particular subject. Scores achieved by two mentioned factors are then analyzed through a unique formula offering the final Q-score representing not only favorable attitudes toward the personality, but they also refer endorsement value and use. These two factors are then combined and the result shows if this person is appropriate for particular product, brand or service according to its typical consumers and users. However, according to Gunter, the Q-

<sup>5</sup> Including deceased celebrities and cartoon characters.

<sup>6</sup> Including characters and athletes.

score is rather „...informative for employers and sponsors of celebrities to have access to celebrity evaluations that identify specifically what people feel about these public figures...“, and as author continuous “...it might be important to know whether there are specific attributes displayed by celebrities that are the primary sources of public animosity or negativity towards them.” (Gunter, 2014, p. 21). Two kinds of information included in data obtained by Q-score might be enough for the initial phase of celebrity selection. However, it very probably requires marketers to apply more complex investigation of celebrities later, before final selection, when more sophisticated methodology should be used.

Q-score has another limit in its scope, as it operates solely in U.S. environment. As it can be used for American and global market, its application for national markets seems to be very limited, despite the fact of worldwide influence of American culture. Q-score's massive database contains 58,000 celebrities, which is far more when compared to two other metrics investigated.

Second metric investigated was E-score, covering 14,500 celebrities and fictional characters. When comparing to Q-score, E-score offers more complex data as it takes into the account more comprehensive questionnaire. Number of data is measured on 6 points scale with 46 attributes of personality (Williams, 2016). Big advantage of E-score is its calculation based on the results of weekly email-based surveys, so it is extremely responsive. Similarly to Q-score, also E-score provides data that can be used only in U.S. and global market.

The Davie-Brown Index is provided by the Europe based company, and it is the only metric out of investigated ones taking into consideration national markets. With relatively low number of celebrities included (8,000), it covers 15 countries all around the world. Davie-Brown index uses 6 point scale to measure 6 attributes of celebrities. Categories chosen are in correspondence with current findings on the field of celebrity endorsers' selection, which suggest taking into the consideration not only the familiarity, popularity and attractiveness of celebrity, but also his credibility (Ohanian, 1990).

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## COMPARATIVE ANALYSIS OF MARKETING COMMUNICATION STRATEGY ON SOCIAL NETWORKS: CASE STUDY OF PRESIDENTIAL CANDIDATES DONALD TRUMP AND HILLARY CLINTON

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### ABSTRACT

*In the past ten years, with a rapid development of the Internet and digital technology in general, new trends have developed in marketing communication of all types of industries and in political marketing communication as well. The Internet, and social networks in particular, have become the integral part of integrated political marketing communication and consequently are in the function of branding a political party or a political candidate. The implementation of social networks in political campaigns has enabled direct feedback from a potential voter. Based on this fact, communication during a political campaign can be developed in line with desires and preferences of the electorate. Key messages of a political campaign find a direct way to the electorate through social networks as they offer a possibility of selecting target groups towards which all promotional activities are directed. Additionally, social networks make an ideal channel for content marketing whose primary goal is to attract new voters. Precisely the new voters are the decisive factor in making the decision who to vote for in the elections. The fundamental goal of this research is to establish how the candidates in the US Presidential Elections used social networks in their campaigns and to determine the differentiation in marketing communication strategy on social networks of presidential candidates Donald Trump and Hillary Clinton. Based on the obtained results it can be concluded how Donald Trump used social networks Facebook, Twitter and Instagram to motivate his target group as well as new voters to vote in the election and consequently secure his victory. Despite the boycott of all major mainstream media, Donald Trump managed to convey the key messages of his presidential campaign to the citizens of the US using unconventional marketing strategy, and thus securing majority electoral vote and winning the US presidential election 2016.*

**Keywords:** *social networks, political marketing, US presidential elections, Donald Trump, Hillary Clinton*

### 1. INTRODUCTION

In the past ten years or so new trends in marketing communication have taken over, primarily due to the fast development of the Internet. With the development of social networking as a new tool of digital marketing communication on the Internet they have become an integral part

of current political marketing. Marketing experts engaged in political campaigns opt for social networking in their effort to differentiate a political party or candidate from their competition. The first politician to deploy social networking in his political campaign was the former US president, Barack Obama. In the 2008 Presidential Campaign Obama's expert marketing team specifically used the advantages of social networking and digital communication to differentiate Barack Obama from his opponent the Republican candidate John McCain and win the election.<sup>1</sup> Social media should be implemented into the integrated political marketing communications as a medium for broadcasting messages as well as the medium for conversation. Using social networking in political conversation puts the focus on the two-way communication with a potential voter. Based on the potential voters' feedback through social networks it is possible to make adjustments during the campaign according to voters' desires and needs. One of the key advantages of social networking is the ability to target the message that needs to be conveyed directly towards a target group. The most common social networks used today in digital political marketing communication are *Facebook*, *Twitter*, *Instagram* and *YouTube*.

## 2. SOCIAL NETWORKING AS A TOOL OF POLITICAL DIGITAL MARKETING COMMUNICATION

“The specifics of political communication is the fact that it is a mutual/interactive process of exchange of political contents between various political actors during the political (electoral) mandate or the elections through communication channels (media) with the aim of achieving certain effects” (Tomić, Spahić, Granić, 2008., p.37). A new era in political communication began with the emergence of social networking. Until it appeared it used to be a one-way marketing communication but owing to social networks it has become a two-way interactive communication. Social networking enables numerous marketing activities as shown in Picture 1.

Picture1. Marketing activities through social networks



Source: according to Puška, A. (2012). Tools for implementing marketing through social networks. *Praktični menadžment: stručni časopis za teoriju i praksu menadžmenta*, 3(1), p. 77. Retrieved 02.03.2017. from <http://hrcak.srce.hr/96969>

<sup>1</sup> Macan K (2013.). Barack Obama – the first person to use the power of the Internet and social networking to its full potential. Retrieved 02.03.2017. from <http://manjgura.hr/blog/specijal-barack-obama-prvi-covjek-koji-je-iskoristio-punu-snagu-interneta-i-drustvenih-mreza/>

"Social media enable their users easier access to information and enhance the ability of a community to get organized and attain goals" (Ružić, Biloš, Turkalj, 2016, p. 93). A successful segmentation of the *online* market on social networks enables marketing experts to direct key campaign messages towards a selected target group. "Social networks enable consumers to become connected with a brand on a far deeper and broader level than ever before" (Kotler, Keller, Martinović, 2014, p. 548). For this reason precisely, political parties or political candidates use social media to send off the messages that potential voters want to hear, in other words, they try to find the right way to establish the communication with the voters in order to build a long-lasting relationship with them, which will consequently result in their votes in the election. In political communication messages on social networks need to have a strong '*call to action*'. In political communication, regardless of whether it is *offline* or *online*, it is necessary to stay consistent. Voters value this above all. In election campaigns on social networks marketing experts aim to show content not shown in traditional media and entice a potential voter to take action, which means to participate in creating content and sharing that content.

### 2.1. US presidential election system

Before the general election, which takes place on a Tuesday after the first Monday of November<sup>2</sup>, the primary elections take place at the Republican and Democrat Party level, i.e. party members that announce the party candidacy run in the state party primary elections. "In the primary elections delegates from each state are chosen according to the percentage of votes each candidate gets. The one who gets more from the total number of delegates at the national level becomes a party nominee for president and is officially announced at the two party conventions in summer. In the last Presidential Election 2016 Donald Trump was the Republican candidate, while Hillary Clinton was the Democratic Party candidate. "Americans citizens elect presidents according to the electoral system in which each state has a certain number of electoral votes according to the number of representatives in Congress. In order to win the US presidency a candidate must get at least 270 of a total of 538 electoral college votes." (McClain Brown, 2016)

## 3. DESCRIPTION, OUTLINE AND INTERPRETATION OF RESEARCH RESULTS

### 3.1. Description of conducted research

A comparative analysis of social networks and means of communication of presidential candidates Donald Trump and Hilary Clinton was carried out for the purpose of this paper. The analysis includes the period from the announcement of the Republican nominee Donald Trump at the Republican Party Convention on 22<sup>nd</sup> July 2016, and Hilary Clinton as the Democratic Party nominee at the Democrat Party Convention on 28<sup>th</sup> July 2016 to the Election Day on 8<sup>th</sup> November 2016.

The rating criteria of the profiles of presidential candidates on social networks *Facebook*, *Twitter*, *Instagram* and *YouTube* were defined, and based on this metrics the evaluation of their profiles was carried out. For the purpose of this paper the online analytics tool *Trackalytics* was used, which the authors deployed to collect numerical data (number of followers, number of posts per day) and *MS Excel* 2016.

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<sup>2</sup> Raunić F. (2015). Analiza: Sve što trebate znati o predsjedničkim izborima u SAD-u. Retrieved 02.03.2017. from <http://www.telegram.hr/politika-kriminal/telegramova-analiza-sve-sto-trebate-znati-o-predsjednickim-izborima-u-sad-u/>

### 3.2. Overview and interpretation of results

Both presidential candidates in the presidential campaign used social networks *Facebook*, *Twitter*, *Instagram*, while the democratic presidential candidate Hilary Clinton used *YouTube*, *Pinterest*, *Snapchat* and *Medium* as well.

Donald Trump has been active on *Facebook* since February 2010, and on *Twitter* since March 2009, while Hilary set up a *Twitter* account in April 2013 and a *Facebook* account at the beginning of April 2015 when she launched her presidential bid. Donald Trump announced his candidacy on 16<sup>th</sup> June 2015.

The number of followers of both candidates on social networks *Facebook* and *Twitter* from the moment of announcing the candidacy to winning the party nomination is shown in Picture 2 showing follower growth in a table.

Picture 2. Number of presidential candidate followers on social networks *Facebook* and *Twitter* from the announcement of candidacy to winning the nomination

|                        | Facebook                  |                        |        | Twitter                   |                        |         |
|------------------------|---------------------------|------------------------|--------|---------------------------|------------------------|---------|
|                        | Announcement of candidacy | Winning the nomination | Growth | Announcement of candidacy | Winning the nomination | Growth  |
| <b>Donald Trump</b>    | 8 307 754                 | 9 559 132              | 15.06% | 3 226 134                 | 9 941 948              | 208.17% |
| <b>Hillary Clinton</b> | 0                         | 4 542 919              | /      | 3 143 606                 | 7 759 349              | 146.83% |

Source: authors' work according to the data from online analytics tool Trackalytics, Retrieved 10.03.2017. from <http://www.trackalytics.com/>

Such a large growth of followers on *Twitter* is not surprising considering that *Twitter* was Donald Trump's most important channel of communication with his potential voters. The number of followers of both presidential candidates on social networks *Facebook* and *Twitter* from winning the nomination to the Election Day on the 8<sup>th</sup> of November 2016 is shown in a table in Picture 3.

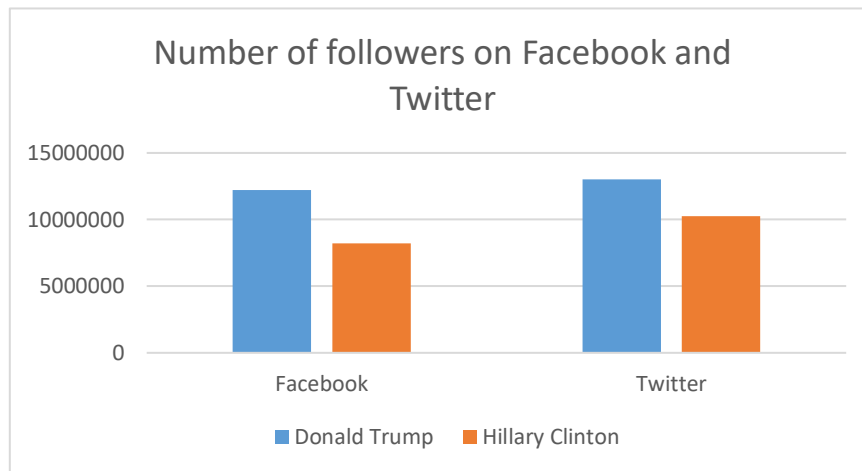
Picture 3. Number of presidential candidate followers on social networks *Facebook* and *Twitter* from winning the nomination to the Election Day

|                        | Facebook               |              |        | Twitter                |              |        |
|------------------------|------------------------|--------------|--------|------------------------|--------------|--------|
|                        | Winning the nomination | Election day | Growth | Winning the nomination | Election day | Growth |
| <b>Donald Trump</b>    | 9 559 132              | 12 208 658   | 27.72% | 9 941 948              | 13 018 822   | 30.95% |
| <b>Hillary Clinton</b> | 4 542 919              | 8 232 075    | 81.21% | 7 759 349              | 10 264 346   | 32.28% |

Source: authors' work according to the data from online analytics tool Trackalytics, Retrieved 10.03.2017. from <http://www.trackalytics.com/>

Picture 4 shows the number of followers on social networks *Facebook* and *Twitter* at the end of the presidential campaign. Data for *Instagram* is not publicly available through any of the online analytical tools.

Picture 4. Comparative overview of the number of Donald Trump's and Hillary Clinton's followers



Source: authors' work according to the data from online analytics tool Trackalytics, Retrieved 10.03.2017. from <http://www.trackalytics.com/>

At the end of the presidential campaign it can be seen that the Republican presidential candidate had more followers on social networks *Facebook* and *Twitter*, which were his main social networks for communication with the voters. As it is shown in Picture 5, Hillary Clinton had a higher daily growth of followers on *Facebook* and a larger number of posts from the moment she won the nomination. On the other hand, Donald Trump had a higher daily growth of followers on *Twitter* and a larger overall number of posts while Hillary Clinton on average had a larger number of posts per day. All posts on *Twitter* from setting up the *Twitter* account<sup>3</sup> have been taken into consideration for the overall number of posts on *Twitter*. This shows that *Twitter* was a very important online communication channel for Donald Trump.

Picture 5. Statistical data on social networks for both presidential candidates from winning the party nomination to the Election Day

|          |                                   | Donald Trump | Hillary Clinton |
|----------|-----------------------------------|--------------|-----------------|
| Facebook | Average daily growth of followers | 24 086.60    | 35 472.66       |
|          | Total number of posts             | 267          | 318             |
|          | Average number of posts per day   | 2.43         | 3.05            |
| Twitter  | Average daily growth of followers | 27 971.52    | 24 086.51       |
|          | Total number of posts             | 9824         | 34 593          |
|          | Average number of posts per day   | 11           | 27              |

Source: authors' work according to the data from online analytics tool Trackalytics, Retrieved 10.03.2017. from <http://www.trackalytics.com/>

It is interesting how “Over 70.3% of the tweets sent from Hillary Clinton’s account are published using TweetDeck, a desktop tool favoured by social media professionals, Over 0% of the tweets from Donald Trump’s account were published directly from Android devices and

<sup>3</sup> Kegan J (2016). Clinton vs. Trump: How They Used Twitter. Retrieved 10.03.2017. from <http://graphics.wsj.com/clinton-trump-twitter/>



iPhones, in an almost even split.” (Kegan, 2017). Hillary Clinton set up her *Instagram* account on 16<sup>th</sup> June 2015 with a photo showing women’s coats in the colours of the American flag – red, white and blue, and the caption ‘Hard choices’. This type of communication in the first post is calculated since the fashion choice focuses on patriotism, which Americans care deeply about and are famous for. On the other hand, Donald Trump has been on *Instagram* since April 2013.

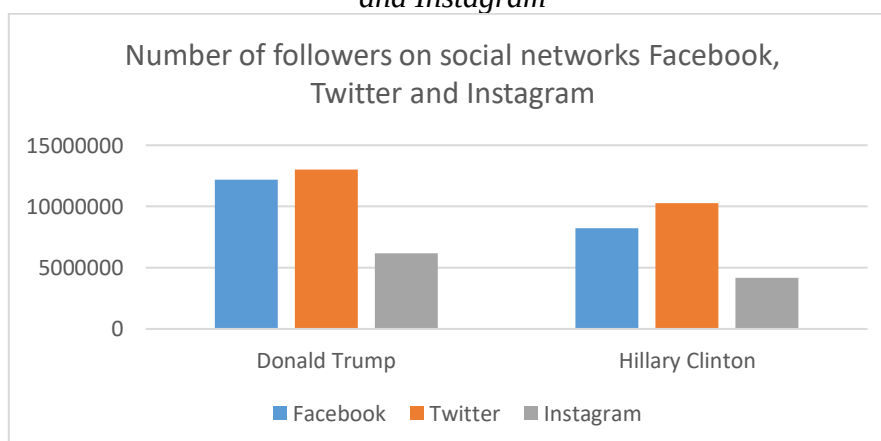
Picture 3. Hillary Clinton's first Instagram post



Source: Sharon K. (2015). What happens when Hillary Clinton sets up an Instagram account? Retrieved 10.03.2017. from <http://www.ocregister.com/articles/clinton-665612-hillary-instagram.html>

Since there is no public online analytics tool with which a statistical analysis of the change in the number of *Instagram* followers can be done from the announcement of presidential candidacy to the Election Day, for the purpose of this paper the total number of *Instagram* follower on 12 March 2017 is shown. Hillary Clinton has 4 189 780 followers and 835 posts while Donald Trump has 6 194 348 followers and 1574 posts. Picture 4 shows a graphical overview of the number of followers on social networks – *Facebook*, *Twitter* and *Instagram* showing Donald Trump’s considerable advantage over Hillary Clinton.

Picture 4. Presidential candidates' number of followers on social networks Facebook, Twitter and Instagram



Source: authors' work according to the data from online analytics tool Trackalytics, Retrieved 10.03.2017. from <http://www.trackalytics.com/>

It is important to point out that Hillary Clinton had posts on *YouTube* channel, unlike Donald Trump who did not use YouTube at all. Hillary Clinton has 132 374 subscribers on YouTube channel, 256 videos and a total of 38 309 692 views. The analysis of presidential candidates' web sites has shown that they have links to active profiles on social networks that were use in the presidential campaign, and that Hillary Clinton's web site<sup>4</sup>, apart from links to Facebook, Twitter and Instagram has links to Snapchat, LinkedIn, Pinterest and Medium.

Apart from the leading social networks, Hillary Clinton's marketing team used *Snapchat*<sup>5</sup>. Hillary Clinton's *Snapchat* profile was set up on 10<sup>th</sup> august 2015. This is not surprising taking into consideration that *Snapchat* is the fastest growing social network in the US in the age group 18 to 24<sup>6</sup>. With this Hillary Clinton's marketing team attempted to reach Generation Y or the so-called Millennials, the generation born between 1978 and 2000<sup>7</sup> that predominately uses mobile internet, they want to identify with a brand, prefer communication through photos and videos, and Snapchat is a platform that provides precisely that.

According to the research of comScore<sup>8</sup>, 71% of *Snapchat* users in the US are aged between 18 and 34 while 45% are between 18 and 24. For the presidential candidates a large number of *Snapchat* users were first time voters and therefore, it comes as no surprise that Hillary Clinton's team opted for this strategy in the attempt to find a communication niche among social network users.

If we compare a type of communication on social networks, on *Facebook* Hillary Clinton mostly used short video messages addressing directly her target group. She aimed most messages towards Latino and Afro-American groups, LGBT communities and women, while Donald Trump roughly equally used video messages and photos in his posts. Hillary Clinton had separate *Facebook* pages for the so-called *swing states*. For most US states it is well known which political party they traditionally prefer, Republican or Democratic, while in the *swing states* voters change preferences from election to election. These states are Florida, Ohio, Colorado, Iowa, Nevada, New Hampshire and Virginia and they together bring a total of 66 electoral votes<sup>9</sup>. Most often these states are the crucial ones for winning the US election, therefore Hillary Clinton's marketing team used *Facebook* pages with names such as '*Hillary for Ohio*', '*Hillary for*', '*Hillary for Colorado*' etc. in the attempt to communicate closely with the citizens of these states and thus differentiate themselves from the rival candidate. The marketing team often included Hillary Clinton's family in the online communication in the form of posting photos with her husband and former President Bill Clinton and her daughter Chelsea Clinton while Donald Trump rarely used this strategy. The online tactics of 'a 24-hour takeover of the Instagram profile' was used by Hillary Clinton's marketing team. In other words, Hillary Clinton's husband and daughter would take over her profile for a day and post

<sup>4</sup> <https://www.hillaryclinton.com/>

<sup>5</sup> A mobile application that allows users to send videos and pictures (snaps) that disappear ten seconds after the recipient views them. Retrieved 10.03.2017. from <https://www.tportal.hr/tehnolo/clanak/sto-je-snapchat-i-kako-ga-koristiti-20160519>

<sup>6</sup> Wranka M. (2016). Što je Snapchat i kako ga koristiti?. Retrieved 10.03.2017. from <https://www.tportal.hr/tehnolo/clanak/sto-je-snapchat-i-kako-ga-koristiti-20160519>

<sup>7</sup> Mušura A. (2010). Milenijalci će uskoro zavladatai. Retrieved 10.03.2017. from <http://www.poslovni.hr/after5/milenijalci-ce-uskoro-zavladatai-146126>

<sup>8</sup> Chittal N. (2015). Hillary Clinton joins Snapchat, Retrieved from 10.03.2017. <http://www.msnbc.com/msnbc/hillary-clinton-joins-snapchat>

<sup>9</sup> Mandir A. (2016). Nije to tako komplicirano: Najbitniji izbori na globalnoj razini kroz 6 pitanja i odgovora. Retrived 10.03.2017. from <http://www.vecernji.hr/svijet/elektori-swing-states-nije-to-tako-komplicirano-1126845>

photos in order to show a different aspect of the campaign i.e. the campaign from their perspective. This type of posts always generated a large number of likes<sup>10</sup> and shares. Despite the boycott of the US mainstream media Donald Trump and his marketing team focused exclusively on social networks, primarily *Twitter* and *Facebook*. Trump's key slogan was 'Make America Great Again'. In his posts he addressed the 'ordinary Americans', middle class citizens to whom he made promises that factories would not close down and relocate to the parts of the world with cheaper labour force, criticizing the Obama administration. Further, he was pointing out numerous mistakes of the previous administrations that impoverished the middle classes, promised not to send American soldiers to wars in other countries and in his messages often criticized and insulted his opponents and often expressed views against minority groups in America such as Muslims, Afro-Americans, Latinos and members of the LGBT community, the very groups of people that Hillary Clinton was addressing. Often, Hillary Clinton also took on the role of the attacker but using a far less aggressive tone. The focal point of her campaign was the slogan 'I am with her', 'Stronger together', 'Fighting for us' and slogan 'Love trumps hate', in which marketing experts used a pun to make it clear that the Republican rival was the one to advocate hatred, intolerance towards the minorities etc. After analyzing the profiles on social networks, Hillary Clinton rarely used campaign hashtags<sup>11</sup> #IamWithHer while Donald Trump used hashtag #TrumpPence16 in his posts, the hashtag that combined the surnames of the presidential candidate and vice presidential candidate. In the past months before the election Hillary Clinton often shared on Twitter a link through which followers could see their polling location. Although Donald Trump focused on social networks with a well thought out and unconventional political discourse with his opponents and his opponent, never seen before in the history of politics, it often brought him to the front pages of numerous American media and in this way he broadened the scope of his messages which in the end the voters perceived in the way he wanted. This was proven on the Election Day, on 8<sup>th</sup> November when Donald Trump won the election over Hillary Clinton.

#### 4. CONCLUSION

Marketing teams of both presidential candidates saw the advantages and impact of social networks in the political campaign for the US Presidential Election 2016. Donald Trump focused on the communication through Facebook and Twitter, using Twitter more often and having his Twitter posts quoted in the American traditional media, while Hillary Clinton used a far larger number of social media with the aim to reach a larger number of potential voters. If we compare the way of communication on social networks it can be seen that Donald Trump's communication style was more aggressive and offensive. Both candidates preferred photo and video content in their posts. Although it is not known how much the candidates spent on advertising on social networks, the comparative analysis shows that in the end Donald Trump had a larger number of followers than Hillary Clinton on all three largest social networks – Facebook, Twitter and Instagram and that not using YouTube as the most powerful social network for posting videos and not using Snapchat did him no harm. Donald Trump stayed true to himself and from the beginning kept the same communication style, which eventually led him to win the election and become 45<sup>th</sup> President of the USA. The results of this research can serve as a basis for more detailed research of this topic.

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<sup>10</sup> A sign of approval or liking of a social networking post

<sup>11</sup> A word preceded by a sign # represents a notion that can be searched, i.e. on social networking sites it leads to all posts related to a hashtag. Retrived 10.03.2017 from <https://www.bizit.hr/sto-je-hashtag-i-cemu-sluzi/>

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## EMOTIONS IN ADVERTISING AND THE IMPORTANCE OF THE STORY AND CHARACTER

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### ABSTRACT

*The article deals with the issue of emotions in advertising, which is investigated in relation to the success and likeability of advertisements themselves. This issue is illustrated directly on several successful examples from Slovak environment. Since numerous scientific approaches consider human facial expressions as the most accurate representation of the internal human experiences, theoretical conclusions are supported by the results of measurements using software Emotion ID. It is a software solution that analyses the responses of people watching the video and transcribe them into statistical data. In addition to the relationship between positive emotions and eventual success of advertising, also other aspects are involved in the process. Since the recipient does not rate advertising according to every viewed moment, as in the most successful Slovak ads, we can observe basic function of the so-called peak-end effect. According to this theory are human emotions based on several key moments in the narrative of the ad. Results showed that with proper application of this pattern, the maximum intensity of the experience manifests itself most precisely at those respondents who reportedly seen advertising message several times. Another area on which the article focuses is building the characters that appear in commercials. Important is not just only their believability, but also consistency and motivation. In this paper, we seek to unravel the relationship between the success and likeability of advertisements and the human emotions by examining the importance of peak-end experience and elements relating to character.*

**Keywords:** Advertising, Emotions, Character, Peak-end rule

### 1. INTRODUCTION

This article discusses emotions in advertising, particularly in relation to the effectiveness of advertising. The part about emotions is based on the approach of several authors (Nakonečný, 1998; Vysekalová, 2014; Atkinson, 2003), whereas it also addresses various possibilities of their measurement, using computerized techniques that are based on decoding facial expressions. The article tries to illustrate the importance of emotions in advertising on an example of successful advertising campaign from Slovak environment. It is illustrated by the creative concept of the iconic soft drink of a cola type, called Kofola, which has been so far, the most successful campaign in the brand's history. The article brings its success not only via achieved quantitative indicators, but also via the results of measuring the level of positive emotions among the respondents. Additionally, it documents also the other aspects that can play significant roles in forming attitudes toward advertising communication, taking into account the importance of a character and the story itself in advertisements. The article is based on literature relevant to each theoretical framework, and it presents the methodology specifics of emotion research, whose results it gives, and which it subsequently develops with supplementary opinions of a relevant expert from the marketing field.

### 2. EMOTIONS IN ADVERTISING

Emotions represent a complex state, which includes experiential, physiological, behavioural, (Nakonečný, 1998, p. 415) and social level, and is triggered by specific stimuli and events (Slaměnik, 2011). The emotions originate as a response to certain affectively tinged experiences and like essential motives they can, in the same manner, mobilize and focus our behaviour.

Although there are a number of similarities between the emotions and motives, it is necessary to distinguish them. While the motives are activated internally, the emotions are triggered externally. (Atkinson, 2003, p. 388-389)

Since emotions are important factors of a daily life, it is not surprising that they are significantly engaged in customer and consumer behaviour. The emotional constituent is a part of the marketing approach from the outset, and nowadays its importance still continues to grow, as the role of consumer is activated and increased. According to Knap (2010), the time of experience economy has come, being the economy of consumers and services. Within this model, the emotions delineate a key element of effective communication, because it is exactly them that affect the perceived quality and value of products and services, which a consumer expects, requires, and receives.

Vysekalová (2014) states that emotions play an important role in the communication process, they are incorporated within it and also arise as a result of the communication processes. In the advertising environment, the emotions are more than just a form of verbal or non-verbal dialogue, yet they create a relationship between a specific communication and its particular recipient (Koprda, Košková, 2015). Although, concerning the classification of emotions we encounter different attitudes to their division, e.g. according to intensity, length, quality, or duration, for advertising communication, it is rather their polarity that is relevant in terms of positive-negative one. Nevertheless, it is necessary to take into account also the other aspects which influence a consumer. Most authors (e.g. Vysekalová, 2014; Vysekalová, Komárková, 2002; Thomson, MacInnis, Park, 2005; Marcus, MacKuen, 1993) agree that the use of positive emotions is more effective because it serves better for building a long-term relationship to a brand, product, or for the establishment of a positive image. This statement is supported by a summary of the advantages and disadvantages of applying emotions in commercial impact Tellisom (2000, referenced by Vysekalová, 2014, p. 79), while it just highlights, at one of the points, the risk of rejecting negative emotions:

**Advantages of emotions:**

- they draw the viewer into the story of advertisement and divert his/her attention away from the fact that the purpose of advertising is convince the viewer of something;
- the products that use an emotional connection through images, music, storyline, or characters are more interesting for the viewer, easier to remember, and require from him/her a lower level of attention than those using logical arguments;
- the viewer can identify himself/herself with the characters or storyline to such an extent that he/she buys a product presented in the advertisement;
- they secure generally better memorability of a product in the advertising.

**Disadvantages of emotions:**

- the viewer may be so much engrossed by the emotion that he misses the message of the advertisement;
- evoking strong emotions can make the impression on the viewer that the communicator abuses the situation;
- using an incorrect level of emotion can damage a brand;
- using negative emotions may be so uncomfortable that the viewer resists them unconsciously and forgets about the advertisement.

Emotions have a direct impact on consumer decision-making because a human being is biologically tuned to pay attention to them in every situation. Another important aspect is that the emotions can be recollected. This recollecting is enabled by the structure of brain responsible for memory - the hippocampus, together with the centre of emotions - the amygdala. In case the new initiative includes emotions, the amygdala is activated and new memory connections are created in the hippocampus. Every time we recall a saved piece of information, the accompanying emotions arrive again as well. (Bergh, Behrer, 2012).

An interesting perspective on the usage of emotional appeals is based on an important marketing indicator - the effectiveness of advertising campaigns. The most prestigious evaluation in this regard is EFFIE, which is an abbreviation of a word effectiveness, and it stands for the competition to honour the most effective advertisement. The EFFIE award was introduced in 1968 by American Marketing Association and nowadays it is a symbol of proven advertising effectiveness in almost 40 different countries. In two-round voting, the jury assesses measurable and tangible results of campaigns in relation to the specified objectives and evaluate the effectiveness of advertising campaigns in proportion to disbursement means (*Co je EFFIE?*, 2014).

Strong interrelation between emotions and efficiency in advertising was also proved by the results of The Gunn Report in combination with the data from IPA (Institute of Practitioners in Advertising) database. These results confirmed the finding that creative award winning campaigns are more emotional than rational. A significant discovery, for example, was also the fact that emotional advertisements are 11 times more effective for the growth of market share (Gunn, 2010).

## 2.1 Measuring emotions

According to Krech and Crutchfield (1958, referenced by Nakonečný, 1998, p. 416) emotions are the state of arousal of organism, which is manifested in three ways: 1. an experience, 2. behaviour, and 3. physiological changes. One of the most explicit complementary signs of the emotion are facial expressions. Whereas human facial expressions are one of the most versatile means of expressing emotions, we can reliably infer from them the emotional state of a person (Vysekalová, 2014; Hill, 2010). A number of methods are, in fact, based on the identification and classification of expressions of the human face. The analysis of facial expressions (Facial Movement Analysis - FMA) can detect emotions often better than an in-depth interview because it addresses the conscious and also unconscious facial movements. From this paradigm the methods of particular research agencies originate. These agencies focus on analysing consumers' emotional responses to advertising and on the emotional commitment to various stimuli.

The software called FaceReader is based on the theory of Paul Ekman and distinguishes six basic emotions: joy, sadness, fear, disgust, anger, and surprise (Vysekalová, 2014). FaceReader captures the image of a respondent, observes changes in respondent's facial expressions and record the intensity of emotional expressions on a timeline, while it can observe their mutual combinations and distinguish them in percent.

Dan Hill (2010, referenced by Bergh, Behrer, 2012, p. 194) described 23 different facial expressions correlative to basic emotions. By using web cameras, he can analyse people's emotional responses to advertising with the accuracy to one-thirtieth of a second. His tool, Sensory Logic, works on the principle of recognition of four different types of smile: a real smile, robust smile, faint smile, and micro smile.

To optimize the effectiveness of advertising also the software Affindex<sup>TM</sup> Facial Coding is used. It belongs to the company Affectiva and is applied in connection with the test solution Link<sup>TM</sup> by the company Millward Brown (Vysekalová, 2014). With the consent of a subscriber, his/her face is recorded while watching online advertisement in an ordinary environment, and after a second the results are automatically interpreted and recorded on a timeline. Then, these conclusions are combined with the respondent's answers from the questionnaire. This blended approach is convenient when optimizing campaigns.

Also, the company IBM has started cooperation with a provider of software solutions for the recognition of emotions nViso. Their new technology, 3D Facial Imaging, analyses micro expressions of a face and eye movements, while the captured reactions are compared with the database of human facial expression patterns. Due to this scientific analysis, companies can

measure the emotional reactions of consumers to internet advertising, branding, and other types of communication. (Vysekalová, 2014)

The example or FMA technology from Slovak environment is a tool Emotion ID. Due to computer vision and machine learning the tool is able to identify from a human face six primary emotions (anger, disgust, fear, joy, sadness, surprise), and a neutral state. On the timeline, it indicates the onset, intensity, and offset of emotions, thus reaching the correlation of an initiative to the induced emotion. In addition, the software tracks how a person's attention oscillates. The data of Emotion ID are the output of the software analysis of respondents' faces from an online panel of the research agency 2Muse, a member of ESOMAR. The data collection works online. (*ID Emotion Face Language Understood*, 2017)

### 3. CAMPAIGN KOFOLA

Kofola - soft drink of a cola type, which is literally iconic in Czechoslovak context, launched its image communication campaign in 2015. Whereas the implemented communication overcome the beforehand marked out objectives in terms of efficiency and success, the communication concept was developed further on in 2016. The communication campaign was created by the advertising agency Zaraguza and it is the perfect example of the efficient usage of emotions and well-made story and characters in advertising.

#### 3.1 Basic information about the campaign

- **Campaign budget**

|                                  | <i>Phase I (2015)</i> | <i>Phase II (2016)</i> |
|----------------------------------|-----------------------|------------------------|
| size of gross media budget (ATL) | 185 k. – 370 k. EUR   | 370 k. – 740 k. EUR    |
| size of gross media budget (BTL) | 185 k. – 370 k. EUR   | 185 k. – 370 k. EUR    |

*Table 1: The campaign's budget (Fofola, 2015; Dáš si mefloun?, 2016)*

- **Background**

*Phase I (2015)*

The bestselling packaging of Kofola is 0.5 l pack, for which the primary target group are young people aged 16-24. The traditional Kofola is associated mainly with love, but for this type of packaging, the attributes such as enjoyment of life and playfulness are more substantial, since the target group is younger and hence funnier, more active, and crazier. The key needs are refreshment, breaking an everyday life stereotype, inducing a feeling of joy, happiness, and immediacy. In the market segment of half a litre beverages, Coca-Cola dominates, whose market share is more than 50%, whereas the long-term business goal of Kofola was to obtain a market share at the expense of just that product. (*Fofola*, 2015)

*Phase II (2016)*

The products of Kofola are divided into several market opportunities: 1. Kofola for household consumption, 2. Kofola for public catering and 3. Kofola for travelling. It is the third group that encompasses 0.5l pack which is the bestselling impulse format of the portfolio and onto which also the campaign focuses. Despite the fact that in the given segment, Coca-Cola still has the largest share, its dominance is determined historically. The share of Kofola developed positively year-on-year and it grew also thanks to the effective communication support and the business strategy from the previous year. In 2016, Kofola introduced a novelty beverage Melon, which should have supported tactically the growth of the entire portfolio of 0.5l format. A key task was not only to continue with a positive market share gains and to repeat the success of the previous campaign, but also to overcome it. (*Dáš si mefloun?*, 2016)



### 3.2 Campaign Goals

#### *Phase I (2015)*

- **Sales targets:**
  - launch a product novelty Apricot 0.5l and meet the planned sales volume X1 hl
  - meet sales targets of the whole 0.5l format and thus continue with the positive growth of the entire category, i.e. to sell Y\* hl
  - increase the rotation of the entire portfolio of the product line = more frequent purchase of 0.5l Kofola
- **Communication objectives:**
  - increase KPI attributes of the brand:
    - o spontaneous awareness of the brand Kofola - increase to 73%
    - o awareness of Kofola brand based on interviews – maintaining the level of 99%
    - o spontaneous awareness of the advertisement - increase to 30%
    - o awareness of the advertisement based on interviews - increase of 50%
- **On-line communication objectives:**
  - integral watching of online videos at the level of 15% (benchmark YT leaderboard)
  - Facebook - increase of 15k in the number of fans

*(Fofola, 2015)*

#### *Phase II (2016)*

- **Sales targets:**
  - launch a product novelty Melon 0.5l and meet the planned sales volume X\* hl
  - meet sales targets of the whole 0.5l format and thus continue with the positive growth of the entire category, i.e. to sell Y\* hl, i.e. to even the record result Z\* hl of the campaign Fofola in sales
- **Communication objectives:**
  - recording of the campaign in the target group 18-30 years old: 30%
  - identification of the brand in the target group of 18 to 30 years old: 70%
- **On-line communication objectives**
  - Integral watching of online videos at the level of 15% (benchmark YT leaderboard)

*(Dáš si mefloun?, 2016)*

### 3.3 Communication and creative strategy for the campaign

#### *Phase I (2015)*

With respect to the young target group, the concept was designed from the beginning in such manner that it would primarily operate in the online environment. Therefore, the form was not focused on the classic TV spots, yet on online videos, due to which the television level worked even better. In order to achieve the desired spread of the positive emotion of playfulness, the character of a narrator of the campaign was proposed. The most important thing was to ensure that the narrator is not felt as a seller of the product, but rather as a medium, which integrates the campaign and provides premises so that the campaign becomes generally popular and viral. To maintain the active attention of the young target group, it was necessary to bring new content often and to phase it within the communication timeline. When choosing the communication channels the online one was preferred, for which the unique and exclusive content, never appearing before within ATL channels, was generated.

As the main character of the campaign, the creators chose a dog Tuna – an animal internet celebrity, which is recognized throughout the world and in our area it is popular mainly with the young audience. A unique and at the same time easy-to-track character was written for the

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<sup>1</sup> The exact values are subject to trade secret

dog, which resulted in a lovable mischief, which the viewer has caught while he is making a fuss. Except other things, also lisping is typical for the dog, while because of this insight, the unique language of the entire campaign originated – so called Fofolština. With respect to the objectives of the campaign, it was necessary that the brand was incorporated directly in the story. The dog used the catch-phrase "Wanna Fofola?", by which he tried to divert attention from the bizarre situations, resulting in a very effective product campaign. Simple humour was used in the campaign, bringing the brand closer not only to its target group but also to the whole region presented in the series story, and being developed in short videos and prints. The selection of the online celebrity allowed the reverse teasing when people themselves but also media generated the additional content around the dog and his story. (Fofola, 2015)

#### *Phase II (2016)*

A key task was to capitalize on the potential of Fofola concept. When proceeding, it was necessary to emphasize the novelty beverage with a melon flavour, while at the same time it was fundamental to shift the storyline in such a manner that it surprised the fans again. In the campaign storytelling, another character was introduced – Mister Meflón. He became the best friend of the lisping dog and together they experienced summer adventures, which lead to an unexpected perishing of Mister Meflón. To those situations the dog reacted with an altered catch-phrase from the initial wave "Wanna Melon?". The campaign was started by a teasing video, which occurred on Facebook, YouTube, and Instagram to announce the return to the concept. Thus, the first advertisement of another advertisement was created. In fact, the recipients could see Mister Meflón across all channels - TV, online, and even in-store promotions, due to good utilization of Mister Meflón. Digital enthusiasts could even watch the first videos via Snapchat from the perspective of a dog. (*Dáš si mefloun?*, 2016)

### 3.4 Campaign results

#### *Phase I (2015)*

|                                                 | <b>Set goal</b>                                                                           | <b>Achieved result</b>                            |
|-------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Sales targets</b>                            | launch of a product novelty<br>Apricot 0,5l (X hl)                                        | X hl + 25%                                        |
|                                                 | meet sales targets for 0.5l format and continue<br>the positive growth of category (Y hl) | Y hl + 5%                                         |
|                                                 | increase the portfolio rotation<br>= more frequent purchases                              | increase in sales of<br>Kofola by 35.4%           |
| <b>Communication<br/>objectives</b>             | spontaneous brand awareness<br>- increase to 73%,                                         | increase to 78%                                   |
|                                                 | brand awareness based on interviews<br>- maintaining the rate at the level of 99%         | the campaign meet the<br>set goal                 |
|                                                 | spontaneous awareness of the advertisement<br>- increase to 30%                           | increase to 50%                                   |
|                                                 | advertisement awareness based on interviews<br>- increase to 50%                          | increase to 70%                                   |
| <b>On-line<br/>communication<br/>objectives</b> | integral watching of online videos<br>- achieving the level of 15%                        | achieving the level of<br>71%                     |
|                                                 | Facebook - increase of the number of fans of<br>about 15,000                              | increase of the number<br>of fans of about 29,525 |

*Table 2: Results of Phase I of the campaign (Fofola, 2015), own processing*

The impact of the campaign on the sales targets affected also the development of the entire market segment of 0.5l cola type beverages. The purchases of these impulse formats take place

mainly within the channels: grocery stores, and gas stations. Except the fact, as seen in *Table 2*, that the portfolio of Kofola 0.5l pack experienced the growth of up to 35.4%, it is needed to mention that the total sales volume of 0.5l cola type drinks in the mentioned channels recorded a year-on-year increase of 8.8%. The decrease in the sales volume of the main player, Coca-Cola, by 10% was also important. The campaign worked in the online environment and in the period from May 13 to June 31, 2015, the videos counted the total of 6,949,460 views, taken together for Facebook and YouTube, while 4,937,679 of them were integral ones. (*Fofola*, 2015)

*Phase II (2016)*

|                                         | <b>Set goal</b>                                                                                                                    | <b>Achieved result</b>        |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Sales targets</b>                    | launch of a product novelty<br>Melon 0,5l (X hl)                                                                                   | X hl + 3%                     |
|                                         | meet sales targets for 0.5l format continue<br>the positive growth of the category (Y hl)<br>and reach the sales of Apricot (Z hl) | Y hl + 5%<br>Z hl + 6%        |
| <b>Communication objectives</b>         | advertisement awareness in the target group<br>of 18-30 year old<br>- increase of 30%                                              | increase to 40%               |
|                                         | brand awareness in the target group of 18-<br>30 year old<br>- increase to 70%                                                     | increase to 98%               |
| <b>On-line communication objectives</b> | integral watching of online videos<br>- achieving the level of 15%                                                                 | achieving the<br>level of 31% |

*Table 3: Results of Phase II of the campaign (Dáš si mefloun?, 2016), own processing*

Again, the campaign was a great success in the online environment and the advertising spots, counted together on YouTube, Facebook, and Instagram reached 5 million views. The spots reached up the level of 87% of watching from the beginning to end, indicating the popularity of stories in advertisements. The campaign also dominated Leaderboard, the YouTube chart. All 6 spots were placed among 10 most popular videos of Czech Internet for the second half of 2016. Specifically, these places were the 2nd, 4., 5., 6., 7., and 8th. The further evidence of the popularity of the campaign were also more than 51,218 interactions in total on Facebook. Moreover, the content published on Snapchat was successful because during one month it reached up to 21,500 views in total. The campaign also had a positive impact on the growth of the community of fans of social networks, i.e. Facebook and YouTube. During the campaign, the profile Kofola was on the first place of the fastest growing Czech sites within Facebook for the Czech Republic and on 2nd place concerning YouTube. (*Dáš si mefloun?* 2016)

| <b>Campaign</b>            | <b>Award</b>                      |
|----------------------------|-----------------------------------|
| <b>Fofola 2015</b>         | EFFIE Slovakia - gold             |
|                            | EFFIE Czech Republic - gold       |
|                            | The EACA Euro Effie Awards - gold |
| <b>Dáš si meflón? 2016</b> | EFFIE Slovakia - shortlist        |
|                            | EFFIE Czech Republic - shortlist  |

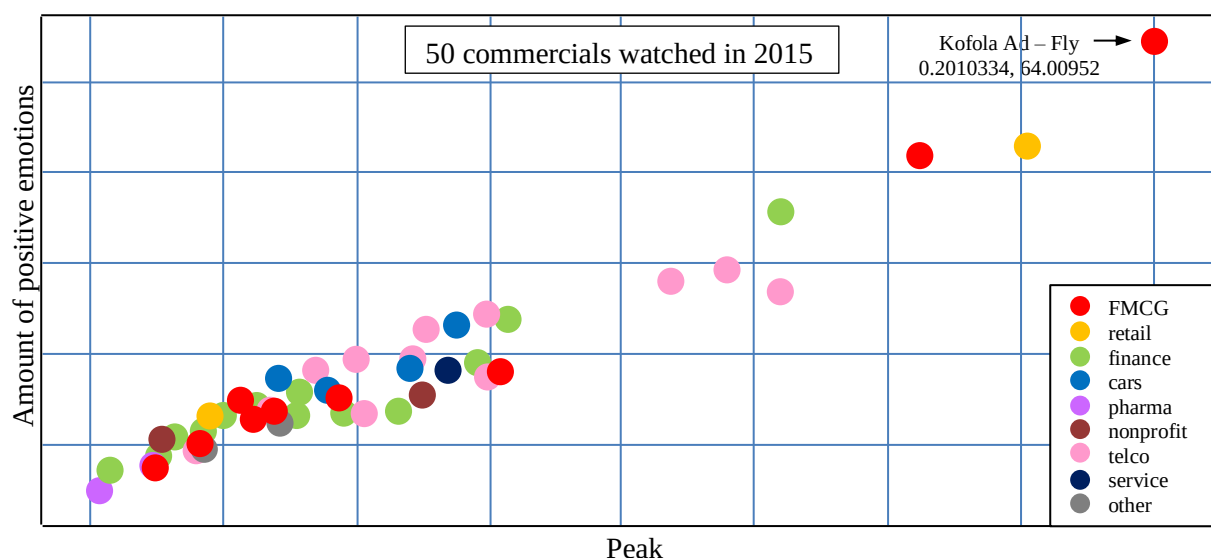
*Table 4: Awards for Kofola campaigns, own processing*

Besides the results themselves, the effectiveness of the campaigns is affirmed by the awards for effectiveness - EFFIE, which they received. The most important award is undoubtedly Euro

Effie thanks to which the agency Zaraguza became the first Slovak agency in history that managed to transform a shortlist into gold in European context of this award granting.

### 3.5 Emotions, a character and a story in the campaign

The last year's event Marketing Festival 2016, which is the largest educational marketing event in Central Europe area, was also attended by Michal Pastier, as a speaker – a co-owner and creative director of the agency Zaraguza. Within 10 years in advertising, he has won more than 100 awards for his work in various well-known campaigns. He became the youngest winner of FILIP award for an outstanding contribution to Slovak advertising and also became the first Slovak who was granted the award in the category of Cyber Young Lions from Cannes Lions, the most prestigious advertising festival in the world. He gives lectures not only at professional conferences but also at Slovak universities. Michal is the creator of concrete solutions, strategies, scenarios, and copy-text. He participated creatively on the development and implementation of concepts of both campaigns of Kofola. His lecture at Marketing festival was devoted to the matters of creating intriguing stories, characters, and the reason of their successfulness. The effectiveness of Kofola campaigns is not reflected only in gained achievements, but its creators also verified its likeability by measuring the emotions that occurred while the respondents were watching the spots.



Graph 1: Emotion ID results (50 sledovaných reklám za posledných 12 mesiacov, 2016)

In Graph 1, the overview of the most watched commercials, ordered by a degree of induced positive emotions, is provided. The evaluation criterion was the level of involvement with which the respondents concentrated on the advertisement and at the same time showed whatever emotions (Hrnčárová, 2016). The measurements were carried out by the software Emotion ID on a sample of 200 respondents selected by a quota selection. The target group constituted a representative sample of Slovak population aged 18-69. The data collection took place during the whole year 2015 via an online panel research of 2Muse agency. The research material consisted of 50 commercial spots created by Slovak advertising agencies that were selected in monthly Evaluation of Strategies during the year 2015. The Strategies is a magazine and news server, which is the only body in Slovak market that offers a professional view at media, marketing and advertising market in Slovakia and abroad (Stratégie, 2017). The commercial spots were aimed at promoting the following product categories: FMCG, retail, finance, cars, pharma, non-profit, telco, and others. The graph clearly shows that undoubtedly most positive

emotions and at the same time the highest rate of involvement was reached by one commercial spot of the advertising campaign Fofola 2015, specifically called Fly. Even the correlation between the number of views and the level of likeability was confirmed, in the sense that the more times the respondents saw the advertisement the more they liked it.

According to unfiltered reactions on the faces of the audience, the emotional curve of joy surged to a super bowl level and surpassed all previously monitored Slovak commercial advertisements (*Stratégie*, 2017).

According to Michal Pastier (2016), the success of Kofola campaigns resulted from several starting points. The first important principle is a well-built character of the central hero. Pastier illustrated the argument by a story about an animal hero from Japan. It was a racing mare Haru Urara, who became famous in 2003 when she had already encountered almost a hundred losses, which earned her the nickname "shining star of all losers." She did not win but she liked it when pictures were taken of her, and soon massive PR was unleashed around her.

People gradually began to bet on her, while the bet tickets were taken as talismans protecting them from evil forces. When the people saw the horse Haru Urara, they felt happy and were willing to buy all the objects with which were linked with her thematically. According to Pastier (2016), people prefer losers to winning favourites, who, despite all setbacks, keep trying. This fact helps, to a significant extent, to scriptwriters, for example, and is a frequent leitmotif of films made by Pixar. Another important aspect of a believable character is its motivation. In advertisements, we can often meet with dysfunctional characters, having unclear motivations, so as a result they do not work. As stated by Pastier further on, an animator, filmmaker, and cartoonist Chuck Jones, the creator of more than 200 cartoons of Looney Tunes series, created a list of limitation rules for his characters, which formed distinctive legibility of their personalities and clear motivation. In case the character is well established, then it is possible to build around it the whole world and plot. According to Michal Pastier (2016), the same was also true for the case of Kofola.

To create a series of successful advertisements it was necessary to find the proper incentives for the main dog protagonist. In terms of a story of advertisements, it is common that the authors want to avoid boredom in communication, and therefore in one campaign more advertisements with various epic modifications appear. This strategy is generally referred to as recurrence. The producers can alter the argumentative attributes of the message, while the means of expression (e.g. colour, graphics) do not change, or vice versa, the expressive components are changed and the message components remain the same (Schumann, Petty and Clemons, 1990). The narrative advertisements always unfold around a particular intrigue, while the variation of the story (in order to reach recurrence) can be accomplished by changes in the intrigue. The first strategy is to maintain the core of the story, while the setting or characters are changing, and the second strategy consists in telling a coherent story in several parts (Escalas, 2004).

In case of the commercial spots of Kofola, the argumentative attributes of the message, the core of the story, and the main character were preserved, while the means of expression and the setting were changed. Having a good character is the foundation, but equally important is the construction of the story. Michal Pastier (2016) in this regard pointed at the so-called peak-end rule (Fredrickson, Kahneman, 1993), by which the human subjective assessment of a concrete experience is based on a climax moment and the end of the whole experience rather than on the overall assessment of the experience or on its average moment. It is the same with advertisements. It is their climax and end that can significantly affect not only how people enjoy them, but also the overall assessment of a brand and its awareness. Kofola commercial spots were built on precisely this principle. The software Emotion ID, which Zaragusa agency used

to analyse the advertisements, tracked also the intensity of positive emotions in terms of time horizon of individual spots.

The opening scene, in which the spectator becomes familiar with the setting, is neutral and for those who have already seen the spot it acts as an emotional anchor. The climax of the advertisement is the apologetic message of the dog "Wanna Fofola?", by which he tries to divert attention from the mischief caused by him. The highest point of happiness is the pack shot at the very end of the spot, when the whole joke fades away in the viewer's head. Furthermore, the measurement also showed that the largest intensity of experience is obvious for those who saw the spot more than 6 times, average for those who saw the spot less than 6 times, and lowest for spectator novices (Pastier, 2016).

#### 4. CONCLUSION

The company Emotion ID, during the years 2014-2016, underwent measurements of more than 150 Slovak advertisements and Fofola came out best of them (Gablíková, Baránková, 2016). The feelings of happiness that this campaign raised can even be compared with the achievements of the most successful advertisements abroad. It represents a clear evidence that the use of proper principles, such as building up a believable character and solid plot, are the prerequisites for obtaining positive emotions from spectators.

Then, the emotions can, to a great extent, influence the likeability of advertisement and consequently guarantee the efficiency in terms of economic indicators and financial return.

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## CELEBRITIES IN SOCIAL ADVERTISEMENT: PSYCHOSOMATIC PERSPECTIVE

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### ABSTRACT

*Research study identifies cognitive aspects of subjective perception of social phenomena of using celebrities in social advertisement. Theoretical starting points of the study accentuate persuasive/recommendatory models of using the celebrities in marketing communication and theoretical concepts of self in specific area of perception of social advertisement by adolescents. By using the psychosomatic methods – qualitative content analysis of essays with subject "Celebrities and social advertisement" and test of semantic selection (author modified) – we were inquiring about subjective perception of adolescents concerning using celebrities in social advertisement. Results point out a critical approach of adolescents to using celebrities in social advertisement.*

**Keywords:** *Adolescents, Celebrity, Marketing communication, Self, Social advertisement*

### 1. INTRODUCTION

The main focus of social marketing is social change. Its goal is to establish an opinion and change behaviour for a social benefit (Kotler, Zaltman, 1971, p. 3). Marketing thus gains a positive connotation since its tools can be used for establishing positive social changes. One of the marketing communication strategies is the use of a celebrity as an endorser (Erdogan, 1999, p. 291). This strategy seems very effective in relation to the specific target audience - adolescents. Celebrity as socializing models and role models in marketing communication have a specific relationship to adolescents for a number of reasons - transition from being identified with one's parents to own autonomy or role model imitation (Fandelová, Kačániová, Štrbová, 2016, p. 10). Adolescents identify with the celebrities up to the measure they prefer to be the celebrities themselves and not the idea of becoming the celebrity's partner, family or a friend (Adams-Price, Greene, 1990, p. 193). Modern adolescents accept mainly celebrities who have reached their success by their own means (Vrabec, Petranová, 2013, p. 26) and such a situation can lead to adolescents identifying with the celebrities. There is no unanimity in about celebrity endorsement in research papers. Although adolescents identify with the celebrities (Adams-Price, Greene, 1990, p. 193), there is no impact of celebrities in the context of buying decision (Ghani, Kakakhel, 2011, p. 79). In fact, celebrities attract attention of adolescents so that they watch the commercial (Chan, Zhang, 2007, p. 139) and also celebrities a charities, each other congruent, have a positive impact on the attitudes and can lead to up to the level of donation intentions (Ilicic, Baxter, 2014, p. 205). In context of social advertising, donations are not always important, but what can be important is the change of attitude to a socially discussed topic. Celebrity, in the process of identification with an adolescent, can have an impact on attitude formation or can bring a change in the adolescent (for example, against LGBT rights, waste separation, extremism and so on).



## 2. RESEARCH DESIGN

Methodological concepts deal with branding vary and contain numerous points of view (see Du Plessis 2011, p. 98; Keller, 2007, p. 220; and others). Within the scope of applying the brand quality concept in social or non-commercial advertising we find relevant the concepts of brand quality perception. We need to evaluate the aspects such as: credibility, responsibility, solidarity, charity, communicativeness together with the activity of the participants and the concept of brand associations. The mentioned concept reflects the concepts used in critical social psychology – psychosemantic methods that enable investigation of subjective understanding of social representations, social concepts in marketing research (Plichtová, 2002, p. 81; Urbánek, 2003, p. 22; Hendl, 2005 p. 125). Based on the above mentioned facts, we have focused on the adolescent perception of celebrity endorsement in non-profit marketing – in social advertising in Slovak context. With regard to the character of the research we prefer triangulation approach (theoretic and methodological triangulation) with the preference of qualitative approach and we lay out the following broad research questions:

**RQ1: How do adolescents view celebrity endorsement in social advertising?**

**RQ2: How do adolescents understand terms celebrity and social advertising in relation to the self?**

The goal of the research was to identify adolescent discourses in the relationship between celebrities and social marketing concept as well as anchoring the terms celebrity and social advertising in the adolescent semantic space in relation to the self. The stated goal and the findings to the research questions were carried out via identifying adolescent discourse fields in relation to celebrities and socially responsible marketing and by adolescent semantic maps within the scope of the terms celebrity and social advertising in relation to the self.

## 3. STUDY 1

### 3.1. Research method

Interpretation analysis plays an important role when analyzing media communicates especially in connection with phenomenology tradition, semiotics and structuralism. The aim of the communicate analysis is not categorization of its units but its comprehension, uncovering its denotations, deconstructing its inner architecture, structure, explicit and implicit claims, revelation of the relationship with other texts and structures and so forth (Plichtová, 2002, p. 125). Using gentle interpretation methodology deeper and hidden structures are being revealed. Many intentions of the author are uncovered and particular argumentative structures are highlighted. A high level of openness and very thorough analysis of particular media contents is a typical quality of the method (Schulz, 2004, p. 34). It was not a priority to include quantification in the qualitative analysis. The conclusion in qualitative analysis does not follow a strictly defined procedure, it is more flexible. We have opted for a specific essay content analysis method - so called hermeneutic analysis - to operationalize the research bottleneck of the matter. Hermeneutic analysis (active comprehension of the meaning in relation to the whole communicate) is more holistic and intuitive and is often related to interpretation. It is exactly subjectivity that comes most frequently as an objection for an in-depth qualitative methods. Major strength of the approach, however, is the possibility to bring and show new possibilities, ways of explanation and discovering the facts. Such an understanding does not have and cannot have explicit rules, however, it has its value. Hermeneutic circle forms the basic principle of hermeneutics. It is a circular movement of understanding that starts with a basic acquaintance with the text (pre-comprehension) which forms a base for a more subtle analysis of particular parts of the text. Hermeneutic comprehension is thus constantly being revised (Hendl, 2005, p. 125).

### 3.2 Research file

The research file consisted of university students of Marketing Communication at the Department of Media Studies (19-23 years of age, N=68). Data collection took place in the summer term of the school year 20015-16 at the Faculty of Arts at the University of Constantine the Philosopher in Nitra.

### 3.3 The results

Based on the qualitative interpretation analysis of the essays focused on "Celebrity and social advertising topic" we conclude that the term celebrity is anchored in the adolescent semantic field with notion of recognition, public response, awareness, admiration, idol and popularity in the dominant position. We have also noted partial anchoring in relation with the terms: everyone, ephemerality, star, superfluity. Adolescents consider celebrity endorsement in social advertising to be eligible and highly effective, only a small proportion of the students has an explicitly negative and critical attitude (popularity abuse, ineffective approach). Most frequently mentioned examples of a suitable celebrity endorsement in social advertising include projects with a quality media support. It is highly interesting that adolescents mention only examples from Slovak marketing environment that can strengthen local preferences within the scope of social advertising: Avon against cancer, An Hour for the Kids, Good Angel, Take a Ball Not Drugs, A Dog in Distress, Blue From the Sky (Avon proti rakovine, Hodina deťom, Dobrý anjel, Zober loptu nie drogu, Pes v núdzi, Modré z neba). In terms of comparison with celebrities, Slovak adolescents are able to identify international as well as local celebrities (Mikuláš, Chalányová, 2016, p. 140). From the point of view of the notions contained in the essays of the adolescents, we consider as significant those responses that bear literary signs of literary essay (approximately 1/4 of the essays) – they applied rhetoric questions, polemics, intended to capture the topic from several angles. Semantic relation between a celebrity and social advertising was seen in three aspects:

1. Adolescents accented a certain symbiotic/reciprocal relation between the effectiveness of a marketing message and reputation (image enhancement / PR) of celebrity brand. A significance transfer between a celebrity and a brand takes place (Erdogan, 1999, p. 302), thus in the context of social advertising a celebrity accepts publicly and socially responsible behavior and positive values are transferred onto the celebrity. On the other hand, there is a risk for a brand in socially irresponsible behaviour of a celebrity which can have an impact on the perception of social advertising (White, Goddard, Wilbur, 2009, p. 322). Despite the abovementioned, the adolescents consider celebrity endorsement to be effective (this can be caused by the fact that the participants are media students and are acquainted with the context), in the scope of moral dilemma reflect higher moral consciousness (moral and charitable aspect of the social message is more important than celebrity endorsement). The discourse could be generalized as: **Celebrity endorsement in social advertising is mutually advantageous.**
2. Adolescents reflected a controversial aspect of celebrity endorsement in social advertising - their payment/ flat fee. From their point of view, the problem is that this aspect is not well communicated. They even express a suspicion that the fee might be concealed. According to the research done by Kelly et al. the motivation of celebrities to participate in socially responsible projects can root in the context of helping the others (altruistic motivation) as well as financial and non-financial benefits (egoistic motivation). Only seldom do celebrities take part in socially responsible projects to raise self-awareness (Kelly, Morgan, Coule, 2014, p. 57). Despite that, the respondents understand this type of motivation in the context of negative connotation. This shows that the aspect (no fee for the

celebrity) is a key aspect in acceptance/non-acceptance of a celebrity in social advertising and can be an important dimension of celebrity perception. The discourse can be generalized as: **Celebrity in social advertising should not get a financial reward.**

3. The adolescents attitude towards social themes and the harmony between personal life and social values communicated are the criteria for the acceptance and the effectiveness of a celebrity in social advertising. The congruence between a celebrity and the message transmitted help to build a higher credibility (Choi, Rifon, 2012, p. 639). Experiments prove that a functional congruence between a celebrity and, for example, charity has a positive impact on the attitude towards celebrity and to the organization up to the level of donation intentions (Illicic, Baxter, 2014, p. 205). The discourse can be generalized as: **A celebrity in a social advert ought to be socially oriented and authentic.**

That said, the adolescents perceive a celebrity in socially responsible marketing within certain dimensions: for a celebrity endorsement to be effective, it is essential that the endorsement in charitable projects has free of charge character as well as the celebrity has to be socially responsible in other aspects of their personal life. The adolescents view critically a certain reciprocal relation between a celebrity and social themes.

## 4. STUDY 2

### 4.1. Research method

To identify social representation of celebrities and social advertising in the semantic space of the adolescents we applied a psychosemantic method Semantic Choice Test (SCT). In SCT we focus on the view a participant has on the self and the people and things surrounding him/her (Urbánek, 2003, p. 22). Each object has a particular place in the environment according to its significance for the respondent. SCT works with two types of elements that we shall call prompts/terms a attributes/pictures. Both elements are from the participants point of view full of significance. Participant assigns the attributes to particular terms based on his/her own judgement, feelings, associations. In the original SCT version the role of attributes is performed by 16 semantic pictures (*house, flower, water, sun, lips, fish, eye, boat, moon, dagger, security bars, grave, cobweb, snake, security bars, worm*). In our - modified version the participants were to select between 4 and 8 pictures that characterize particular terms/ prompt words. In the operationalization part of the research we have based the selection of prompt words on theoretical concepts of effective celebrity endorsement (Erdogan, 1999, p. 291; Erdogan, Baker, Tagg, 2001, p. 43) and preceding empirical findings about subjective perception of celebrity endorsement efficacy in social advertising (essay analysis). In our modification of SCT we proposed to monitor mutual relationships (semantic maps) of the terms stated:

- Terms with the affinity to media and marketing: *image, brand, social advertising, commercial advert, non-profit organization, Facebook, Instagram, social networking.*
- Terms with the affinity to effective / ineffective communication: with positive connotation: *solidarity, opportunity, attractiveness, excitement, responsibility, expertise*; with negative connotation: *hatred, self-interest, profit, manipulation, lie.*
- Referential terms: *I, friend, follower, celebrity, idol, Adela Banášová, Lukáš Latinák, Andrej Kiska, Eudovít Štúr.*

The choice of particular celebrities followed their popularity in the show biznis (Adela Banášová, Lukáš Latinák), high popularity of the president of the Slovak Republic (Andrej Kiska) and specific endorsement of a historical figure (Eudovít Štúr) in a socially responsible marketing (see <https://www.youtube.com/watch?v=7DNQVcXFaxM>).

## 4.2 Research file

### 4.3 Results

For the significance level lower than 0.001, we dismiss the null hypothesis of independence of the terms and objects and we accept the alternative hypothesis that terms and objects are dependent. 15 dimensions were extracted in correspondence analysis, for a clearer visual representation we will continue further with only two dimensions. The first dimension contributes with 0.12 value, that makes approximately 54 % inertia, the second dimension contributes with 0.035 value, creating around 16 % inertia, altogether approximately 70 % of the overall inertia. The correlation of the two extracted dimensions is close to zero ( $r=0.029$ ).

Figure 1: The perception of celebrities and social advertising was evaluated by correspondence analysis (own data processing)

1. **Positive ideal self concept quadrant.** The results show a significantly positive self concept of the adolescents in the file because "I" is anchored in the quadrant containing the following symbols: lips, sun, fish, sailing boat, water, flower. It is characteristic of the quadrant that self concept of the ideal "I" is perceived positively – close concepts idol, celebrity, image, expertise, social networking and popular celebrities - Adela Banášová, Lukáš Latinák copy the social pressure placed on socially desirable adolescent image. Image is the closest to the concept of "I". The closeness hints the importance of image in adolescents (Simmons, Rosenberg, 1973, p. 553). The presence of the term celebrity as well as two observed celebrities demonstrate the importance of models and role models in adolescence as defined by Fandelová et al (Fandelová, Kačániová, Štrbová, 2016, p. 10). Lukáš Latinák as a celebrity has the closest position to "I" which is the closest position to the term idol. Identification with a celebrity can be close to the self perception because people prefer similar individuals in their vicinity (Chalányová, 2016, p. 47; referenced by Ross, 1971; Kinch, 1963; Cordier, 2014). Both Adela Banášová and Lukáš Latinák can be perceived as celebrities that have reached their success by their own means. That is a highly valued asset by the adolescents (Vrabec, Petranová, 2013, p. 26). The term ugliness also points to a high measure of acceptance from the side of adolescents (Vrabec, Petranová, 2013, p. 33), therefore it appears in the quadrant of positive ideal self concept. At present, the distance between celebrities and adolescents is decreased thanks to the era of celebrities that enables also a common person to become a celebrity (Collins, 2008, p. 87). At the same time, celebrities are accessible thanks to the social media. Adolescents can request friendship from a celebrity on Facebook. The celebrity can confirm such an interaction thus decreasing the distance between the celebrity and an adolescent.
2. **Mostly positive real self concept quadrant:** The term friend (we had pre assumed an interpersonal dimension of a close relationship as compared to the mostly virtual relationship with a celebrity) is anchored in the quadrant together with the terms house and tree that confirms the above stated claims. Close terms attractiveness, opportunity are in an ambivalent position to the terms hatred and self-interest that can reflect the desire for a deep friendship as well as social frustration caused by a disappointment in friendship in the observed stage of adolescence. A positive anchoring of the terms non-profit organization, Instagram and Ľudovít Štúr in the mentioned quadrant bring an interesting finding.
3. **The area of desired and undesired self concept** represent the remaining two quadrants. In the quadrant of the remote negative concept there are the following symbols: snake, cobweb, worm, moon together with the terms follower, profit, brand and responsibility. The quadrant of the rejected close/real anchors the symbols security bars, dagger, grave and the terms commercial advert, manipulation, lie, Andrej Kiska and the limit position of the term Facebook can be noted as well. A celebrity presence of Andrej Kiska close to the symbols of security bars, dagger or grave can point to the Vrabec and Petranová research findings in which they identified mistrust towards politicians and other public representatives (Vrabec, Petranová, 2013, p. 19). From the point of view of marketing communication, both commercial and social advertising was identified in this quadrant. Their closeness in the quadrant can reflect that in terms of terminology the adolescents perceive social and commercial advertising identically. It was interesting to follow the distance between commercial and noncommercial advertising. In such a terminological distinction a clearer disparity could be observed. Social advertising can share the connotation with the term advertising on social networks (Bačíková, 2017, p. 4) that is proved by the closeness of the terms Facebook and social advertising. Facebook has a negative connotation since it is positioned close to the term lie. A negative connotation for the social network Facebook

has already a number of research explanations. At the very beginning, the registration on Facebook is determined by the 13 year-of-age limit which puts younger children in front of a dilemma whether to lie about their age or not to use Facebook at all (Danah, Hargittai, Schultz, Palfrey, 2011, p. 1). Lies are henceforth present when using the social network. In the analysis of the behaviour and subsequent confrontation we have found out that a lie is a relatively frequent element in self representation or communication with other users (Underwood, Kerlin, Farrington-Flint, p. 1624) and in the end the time spend on Facebook timeline aggravates the mood. Eventually, it is perceived negatively (Sagioglou, Greitemeyer, 2014, p. 361).

Therefore we can say that the adolescents perceive the term celebrity with a positive connotation in relation to the self while the "I" is also perceived in a positive way. Even though non-profit organizations are perceived more positively than negatively in relation to the "I", social advertising itself has a rather negative connotation.

## 5. CONCLUSION

The objective of the research was to identify the discourses of adolescents related to the relationship of celebrities and social marketing concept via essay analysis and their perception of the terms celebrity and social advertising in the relation to the self by the means of semantic maps. The results of the research show that adolescents reflect celebrity endorsement in social advertising as mutually advantageous not only for the bearer of social responsibility but also for the celebrity itself. The relevance of a celebrity is based on its own identity related to authenticity and social orientation that being confirmed also by previous research (Choi, Rifon, 2012, p. 639; Ilicic, Baxter, 2014, p. 205). However, adolescents also put a great emphasis on celebrity effectiveness based on whether they are being paid for the advertisement. For the purposes of social advertising, they absolutely decline celebrity payment. It would be interesting to follow this aspect within the scope of international research.

The test of semantic selection pointed mainly at positive perception of the "I" of an adolescent. In such a positive ideal self concept the term celebrity and the celebrities selected appear close. Non-profit organizations that are the administrators of social responsibility (Džupina, Džupinová, 2016, p. 18) were perceived more positively than negatively. On the other hand, social advertising was in many cases viewed negatively in cases of non-profit marketing communication.

The research was limited by a relatively small research file that is however acceptable as far as the methods and triangulation methodology are concerned. The research file consisted of students with some knowledge of marketing communication or applying to study this study area. They are equipped with a certain reflection towards celebrities as marketing communication strategy that can cause a significant distortion in their perception - whether in the concept of commercial or non-commercial advertising.

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## ENERGY EFFICIENCY PROJECTS OF BUDGET BENEFICIARIES AND ITS IMPACT ON REGIONAL ECONOMY

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### ABSTRACT

*Local and regional government (further: government) have multifunctional scope. Its activities are limited primarily by financial resources, which highlights the major principle of "good government" that involves selection of projects and programs with best investments effects. In times of economic downturn, criticism and expectations of public opinion is focused primarily on governments' ability to, through the carried-out projects and programs, not only create, but also stimulate economic growth. It is questionable how and how much the implementation of energy efficiency projects affects the regional economic growth. Knowing that on European, national and regional level significant financial resources are planned for energy efficiency project, made us believe that inefficiency could be chance for justified investment projects that could have impact on economic growth. The key research questions addressed in this paper are: 1) what are the range of benefits from energy efficiency for regional economic growth, 2) what is the value of investments and payback period, estimated employment and environmental effects of energy efficiency projects after renewal implementation and 3) what are the main policy remarks (challenges) of energy renewal implementation. After defining economic effects of energy efficiency projects, energetic and environmental impacts of implemented energy efficiency projects in seven budget beneficiaries of Osijek-Baranja County of The Republic of Croatia have been analyzed. Results have led to conclusions and defining policy remarks about impact of those projects on regional economic growth.*

**Keywords:** Energy efficiency, Economic impact, Cost-benefit analysis

### 1. INTRODUCTION

Importance of energy efficiency has been challenge to scientist who tried to provide scientific evidence of energy efficiency projects impact on macroeconomics, environment etc. The scope of interest in this multidimensional theme is defined by scientific fields. Visibility of energy impact on the economy comes from the fact that the EU evolved from the European Coal and

Steel Community. Nowadays, around 100 billion euro per year is needed to meet the EU's 2020 energy efficiency target. The International Energy Agency - IEA (2016, p. 13) point that global energy intensity improved by 1.8% in 2015, surpassing the 1.5% gain seen in 2014, and tripling the annual rate (0.6%) seen in the previous decade. The IEA estimates that global investment in energy efficiency was 221 billion American dollars in 2015, an increase of 6% from 2014. Investment in efficiency was two-thirds greater than investment in conventional power generation in 2015 (IEA, 2016, p. 15). Most simplifying improvement of energy efficiency projects is detected very shortly by IEA (2016, p. 17): efficiency improvements in IEA countries since 2000 have saved enough energy to power Japan for one year. Nearly 40% of final energy consumption (as well as 36% of all greenhouse gas emissions) is attributable to housing, offices, shops and other buildings across the public and private sector (Paulou et al, 2014, p. 13). To achieve the 20% energy efficiency target by 2020 requires investment of 100 billion euro per year, 70% of which needs to be directed to buildings (Paulou et al., 2014, p. 21). Analyzing the role energy sector on economy, group of authors have recognized and proved that energy, energy efficiency and energy consumption is precondition for the development of competitiveness and development of the entire economy (Čapek et al., 2016). Economic analysis of energy efficiency project includes employment, investments, and effects of economic branches on GDP and on public debt (especially when public buildings are considered). Implementation of energy efficiency projects as a way of direct investing has a direct effect on macroeconomic indicators.

There is also the second circle of induced, so called, multiplicative effects. Income from labor and capital, created in activities connected to construction investment, are spent in second, third and further "circles" of consumption, which affects overall economic activity. Influence of the program of integral buildings renewal to new job openings can be seen through two effects: 1) direct creation of job openings in construction sector, which depends on the reaction of employment on new investments in construction sector and 2) indirect implication which opens additional jobs in overall economy, which depends on boosted growth of GDP and reaction of employment in overall economy (UN, 2015; LTSMI, 2014; EU, 2014; Department of Energy and Climate Change, 2012; IEA, 2011). Implementation of projects of energy renewal, due to number and structure of buildings that need to be included into measures of integral renewal, as well as continuity of their conduction, can contribute to stabilization and increase of economic activity. Three scenarios are defined, which have effect on economic activity, employment and GDP based on three different multiplicative effects: 1) low: 1,2; 2) middle: 1,5; and 3) high multiplier (enclosure 5).<sup>1</sup> So, the key started research domain are: 1) to examine literature of regional economic impact of energy efficiency projects, 2) to detect and analyze the range of benefits from energy efficiency for regional economic growth, 3) to explore the value of investments and payback period, estimated employment and environmental effects of energy efficiency projects after renewal implementation and 4) to try provide main policy remarks (challenges) of energy renewal implementation into regional development strategies.

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<sup>1</sup> Income (labor and capital) that are created through direct participation in investment activities create a multiplier effect on the new demand and value added in the economy, in the long-term strategy are estimated multiplier effects on gross domestic product by using three scenarios: low multiplier = 1.2 (the overall effect the GDP 20% higher than the value of the investment), middle multiplier = 1.5 (overall effect on GDP 50% higher than the value of the investment), a high multiplier = 2.0 (overall effect on GDP 100% higher than the value of the investment).

## 2. ASSESSING THE ECONOMIC IMPACT OF ENERGY EFFICIENCY PROJECTS: REVIEW OF THE LITERATURE

*"Perhaps the next goldmine" - UNEP, 2009*

The use of 'energy efficiency' - high efficiency technologies, infrastructure and processes, alongside demand reduction and retrofit strategies - can play a vital role in reducing the energy intensity of economic activity, avoiding the need for significant new supply, while at the same time reducing reliance on imported fuels and exposure to energy price volatility (UNEP, 2009, p. 17). UN (2015) define best practice policies for energy efficiency like: 1) operational policies which includes policies for households (e.g. certification, minimum energy performance standards and so one), transport policies (e.g. fiscal policies for transport, standards, eco driving, low energy modes) and business sector policies (e.g. energy management, ISO 50001, SMEs, innovation and so one), 2) policies for utilities to enable all sectors, 3) cross-sectoral: governance e.g. (e.g. enabling frameworks, strategies, plans and targets, agencies, cities and regions and so one) and 4) cross-sectoral: finance (e.g. loans finance public-private finance, funds guarantees, risk sharing, tax) (see for more: UN, 2015, from p. 20). As Sanstad and Howarth noted (1994a, p. 817), the debate between 'engineering' and 'economic' approaches to energy efficiency in fact involves an underlying conflict over economic principles. To resolve this conflict, technology analysts must acknowledge that empirical findings are meaningful only when linked to a well-articulated theoretical framework. Similarly, economists must recognize that theoretical assertions are meaningful only if they stand up to empirical scrutiny. There are different ways to improve energy efficiency: 1) innovation can lead to the equal or greater output with less energy, 2) cutting out wasted energy reduces energy needed while maintaining output and 3) heating technologies, such as heat pumps, can deliver greater output for less supplier energy (Department of Energy and Climate Change UK, 2012) (see also Table 1). Economic effects reflect through measurable effects of increased construction activity in GDP, employment and budget income. Benefits of implementation of integral buildings renewal which is in its basis represented by projects of energy efficiency are divided into:

- 1) Direct effects: stabilization and economic activity growth, employment, increased budget income, human health improvement, decrease of energy poverty and increase of real-estate value.
- 2) Complex connections: decrease of poverty due to employment, decrease health cost due to better population health, incensement of flexible stability, wealth effect: higher consumption due to increase in real-estate values and reduction of grey economy.
- 3) Indirect effects: tourism development, increased quality of life and strengthening of financial stability.

*Table following on the next page*

*Table 1: Attributes of innovations that support adoption decisions, with examples from studies of residential energy use (Wilson and, Dowlatabad, 2007)*

| Attribute from diffusion of innovations                                                               | Example of attribute in a residential energy context                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Relative advantage over the incumbent technology or practice (e.g., more convenient, flexible, cheap) | Cost savings, personal comfort, and family health from weatherization measures (Darley JM, Beniger JR. 1981; Brown MA. 1984)                                                                                                                           |
| Compatibility with existing needs or problems, prevailing social norms, and behavior                  | Energy efficiency is unattractive if framed as a major deviation from behavioral norms (Dennis M, Soderstrom EJ, Koncinski WS, Cavanaugh B. 1990)                                                                                                      |
| Complexity, i.e., the skills, capacity, and effort required to adopt an innovation                    | A perceived barrier to solar photovoltaic adoption (Farhar BC, Coburn TC. 2000)                                                                                                                                                                        |
| Trialability, e.g., whether innovations can be tested prior to adoption                               | Peer experience or social feedback is important to reduce uncertainty about irreversible weatherization measures (Darley JM, Beniger JR. 1981); conversely, clock thermostats can be tested in situ (Becker LJ, Seligman C, Fazio RH, Darley JM. 1981) |
| Observability, e.g., whether innovations are highly visible (to potential adopters)                   | Solar technologies have greater normative appeal than less visible measures such as home insulation (Archer D, Pettigrew T, Constanzo M, Iritani B, Walker I, White L. 1987)                                                                           |

But, in a review of energy efficiency standards for appliances, Hausman and Joskow (referenced by Gillingham, Newell and Palmer, 2006) list several inherent weaknesses to consider in any evaluation of standards: 1) although the minimum energy efficiency of appliances can be mandated by standards, actual energy use is determined by much more uncertain consumer behavior, including issues such as the rebound effect; 2) uniform national standards do not seem well suited to a country with substantial differences in weather characteristics and energy prices and do not allow for heterogeneity in consumer tastes for energy-using services and appliance choice (e.g., for a consumer who needs air-conditioning only a few days per year, purchasing an inexpensive model with low-energy efficiency may be cost-efficient) (see also: IDFC, 2013; Sanstad and Howarth, 1994). Also, consumers can be aware that their impulse to consume now impacts negatively on their long-term self-interest. At the household level, framing and reference dependence mean that income and budgeting decisions may be assigned to different “mental accounts” (see for more: Thaler, 1990). Although some skeptical authors, many others assume that energy efficiency have much more benefits than “cost-threats”. As Gillingham, Newell and Palmer (2009, p. 598) noted, one must distinguish between energy efficiency and economic efficiency. Maximizing economic efficiency—typically operationalized as maximizing net benefits to society—is generally not going to imply maximizing energy efficiency, which is a physical concept and comes at a cost. An important issue arises, however, regarding whether private economic decisions about the level of energy efficiency chosen for products are economically efficient. This will depend on the economic efficiency of the market conditions the consumer faces (e.g., energy prices, information availability) as well as the economic behavior of the individual decision maker (e.g., cost-minimizing behavior). Le Den et al. (2016, p. 6) pointed that the broad range of objectives to which energy efficiency investment can contribute has been an important argument in favors of allocating public funding but the downside is that the range of objectives can make it more difficult for public authorities to set clear success criteria, and design transparent evaluation mechanisms.

## 2. 1. Why energy efficiency matters and what about buildings?

European Climate Foundation (2016, p. 12) noted that a 40% energy efficiency target could trigger over 714 billion euro of investments in the European economy, more than twice the amount expected to be generated by Juncker's investment plan (315 billion euros). It would also create or maintain over 11 million jobs, equivalent to almost half of the number of Europe's unemployed. To track the progress of mandatory energy efficiency policies, the IEA has developed the Efficiency Policy Progress Index (EPPI). The EPPI measures progress in both coverage and strength of mandatory energy efficiency policies (IEA, 2016, p. 73). At world level, the residential sector shows the greatest EPPI improvement at 15% (improvements in space heating and cooling, water heating, and appliances standards). Transport had the second-highest EPPI improvement, driven by fuel efficiency standard tightening in the United States, the European Union and Japan, but also progress was noted in non-residential buildings (IEA, 2016, p.73). From 2005 to 2015, the EPPI increased by 7% on average across all countries evaluated. France, Germany and the United States saw the largest increases in their national EPPI. Buildings have an impact on long-term energy consumption. Given the long renovation cycle for existing buildings, new and existing buildings that undergo major renovation should therefore meet minimum energy performance requirements adapted to the local climate. Clearly, the best moment for the introduction of energy efficiency measures is when the buildings undergo major renovation (approx. every 25-40 years) (COM, 2008, in: BPIE, p. 9). Progress in France and Germany was marked by an expansion of buildings-focused efficiency policies. For example, The City of Berlin with several partners saved 11,342,334 euro of 1,300 public buildings, reduced 67,874 tons of annual CO<sub>2</sub> and average energy saving/energy cost savings were on the level of 26%. The ESCO<sup>2</sup> pays for the retrofit upfront and building owners pay them back over an agreed period (usually 8 to 12 years in annual investments from the energy-cost savings. Typically, around 80% of the annual savings are paid to the ESCO and the other 20% are the direct gain of the City of Berlin (BPIE, 2010, p. 28). The UK Energy Efficiency Strategy (2012, referenced by Payne, Weatherall and Downy, 2015, p. 231) identifies investment in energy efficiency as key to supporting long term growth in the UK and the sector has been estimated by Government to be worth more than 25,6 billion euro, supporting 136,000 jobs (BIS, 2013, referenced by Payne, Weatherall and Downy, 2015, p. 231).

Many studies which use Computable General Equilibrium (CGE) or macro-econometric models suggest that there are significant potential impacts of energy efficiency programs on output ranging from 0,8% to 1,3% of GDP (IEA, 2012, in: Cambridge Econometrics et al., 2015, p. 16). Using an input-output approach, Laitner et al. (2012, referenced by Cambridge Econometrics et al., 2015, p. 16) estimate that energy consumption could be reduced by 42% relative to a business-as-usual (BAU) case and efficiency savings could increase GDP in 2050 by 0.3% above the BAU. Employment because of investments in building sector is susceptible to many outside factors. Barker and Foxon (2008, referenced by Cambridge Econometrics et al., 2015, p. 17) calculate that cumulative impact of the boost to growth resulting from energy efficiency policies in UK for the period 2007 to 2010 was estimated to have increased employment by 0,8% (or 271,000 jobs) in 2010. American Council for an Energy Efficient Economy (ACEEE) study found that investments in energy efficiency create jobs in labor-

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<sup>2</sup> Each EU Member State prepared its National Energy Efficiency Action Plan which describes the energy efficiency improvement measures planned at national level to achieve the energy savings target of the EU Directive. An "energy service company" (ESCO) is a natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing.

intensive industries, such a construction – and Bell (2012, referenced by Cambridge Econometrics et al., 2015, p. 17) calculated that 1-million-dollar investment supports, on average, 20 construction jobs (resources required to employ a person for 12 months or 2 persons for 6 months each and so one) compared to just 14 in the less labor-intensive manufacturing sector or 17 as a whole supports (ACEE, on-line, 2011). Copenhagen Economics (2012, referenced by Cambridge Econometrics et al. 2015, p. 19) estimated that, by achieving the potential for energy efficiency renovation in buildings in 2020, EU Member States may achieve total annual benefits worth up to 175 billion euro for public finances with an additional 'one-off' boost to GDP in the range of 153 billion euro to 291 billion euro for the years up to and including 2017 (see also Appendix, Table 1). It is important to note that energy efficiency related jobs are not simply to detect (for example: green goods and services; green technologies and practices; clean economy; green industries; green construction sector; environmental products and services) especially because data on employment are usually aggregate ore available for intermittent years over the marked period (of course, the EU NACE classification is based on the ISIC and is the same as NAIC classification used in the US, but also in every member state of EU). At the local and regional level, co-benefits arise from making buildings more energy efficient and these include health improvements to residents, alleviation of fuel poverty, as well as job creation and retention for tradesmen and service engineers (Paulou et al., 2014, p. 22). The implementation of energy efficiency measures can be complicated, lengthy and require significant financial resources. Also, according to Scherrer (2010, referenced by Mihić, Vučković and Vučković, 2012, p. 62), the projects in the public sector are more complex than the projects in the private sector due to numerous limitations and difficulties. The general objectives of energy efficiency project in public buildings are an expression of contribution of the project to the community development, primarily in the areas of improving the country's energy balance, environmental protection and higher level of social welfare. Specific objectives are primarily related to the realization of the project within the given constraints: duration, resources, costs and quality of energy efficiency measures. Buildings are responsible for the largest share of European final energy consumption (40%, Enerdata, 2012 referenced by EEFIG, 2014) and they represent the greatest potential to save energy - as 75% of buildings standing in the EU were built during periods with no, or minimal, energy-related building codes (Risotri, 2013, in: EEFIG, 2014). Buildings are long-term assets expected to remain useful for 50-100 years (COM 2008, in: EEFIG, 2014) and three quarters of those standing today are expected to remain in use in 2050 (COM 2012, in: EEFIG, 2014). Although increased value of real-estate is not the primary goal of implementation of energy renewal public buildings projects, investing into buildings represent the growth of real-estate values. Like is in Interim Report (EEFIG, 2014) noted, energy efficiency investments in public buildings are unique in that the public owner can perceive both the energy savings, productivity and value improvements normally accruing to the owner (as for private owners) as well as the public goods of increased employment, reduced emissions and improvements to public accounts. In principle, public buildings share many of the benefits of commercial buildings (size, energy intensity, concentrated ownership, professionalized facilities managers) but face additional challenges of more cumbersome procurement procedures, potential split incentives between different divisions responsible for procurement and for the energy bills, balance sheet restrictions and limitations under public accounting rules (EEFIG, 2014, p. 13). From the earlier stated examples, it is possible to notice that merely conducting the projects of energy efficiency represent satisfying number of conditions. Consequently, accept of direct influence on building sector, there projects affect employment in production of new materials, in sector of designing, energy certification, education etc. These effects are not possible to express directly, but they are necessary assumption of their conduction. Per Long-term strategy (MCP, 2014) among other or indirect benefits stand out: 1) **positive effects on tourism development**: renewed

buildings, especially their fronts, can have positive effect on attracting and recovering tourists into larger cities, especially the ones throughout Adriatic coastline, whereby with renewal of buildings in tourist centers connect adaptations which lead to increase of attractiveness and/or increase of objective building quality which provide some form of tourist or hospitality services; 2) **quality of life**: beauty as well as tidiness and/or maintenance of architecture is important factor of subjective satisfaction of live in cities and municipalities, which positively affects conduct of people and 3) **increase in financial stability**: increased part of reconstructions in constructions activities decrease fluctuations of construction and overall business cycles as well as real-estate prices, which directly contributes to financial stability; favorable financial incentive schemes which connect to funding programs of building renewal increase protection of consumers of financial products and services, and prevent misunderstanding of financial contracts, excessive financial fluctuations etc. (Duklić, 2014). But, as Smithwood and Hodum (2013, p. 14) noted, we also must consider barriers to developing more projects: 1) lack of information (both consumers and building owners are unaware of their energy consumption and do not recognize the full value of energy efficiency; 2) split incentives (the building owner pays for the energy efficiency upgrade while the tenant benefits from the reduction in operating expense); 3) capital and first cost (upfront borrowing costs and capital expenditure often pose a hurdle to investment); 4) limited tenancy or ownership structures and 5) utility disincentives to deploy energy efficiency (energy sold vs. energy saved). And what about Republic of Croatia? In the Long-term strategy (MCP, 2014), it is estimated that, depending on the strength of multiplicative effects ending with 2019 through there project bring opening of 23 to 29 thousand new jobs, while in overall period of renewal, ending with 2049 overall effect could be from 62 to 102 thousand new jobs (LTSMI, 2014). Evaluation of direct effect for Republic of Croatia is based on regression analysis which connects values of new orders in building sector with number of employed. The elasticity of employment, i.e., change in the number of employed in building sector in relation to investments (new orders) is estimated by parameter 0.4. Which means that 10% nominal increase of investments in building sector affects the number of jobs for 4%. The result needs to be taken with a dose of caution, because it is the case about simple regression equation, but in the lack of better model this kind of purpose can be used as a basis for long-term assessment (LTSMI, 2014). Assessment of fiscal effects of energy renewal project implementation predicts induced overall state income in permanent proportion of 38% of conducted investments. Furthermore, in relation to investment multiplier it will come to increased level of economic activity in relation to 2013. In first period to 2020 program of integral renewal should bring to increase of GDP between 2.1% and 3.6% while increased activity could bring to overall state income grow between 0.8% and 1.4% in relation to GDP from 2013. In the last period of implementation of the program GDP for the average of the period could increase 10% to 17% in relation to 2013 (LTSMI, 2014).

### **3. COST-BENEFIT ANALYSIS (CBA) OF ENERGY EFFICIENCY PROJECTS: CASE OF OSIJEK-BARANJA COUNTY**

Improving energy efficiency in regional government can produce energy, environmental, economic, and other benefits, including: 1) reduce GHG emissions and other environmental impacts, 2) reduce energy costs, 3) increase economic benefits through job creation and market development, 4) demonstrate leadership, 5) improve indoor air quality and productivity in energy-efficient and green building, 6) engage the regional community (for more see U.S. Environmental Protection Agency, 2011). The area of this study represents investments of Osijek-Baranja County in buildings that are owned by or buildings of budget beneficiaries which the County is founder and/or over which it has founding rights – public buildings. Consequently, in the following will be analyzed effects of implementation of energy efficiency



projects in public sector. In the implementation of public building energy efficiency projects, CBA<sup>3</sup> identifies costs relating to the following activities: 1) identification and analysis of a public building's characteristics; 2) preparation and production of project documentation; 3) procurement of consents and permits, procurement of materials and equipment, construction works, insurance of equipment; 4) materials, devices, installations, etc.; 5) paying interests for loans; 6) promotional activities aimed at raising citizens' awareness level regarding energy efficiency; 7) maintenance during project implementation and 8) procurement of certificates for a public building's energy efficiency system (Mihic, Vuckovic and Vuckovic, 2012, p. 62). As Mihic, et al (2012, p 922) mentioned, CBA aims to identify and evaluate costs and benefits during and after the implementation of energy efficiency projects. This analysis can include a variety of costs and benefits that financial analysis does not consider. By adding noneconomic benefits to the process of calculating the said criteria, we can see the bigger picture when it comes to the efficiency of public building energy efficiency projects. This is the main contribution of CBA to improving the efficiency of projects from this field (Mihic, et al, 2012, p. 928). Unfortunately, in designing programs it is essential that managing authorities (government) assess the particular barriers affecting the renovation market in their region or country as: 1) financial barriers (limited access to finance, relatively long pay-back periods, competing priorities for property owners), 2) institutional and administrative barriers (regulatory and planning issues), 3) information and awareness barriers (but also household behavior, see Clinch and Healy, 2002.), 4) the issue known as the "split incentive" facing landlords and their tenants as well as other investors and which leads to a disconnect between those making the investment and those benefiting from the energy savings (Paulou et al., 2014, p. 32) but also 5) ecosystem complexity and 6) uncertainty and irreversibility (Hanley and Splash, 1993, p. 21).

The base of conducting CBA of energy efficiency projects presumes validating earlier defined effects (direct, indirect and complex connections) in relation to needed costs of their implementation. Osijek-Baranja County in its budget has costs needed for their implementation. Question arises to which extent through them are achieved earlier stated effects, and how those reflect on economy development? National renovation roadmaps require: 1) an overview of existing building stock based on statistical data, 2) a package of cost-effective renovation measures both for energy efficiency and renewable energies, based on an appraisal of the existing building stock and 3) an appraisal of the required investments to implement such measures (Paulou et al., 2014, p. 25). Consequently, a sample of seven schools have been chosen, for whose project implementation was made compiling report of rational use of energy that contains data on current consumption reported in kwh and equivalent in Kuna's, as well as in consumption after completed work. In the example, we consider part of the schools that were registered in 2010 for Environment protection and energy efficiency Fund competition. As the conditions of the competition were co-financed projects for the replacement of primary energy source and / or reconstruction of the outer front (replacement of exterior doors + thermal insulation of external walls). For this contest applicants were not motivated to apply comprehensive solutions for several reasons:

- 1) In conditions of competition was defined maximal amount which applicant can achieve, that was generally sufficient for conducting just one type of work (replacement of primary energy resource and/or reconstruction of outside front).

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<sup>3</sup> CBA has a long history. The United States federal water agencies (Bureau of Land Reclamation and the U.S. Army Corps of Engineers) was the first to make use of CBA (Hanley and Splash, 1993, p. 4). As early as 1808 Albert Gallatin was recommending the comparison of costs and benefits in water-related projects. Development of both research and practice has been relatively slow in Europe. In the UK, CBA applications have been largely transportation based, starting in 1960 (Hanley and Splash, 1993, p. 7). See also: Clinch and Healy, 2002.

- 2) Applicant could apply for up to two projects.
- 3) Although Osijek-Baranja County as a priority of energy renewal highlighted institution that were based in areas of special State care since for them, by terms of competition, was possible to achieve co-financing up to 80% of acceptable costs, County had to secure 20% from original funds, but also the difference of necessary costs for implementation of investment which were not covered by Fund.

In continuation, and analysis of expected effects was conducted before implementation of projects. The sample covers elementary and high schools that are in Osijek-Baranja County (Gymnasium Beli Manastir, First high school Beli Manastir, Elementary school Secerana, Elementary school Popovac local schools Branjina and Kneževo, Elementary school Bilje and Elementary school Jagodnjak) in areas of special State care (Baranja region). For stated buildings, it was conducted preliminary inspection within which, per opinions of technical profession (construction, engineering and electro technical) was determined validity of energy renewal implementation. In schools was conducted reconstruction of heating system, i.e., replacement of primary energy resource from oil to gas. Analyze (Appendix, Table 2-5) shows **consumption before the completion of work, after the completion of work and decrease of consumption after completion of work**. Analyze shows how in average estimated savings were between 9.69% up to 32.97% in relation to current consumption. Following the economic effects most significant was expected reduction of expenses of energy sources, presuming achieving the same degree of comfort, as well as unchanged prices of energy resources of current and future state after the completion of work. The total estimated financial savings in the first year after implementation of the project were from 27.35% to 45.88%. At the same time, further significant financial indicator is payback period of the investment. The statistical payback period was from 7.36 years at the First high school in Beli Manastir, to 46 years in elementary school Popovac regional school Branjina. At the same time, the payback period of paid costs based on completed situation was from 3-17 years. It is important to notice significant differences in the values of investment projects and the value of investments after the final payment, which in some cases were up to 70% of the investment. These significant differences are the result of unified procurement carried out by the Osijek-Baranja County, purchasing criteria economically best offer, as well as the current economic situation which is characterized by relatively little work in the construction sector, for which the companies registered to perform this type of work are forced to offer the lowest prices to get a job and ensure the survival of the market. At the same time, significantly higher statistical payback period compared to actual return on the investment resulted of the poor conditions in which the objects were found before conducting of process of energy renewal. **The economic effects are reflected in the number of employees in the realization of these projects.** The analysis includes all persons directly employed in the construction sector (designers, control and physical persons responsible for the implementation of mechanical and electrical works). Although the estimated number of individuals employed as a contractor was from 15-17, in the analysis is listed 15. Overall, the estimated number of employees in the implementation of projects in these seven schools was 137 people. **Very significant are environmental effects of these projects.** Total expected reduction in CO<sub>2</sub> emissions is 106.977.07 kg, which is on an annual basis for all seven buildings 24.87% less emissions. Estimates of savings vary between 16.63% - to 32.97%. For the analysis of this type, it would be advisable to conduct further analysis of objects per the predominant purpose and the number of beneficiaries, and carry out a comparative analysis before and after the implementation of the projects. Ignoring the impact of implementation of these projects on the gray economy, because action counties as regional self-government that issued the account as the basis of payment, and it is not possible payment of any investments that opened space for the gray economy. The impact of the implementation of energy efficiency projects in the real estate prices is the effect corresponding to the value of the investment, but

energy regeneration is not carried out with the aim of increasing the value of the property, because the goal is not sold on the market, and even assuming marketing, currently, due to the low level of activity in the real estate market, this value is not a guarantee to achieve higher prices for real estate. In conclusion, based on the analysis of effects of the implementation of energy efficiency projects in seven buildings owned by the county budget beneficiaries achieved positive effects, and has established the economic viability of investments. Only these effects are given below.

Table 2: Cost –benefit analyses of selected projects (authors)

| <b>BENEFITS</b>                                                                                        |                                                                           |                                                                                          |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Reducing energy consumption                                                                            | Kwh/year                                                                  | EUR/year                                                                                 |
|                                                                                                        | 283.733,12 kWh                                                            | 22.485,49                                                                                |
| Total funds invested                                                                                   | The original assets                                                       | Fund for EPEE                                                                            |
|                                                                                                        | 104.360,50 EUR                                                            | 313.081,60 EUR                                                                           |
| The increase in property values                                                                        | Accounting                                                                | Real                                                                                     |
|                                                                                                        | 417.442,19 EUR                                                            | 645.893,31 EUR                                                                           |
| Expected cost reduction improvements                                                                   | Up to 5% of annual maintenance costs                                      |                                                                                          |
| Employment                                                                                             | 137 direct employment during project implementation                       |                                                                                          |
|                                                                                                        | Induced employment<br>(construction material, trade, grocery stores etc.) |                                                                                          |
| Reducing emissions                                                                                     | Kg/year: 106.977,07                                                       | % reduction in relation to the consumption prior to implementation of the project: 24,87 |
| Better quality working conditions; The realization of national energy goals                            |                                                                           |                                                                                          |
| <b>COSTS</b>                                                                                           |                                                                           |                                                                                          |
| The cost of investment (principal) for a period of 7 years, with an interest rate of principal         | Principal                                                                 | Interest                                                                                 |
|                                                                                                        | 104.360,55                                                                | 19.870,15                                                                                |
| Opportunity cost (lost income from interest on term deposits for a period of one year at a rate of 3%) | 104.360,55                                                                | 12.523,27                                                                                |
| Generated from the production of building materials for the installation of the estate                 |                                                                           |                                                                                          |

#### 4. CONCLUSION

*“Being ambitious on energy efficiency is the central plank of our long-term energy security strategy”  
- EU Climate and Energy Commissioner  
Miguel Arias Cañete, European Climate Foundation, 2016*

Although energy efficiency programs represent a legal obligation, their importance at national, regional and local level is much broader. Adoption of energy efficiency is basic (some sort of “must have”) for the implementation of EU Energy policy. At the same time on the regional level, their role is multiple:

- 1) Contribution to the achievement of European and national energy goals;
- 2) Creating the assumption for financing energy efficiency projects (for the implementation of any measures and activities adequate financial resources provided);
- 3) Informing regional and local legal entities that project activities designed can be co-financed and / or which can achieve financial benefits; C
- 4) Creates conditions for strengthening local and regional economy through: the launch of economic activity, reduction of the economic and energy poverty etc.

Based on the analysis of economic, energy and environmental impact of energy efficiency projects on seven object owned by budget beneficiaries of Osijek-Baranja County, it is possible to determine significant effects of these projects on the economy. The sample covers elementary and high schools that are in Osijek-Baranja County in areas of special State care. Cost-benefit analysis has included current energy consumption, energy consumption after completion of work, planned savings, energy consumption before construction work, after the execution of works and reduced consumption in euros, value of investments and payback period (planned and per final payment), estimated number of employees by the facilities and CO<sub>2</sub> emission before and after the implementation of investment. Though exact quantification on GDP is not possible (due to duration of investments that do not overlap with investments), its existence is undoubtable. Due to energy policy implementation and the realization of commitments at national and regional level most of the energy efficiency projects have so far been investments in public sectors (schools, hospitals, etc.). However, the significant potential could be achieved through projects directed towards small and medium enterprises. Focusing on projects of improving the energy efficiency of the private sector would affect the growth of their competitiveness and further contribute to economic growth. However, energy efficiency projects have great potentials but cost-benefit analyses should be baseline for setting priorities. Finally, according to the value and multiple benefits of energy efficiency projects, it is necessary to: 1) improve the legislative and policy frameworks (but also institutions) for energy efficiency projects, 2) improve knowledge and sensitiveness of policy-makers, entrepreneurs, financial institutions, regional authorities and consumers for importance of energy efficiency projects, 3) improve tax policies for energy efficiency subsidies and 4) reduce institutional barriers and personal prejudices for developing skills for building/constructing industries.

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## APPENDIX

Table 1: Overview of study findings of direct rebound effects  
(Cambridge Econometrics, 2015:21)

| Study                 | Scope       | Summary of direct rebound effects                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sorrell (2007)        | EU          | For household heating and cooling, the direct rebound effect is estimated to be between 10% and 30%. This includes behavioral and technical effects. For personal automotive transport, it is estimated to be closer to 10%.                                                                                                |
| Allan et al. (2006)   | UK          | A long-term rebound effect of 31% from a 5% improvement in energy efficiency across all UK production sectors, including primary energy supply.                                                                                                                                                                             |
| Barker et al. (2009)  | Global      | Installing EE measures lowers domestic energy bills and results in higher disposable incomes, which can be spent elsewhere in the economy, while businesses see a reduction in running costs and so an increase in productivity. The rebound effect can ultimately be as high as 50%, once indirect effects are considered. |
| DECC (2013)           | UK          | For any heat consumption reduction measure, or renewable heat pump or insulation measure, the savings are adjusted by 15% to allow for comfort taking (the reduced cost of running appliances means they will be run more often).                                                                                           |
| Lee and Wagner (2012) | US          | Empirical research using US data on fuel efficiency shows that the rebound effect exists. It ranges from 1% to 10% in the short run and 5% to 30% in the long run.                                                                                                                                                          |
| CE et al. (2011)      | EU          | Vehicle fuel-efficiency reduces the cost of motoring but, in the long run, will lead to an increase in demand, thus offsetting the initial gains.                                                                                                                                                                           |
| ACEEE (2012)          | US          | Consumers moderately increase operating hours after they install efficient lights, with a range of 5-12%. There is limited evidence of rebound effects in industrial sectors.                                                                                                                                               |
| Jin (2007)            | South Korea | Based on estimates of the price elasticity of residential electricity use, the long- and short-term rebound effects were estimated at 30% and 38%, respectively.                                                                                                                                                            |

*Table 2: Energy consumption in EUR before construction work, after the execution of works and reduced consumption in EUR (authors)*

| Public building                                 | Energy consumption before works (kWh) | Energy consumption after works (kWh) | Energy consumption reduction (kWh) | Reduction in comparison with actual consumption % |
|-------------------------------------------------|---------------------------------------|--------------------------------------|------------------------------------|---------------------------------------------------|
| Gymnasium Beli Manastir                         | 30.578,72                             | 24.150,41                            | 9.791,96                           | 32,02                                             |
| I Secondary school Beli Manastir and sportshall | 26.651,54                             | 19.075,15                            | 10.561,36                          | 39,63                                             |
| Primary school Bilje                            | 32.154,64                             | 24.041,19                            | 11.811,24                          | 36,73                                             |
| Primary school Jagodnjak                        | 9.552,34                              | 6.939,70                             | 2.612,64                           | 27,35                                             |
| Primary school Popovac district school Branjina | 940,70                                | 630,56                               | 310,15                             | 32,97                                             |
| Primary school Popovac district school Knežev   | 13.688,92                             | 9.403,25                             | 4.285,67                           | 31,31                                             |
| Primary school Šećerana                         | 26.755,81                             | 17.414,45                            | 12.274,46                          | 45,88                                             |
| Total:                                          | 140.322,67                            | 101.654,71                           | 51.647,47                          | 36,81                                             |

*Table 3: The value of investments(EUR) and payback period (planned and per final payment) (authors)*

| Building                                        | Investment per project | Return period on project (year) | Investment per final situation | Return period on real value of works (year) |
|-------------------------------------------------|------------------------|---------------------------------|--------------------------------|---------------------------------------------|
| Gymnasium Beli Manastir                         | 178.756,02             | 18,26                           | 0,00                           | 0,00                                        |
| I Secondary school Beli Manastir and sportshall | 77.729,21              | 7,36                            | 42.754,54                      | 4,05                                        |
| Primary school Bilje                            | 145.983,49             | 12,36                           | 111.834,37                     | 9,47                                        |
| Primary school Jagodnjak                        | 63.225,18              | 24,20                           | 30.062,37                      | 11,51                                       |
| Primary school Popovac district school Branjina | 14.373,80              | 46,34                           | 5.564,03                       | 17,94                                       |
| Primary school Popovac district school Knežev   | 62.769,39              | 14,65                           | 35.659,55                      | 8,32                                        |
| Primary school Šećerana                         | 103.056,23             | 8,40                            | 45.379,62                      | 3,70                                        |
| Total:                                          | 178.756,02             | 18,26                           | 0,00                           | 0,00                                        |

*Table 4: Estimated number of employees by the facilities (authors)*

| Building                                         | Project manager | Monitoring | Builder | Total: |
|--------------------------------------------------|-----------------|------------|---------|--------|
| Gymnasium Beli Manastir                          | 4               | 2          | 15      | 21     |
| I Secondary school Beli Manastir and sports hall | 3               | 2          | 15      | 20     |
| Primary school Bilje                             | 4               | 2          | 15      | 21     |
| Primary school Jagodnjak                         | 2               | 1          | 15      | 18     |
| Primary school Popovac PŠ Branjina               | 2               | 1          | 15      | 18     |
| Primary school Popovac PŠ Kneževo                | 2               | 1          | 15      | 18     |
| Primary school Šećerana                          | 4               | 2          | 15      | 21     |
| Total                                            | 21              | 11         | 105     | 137    |

*Table 5: CO2 emission (kg) before and after the implementation of investment (authors)*

| Building                                        | CO2 emission before works | CO2 emission after works | Reduction of CO2 emission | Reduction in % |
|-------------------------------------------------|---------------------------|--------------------------|---------------------------|----------------|
| Gymnasium Beli Manastir                         | 92.421.62                 | 77.047.73                | 15.373.89                 | 16.63%         |
| I Secondary school Beli Manastir and sportshall | 80.552.04                 | 60.856.00                | 19.696.04                 | 24.45%         |
| Primary school Bilje                            | 92.722.93                 | 71.164.26                | 21.558.67                 | 23.25%         |
| Primary school Jagodnjak                        | 31.277.07                 | 22.722.55                | 8.554.52                  | 27.35%         |
| Primary school Popovac PŠ Branjina              | 7.534.48                  | 5.050.37                 | 2.484.11                  | 32.97%         |
| Primary school Popovac PŠ Kneževo               | 44.821.40                 | 30.788.91                | 14.032.49                 | 31.31%         |
| Primary school Šećerana                         | 80.867.22                 | 55.589.87                | 25.277.35                 | 31.26%         |
| Total:                                          | 430.196.76                | 323.219.69               | 106.977.07                | 24.87%         |

*End of the paper*



## TRANSITION COUNTRIES IN THE GLOBALISATION PROCESS – RESIGNATION TO THEIR FATE OR LATE AWAKENING

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### **ABSTRACT**

*Both in the daily politics as well in the academic economic literature, the globalisation process is too readily equated with the process of stepping up the economic integrations in the world, achieving a „new world order“ etc. Moreover, the idea is that the current „system“ is working and that all we need to address is only the "issue" of how to further foster the functioning of the world's economy, as the only possibly economy. Without denying the existence of the global system, we believe that this is merely the "sweet talk" of the many advocates of the neo-liberal concept, Washington consensus and other so-called hyper-globalists. Globalisation is a complex historical and social phenomenon which has marked our era and whose mechanism should be further and deeper investigated, especially when it comes to the current positions and development perspectives for the less developed countries. Our intention in this paper is to seek an answer to the question of whether, and if so, how, the former socialist, generally less developed economies can survive in the conditions of the ever more intense globalisation and the widening gap between the developed and the undeveloped countries, as well as between the rich and the poor, both globally and within individual countries. The courses of action to be taken are but a few: they can either resign to their fate or put their past behind them. Basically, this would be a late awakening with the necessary reprogramming of the current models, which, in our opinion, requires a new development paradigm based on knowledge and reinstalling the concept of (re)industrialisation.*

**Keywords:** *Globalisation, Transition, New economy, Competitiveness, Reindustrialisation*

### **1. INTRODUCTION REMARKS**

Despite the impression that the today's networked economy offers equal opportunities for everyone, it is evident that we are facing an ever growing gap between the few developed, rich countries, and the far more larger group of the less developed ones, most of which are still in transition. At the same time, from the economic point of view, there is no doubt that the East lost the match against the West a long time ago and that, over time, the gap in development and wealth in general has increased. With this in mind, it is logical to assess that most countries in transition are formally not socialist but that they are in the process of mentally entering socialism. This poses a question we shall seek to answer in the paper: *has, and if yes, to what extent, globalisation affected the said negative processes and phenomena (cause-and-effect relation) at a national level, especially when it comes to the small and less developed economies?* Furthermore, another issue we might raise in this context is the following – *can those countries, and if yes, how, attempt at breaking up with their past in the conditions of the ever more intense globalisation by means of a new development paradigm?* For pragmatic reasons, we shall pose the key question at the very start of this paper – it is a question which the ancient philosophers posed in similar contexts and one which globalisation, bearing in mind its inherent complexity, deserves – what is the today's reality for the possible development of the countries in transition, and what is the illusion? Let us start with the fact that the globalisation of the economy and the society as a whole has become a dominant feature of the contemporary capitalism as well as a determinant of success at a global level. Although it has been significantly "updated" as of late, it is a process which has lasted for centuries, as argued by A. Smith and K. Marx; it is a process related to the capitalist modernisation and the expansion of the capitalist system and production relations, which have continued to be some

of the determining factors of modern time (Kelner, 2003). There are many obvious examples and reasons that point to the conclusion that globalisation, under the veil of globality and universality, guided by the "*invisible hand*", is on its way to engender new forms of imperialistic domination. Namely, the expansion, deepening and accelerating the interdependence in all aspects of the modern society (e.g. from culture to crime, from finance to cultural and national spirituality), the development of the global financial markets and the real estate market, the growth of the multinationals and their domination over national economies etc., have made us contemplate on the possibility of finding an optimum level of globalisation (e.g. *smart globalisation*).

## 2. GLOBALISATION BETWEEN MYTH AND IMPOSED REALITY

Operating in modern conditions definitely requires a deeper understanding of the matrix of global trends and local strengths, the strengths of domination and resistance, as well as the conditions under which fast changes have taken place as part of the "great reconstruction" of the world order. "As recent as yesterday, the global order seemed so distant and alien, as if it was taking place in another world, as if it was happening to some other people. Today already, it has become a new destiny, an invisible force driving our daily lives" (M. PečujLić). On the other hand, when it comes to globalisation, it has been shown that various national, corporate and informal group structures, which may be termed *elites*, bearing in mind their wealth and power, have been oppressing and limiting the individuals. Much more than the so often criticised states, the said structures have controlled and limited our freedoms, as well as underestimated, blackmailed, coerced and minimised the individuals. Let us add that in the early 70's the developed Western countries invested great efforts into neutralising the so-called *new international economic order*, which the newly liberated undeveloped countries had tried to established with the aim of distributing the resources more fairly, i.e. towards the *periphery*.

The globalisation of the economy has actually become a dominant feature of contemporary capitalism and a proven measure of success at the global level (C. Jessua, 2008). For the purpose of this paper, we shall simply define globalisation as "the process of transforming the local and regional phenomena into a global one. It may be described as the process of hegemonising or mixing, which unites the people of the world into one society, in which they function together" (Wikipedia in Serbian). Bearing in mind that this is a complex phenomenon, in this paper we shall focus more on its economic aspects and deal with its positive and negative impact on the *small* economies, particularly those in transition. Further, this means that we shall try to answer the question of whether, and if so, how, the small and insufficiently developed countries can survive in the conditions of the ever more intense globalisation, reflected in the dramatic rise in inequality between the developed and the undeveloped countries, and the rich and the poor within those countries individually, especially bearing in mind the overpopulation, environmental disasters, mass migrations, ethnic conflicts etc. T. Piketty, truly worried about the essence of globalisation, asked the question: "*Are we completely certain that the economy based on free market and private ownership always and everywhere leads to an optimum distribution?*" (Piketty<sup>1</sup>, 2014). Let us start from the finding (from both theory and practice) that globalisation offers multiple opportunities to big companies and national economies which are competitive on the global market. At the same time, globalisation in these economies results in structural changes and the consumers also benefit from lower prices and greater choice. In this sense, the regions located to the north-west of the EU (Finland, Denmark, Great Britain and Ireland) are objectively in a more favourable position and will continue to be so, as they profit

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<sup>1</sup> The book by T. Piketty:., *Capital in the 21<sup>st</sup> century*", represents a comprehensive and deep analysis of the issue of wealth distribution and inequalities; it contains many instructive guidelines for the future choices to be made by the undeveloped countries.

from their high competitiveness, which is based on their highly-skilled work force, participation in the high-tech sector, etc. Simultaneously, due to the unimplemented structural changes and inadequate industrial policies resulting in a high share of little added value, inadequately skilled work force, insufficient use of educated work force, low levels of foreign direct investments etc., the majority of the regions to the south and to the east of Europe (Latvia, Slovakia, Hungary, Bulgaria, Romania, Greece, Spain, Western Balkans etc.) are considered vulnerable and it is expected that they will continue to suffer the consequences of globalisation (for more, see Mirić, 2009). On the whole, the European countries in transition have taken the hardest blow in the latest crisis (Vujović, 2011). Similarly, prof. Lj. Jurčić emphasises that the global processes are a chance but that they also put a limit on the development of national economies, "as the big economies get the benefits, whereas the globalisation costs are dispersed across a great number of smaller countries" (Jurčić, 2014). Unfortunately, as in the times of the Great Depression of some 80 years ago, there is still a great number of those advocating the stance that "there is nothing to be worried about, that the markets are self-regulated and that, given enough time, the economy will renew itself on its own". As opposed to them, J. Stiglitz uses the example of the Eurozone's failure to emphasise that the ideas which the IMF and the World Bank imposed on the whole world have resulted in a loss of a quarter of a century for Africa, a decade for South America and a transition for the Soviet Union and Eastern Europe, whose results have been, to put it mildly, disappointing. In addition, he especially criticises the neoliberal concept and blind faith in the market (the so-called market fundamentalism), where the market fundamentalists have believed that if the state would simply ensure that inflation was low and stable, markets would ensure growth and prosperity (Stiglitz, 2016). Thus, faced with the imperfections of the national and global markets, Stiglitz deems that the solution can be found in some sort of control over globalisation – in the coordination of policies and delegation of the control and regulatory functions to supranational bodies which would be formed to operate within the existing or extended OUN mandate (for more, see Vujović, 2011). The intensity of connections or, better said, the achieved level of globalisation as well as its impact, have been the subject of various analyses. In a rather simple form, it can be represented via the so-called KOF globalisation index. The overview of the countries' ratings according to this index, including its three sub-indexes (the economic, the social and the political), is given in Table 1. According to the globalisation index (KOF) for 2016 (Table 1), the following countries were most globalised: the first was the Netherlands, followed by Ireland, Belgium, Austria, Switzerland, Singapore, Denmark, Sweden, Hungary, Canada, Finland, Portugal, etc. When it comes to countries in transition, some of which have already become the EU member states, the order is the following: Hungary (9); Slovakia (16); Czech Republic (17); Poland (22); Lithuania (29); Bulgaria (30); Slovenia (32); Croatia (35); Romania (36); Serbia (46); Bosnia and Herzegovina (56); Montenegro (59); Macedonia (93) etc. If we relate this indicator with the indicators such as global competitiveness and GDP per capita, we arrive at a conclusion that those countries which have embraced and got involved in globalisation to a greater extent, have achieved considerably better results and that, generally speaking, we might say that globalisation is not an impediment to development in general. As an instructive example, these countries can take the example of the so-called *Asian tigers* – South Korea, Hong Kong, Taiwan, as well as other newly industrialised countries which have ridden on the wave of globalisation and managed to get closer to the level of development of the leading highly developed countries.

Table 1. Ranking of the countries according the globalisation index and (sub)indexes<sup>2</sup>

| Countries / Index of Globalization | Netherlands | Hungary | Slovak Rep. | Czech Rep. | Slovenia | Croatia | Romania | Serbia | B. Herceg. | Montenegro | Albania | Macedonia |
|------------------------------------|-------------|---------|-------------|------------|----------|---------|---------|--------|------------|------------|---------|-----------|
| Global                             | 1           | 9       | 16          | 17         | 32       | 35      | 36      | 46     | 55         | 59         | 88      | 93        |
| Economic                           | 4           | 7       | 12          | 15         | 40       | 44      | 55      | 53     | 79         | 32         | 102     | 64        |
| Social                             | 5           | 23      | 20          | 21         | 42       | 43      | 47      | 61     | 66         | 71         | 105     | 101       |
| Political                          | 9           | 49      | 44          | 42         | 50       | 46      | 28      | 75     | 64         | 120        | 90      | 144       |

Source: KOF; Index of Globalisation; 2016.

What we find important while seeking an answer to the question posed in the introduction, is that a country does not need to be big or rich in resources to be successful, judging by the global rankings presented above. In addition, there are positive examples of some of the most populated countries in the world, such as China and India, which have implemented deep and comprehensive reforms of their economic systems in the conditions of globalisation.

Furthermore, what the economic policy-makers in transition countries should bear in mind is the inevitable fact that, having failed to reduce poverty, globalisation could not have ensured stability (Stiglitz b, 2002). In other words, globalisation will not make itself more humane, efficient and equal – transition countries will have to fight for a better competitive position by themselves. In the long term, the main force which truly leads to greater equality is the dissemination of knowledge and skills (T. Piketty, 2013). Although this is beyond the scope of this paper, we conclude that a number of the basic concepts of the present economic theory need to be re-examined, particularly bearing in mind that the economic rationality of the countries in transition should go hand in hand with democratic rationality.

### 3. COUNTRIES IN TRANSITION – HAVE THEY ACHIEVED ANY REAL PROGRESS?

Bearing in mind the topic of this paper, special attention must be given to the key question posed in one of the recent reports of the European Bank for Reconstruction and Development: *Will the countries in transition (the region) ever be able to catch up with the standard of living of the developed economies?* The said document clearly states that the economic growth of this group of countries is still under the pre-crisis levels and that many of them have turned their backs on the reforms which might hold the key to revamping the economies of the former Eastern block. The said "shock", as stated in the report, raises doubts about the capability of those countries to get back on the right track of reforms and to catch up with the developed world in terms of the standard of living. Apart from stating that the whole region has been „stuck in transition“, the report also voices certain optimism as it says that the vicious circle of stagnation and subdued growth in transition may be broken if these countries "can promote and accelerate reform, particularly if international integration, domestic leadership and broader social movements work hand in hand".

In this light, if we assess the achievements of the nearly three-decade long transition and compare them against the expectations, we will find that many countries in transition are facing similar problems: a huge balance of payment deficit, high external indebtedness, unbalanced budget, high unemployment, still slow and insufficient progress when it comes to institutional reforms, unfavourable demographic trends, etc. In other words, this type of globalisation and the "introduction" of the market economy has not brought about the results promised by the

<sup>2</sup> The Netherlands was the first-ranked country according to the globalisation coefficient (KOF).

political elites in most of the economies transitioning from communism to the market economy. In our opinion, a good assessment of what really happened with the fall of socialism in early 90's was given by prof. Lj. Jurčić, who says that "the history has definitely sided with the liberal capitalism by marking it as the undisputed winner and universal model of the future world organisation. It has been a kind of a conservative revolution which has been shown as a historic necessity, and which will ensure the nations of the world stability, peace and prosperity, by means of an *invisible hand* of the free market. The development of the society (the state) has been understood as a general privatisation, liberalisation and deregulation, whereby the economic growth should result naturally from the market automatism" (Jurčić, 2014). What is also important to note when it comes to the wrong choice of the development concept in the countries in transition and the unmet expectations, i.e. the negative economic aspects of globalisation, is the fact that it mixes the liberal strategy with the protectionist one, to the extent to which the latter is needed for the former to work.

Hence, more often than not, one may hear objections coming from the globalisation opponents saying that the very nature of the neo-liberal concept is does not go hand in hand with humanness, but that it instead rests on the natural right of the stronger and fitter, the more egoistic and greedier one, and that thus it is deprived of morale and ethics. Similarly, J. Zettelmeyer<sup>3</sup> asks a very clear question when he speaks of stagnation in reforms – he wonders how and when the countries in transition will manage to correct the so-called *reform miscarriage*.<sup>4</sup> In support of the thesis that many of the transition countries have failed to implement the necessary reforms, we quote the professor D. Đuričin, a good connoisseur of the transition process, who, explaining the example of Serbia, states that the country's biggest problem is the so-called *output gap*, i.e. the gap between the actual output of the economy and its potential output. "The economy of Serbia is impotent and out of tune", whereas "the environment (regulations + institutions + the prevailing strategies of economic entities) in which the reforms are implemented is inadequate.

This especially goes for the institutions such as the securities exchange commission, stock exchanges and the central bank, but also for the mentality of the economic entities in the so-called *brotherly privatisations*" (for more, see D.Đuričin). Further, this means that the said countries in the new institutional transition forms and global environment, have not managed to effectuate the production factors, i.e. the comparative advantages they possess (land, labour, capital), which has resulted in a lower generation of the "potential income". Instead of hiring the employees in the industries in which they were most efficient, they were *broken*, which was often labelled as deindustrialisation, although the term was understood very differently from its interpretation in the developed Western economies. As opposed to such an understating of the transition process, we quote the following observation made by the prof. Lj. Jurčić: "It is difficult to find a developed country which has become developed without first developing its industry and without presently investing huge efforts in trying to make its industry more competitive on the world's market" (for more, see: Jurčić, 2014).

It is certain that deindustrialisation in the countries in transition has been the final and negative consequence of leaving the national economies to the *invisible hand* of the market. What is worse, whereas the "smart countries" have created clear long-term development strategies and industrial policies, this group of countries, burdened by many dilemmas and contradictions, is still "tied" to the past and has not managed to catch up with the "modernity". Thus, for example,

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<sup>3</sup> Deputy Chief Economist and Director of Research at European Bank for Reconstruction and Development (EBRD)

<sup>4</sup> The "underreform trap".

commenting on the fact that Croatia keeps losing its industrial substance and tradition, Ž. Primorac emphasises that the bad state of the industrial sector is a result of several factors. "Part of them, have certainly been caused by the world's economic and financial crisis," he continues, "however, part of the responsibility for the negative development rests with the economic policies of the country. The management of the economic sector, i.e. the total economic policy seems to be inadequate, incompetent and inconsistent" (Ž. Primorac, 2013).

The following tables give an overview of a number of relevant indicators based on which one may gain a more complete insight into the results achieved in the countries in transition; the ranking of the countries in transition by the priorities determined in the *Strategy 2020* (Table 2); the comparison of the level of competitiveness and innovation in the leading countries and those in transition (Table 3); the ranking of the countries by *doing business* (Table 4).

Table 2. Ranking of the countries in transition by the priorities determined in the „Strategy 2020“

| Country    | Smart growth pillars   |                |                   |                        | Inclusive growth Pillars     |                  | Sustainable Growth pillar    |
|------------|------------------------|----------------|-------------------|------------------------|------------------------------|------------------|------------------------------|
|            | Enterprise environment | Digital agenda | Innovative Europe | Education and training | Labour market and employment | Social inclusion | Environmental sustainability |
| Finland    | 4,83                   | 6,15           | 6,08              | 6,09                   | 4,73                         | 6,30             | 5,75                         |
| Croatia    | 3,34                   | 3,99           | 3,15              | 4,39                   | 3,37                         | 4,18             | 4,67                         |
| Estonia    | 4,21                   | 5,30           | 4,28              | 5,12                   | 4,88                         | 4,73             | 4,67                         |
| Macedonia  | 3,95                   | 3,63           | 2,78              | 4,01                   | 3,80                         | 3,95             | 3,19                         |
| Hungary    | 3,49                   | 4,03           | 3,37              | 4,47                   | 3,76                         | 4,09             | 3,59                         |
| Lithuania  | 3,81                   | 4,63           | 3,65              | 4,90                   | 4,43                         | 4,27             | 5,48                         |
| Montenegro | 3,88                   | 3,91           | 3,34              | 4,28                   | 3,69                         | 4,62             | 4,76                         |
| Poland     | 3,72                   | 3,98           | 3,43              | 4,85                   | 3,87                         | 3,89             | 4,07                         |
| Romania    | 3,61                   | 3,61           | 2,98              | 3,95                   | 3,68                         | 3,79             | 3,94                         |
| Serbia     | 3,16                   | 3,66           | 2,70              | 3,80                   | 3,33                         | 3,69             | 3,84                         |
| Slovenia   | 3,53                   | 4,30           | 4,25              | 4,88                   | 3,90                         | 4,98             | 5,17                         |
| Turkey     | 4,20                   | 3,45           | 3,53              | 4,28                   | 3,59                         | 4,38             | 3,36                         |

Source: WEF; *The Europe 2020 Competitiveness Report: Building a More Competitive Europe*, Edition 2014.

Table 3. Comparison by the level of competitiveness and innovation in the leading countries and those in transition

| Developed Countries | Ranking         |            | Countries in transition | Ranking         |            |
|---------------------|-----------------|------------|-------------------------|-----------------|------------|
|                     | Competitiveness | Innovation |                         | Competitiveness | Innovation |
| Switzerland         | 1               | 1          | Estonia                 | 30              | 23         |
| Singapore           | 2               | 7          | Czech Republic          | 31              | 24         |
| United States       | 3               | 5          | Lithuania               | 36              | 38         |
| Germany             | 4               | 12         | Poland                  | 41              | 46         |
| Netherlands         | 5               | 4          | Latvia                  | 44              | 33         |
| Japan               | 6               | 19         | Russia Feder.           | 45              | 48         |
| Hongkong            | 7               | 11         | Romania                 | 53              | 54         |
| Finland             | 8               | 6          | Bulgaria                | 54              | 39         |
| Sweden              | 9               | 3          | Slovenia                | 59              | 28         |
| Un. Kingdom         | 10              | 2          | Macedonia               | 60              | 56         |

Source: WEF; *Global Competitiveness Report 2015-16*; *The Global Innovation Index 2015*;

Table 4. Ranking of the countries by „doing business“

| Country       | Ease of Doing Business | Starting a Business | Dealing with Construction Permits | Getting electricity | Registering Property | Getting Credit | Protecting Minority Investors | Paying Taxes | Trading Across Borders | Enforcing Contracts | Resolving insolvency |
|---------------|------------------------|---------------------|-----------------------------------|---------------------|----------------------|----------------|-------------------------------|--------------|------------------------|---------------------|----------------------|
| Singapore     | 1                      | 10                  | 1                                 | 6                   | 17                   | 19             | 1                             | 5            | 41                     | 1                   | 27                   |
| New Zealand   | 2                      | 1                   | 3                                 | 31                  | 1                    | 1              | 1                             | 22           | 55                     | 15                  | 27                   |
| Denmark       | 3                      | 29                  | 5                                 | 12                  | 9                    | 28             | 20                            | 12           | 1                      | 37                  | 9                    |
| Korea         | 4                      | 23                  | 28                                | 1                   | 40                   | 42             | 8                             | 29           | 31                     | 2                   | 4                    |
| Hong Kong     | 5                      | 4                   | 7                                 | 9                   | 59                   | 19             | 1                             | 4            | 47                     | 22                  | 26                   |
| Un.Kingdom    | 6                      | 17                  | 23                                | 15                  | 45                   | 19             | 4                             | 15           | 38                     | 33                  | 13                   |
| United States | 7                      | 49                  | 33                                | 44                  | 34                   | 2              | 35                            | 53           | 34                     | 21                  | 5                    |
| Macedonia     | 12                     | 2                   | 10                                | 45                  | 50                   | 42             | 14                            | 7            | 26                     | 26                  | 37                   |
| Estonia       | 16                     | 15                  | 16                                | 34                  | 4                    | 28             | 81                            | 30           | 24                     | 11                  | 40                   |
| Slovenia      | 29                     | 18                  | 71                                | 35                  | 36                   | 126            | 7                             | 35           | 1                      | 117                 | 12                   |
| Croatia       | 40                     | 83                  | 129                               | 66                  | 60                   | 70             | 29                            | 38           | 1                      | 10                  | 59                   |
| Montenegro    | 46                     | 59                  | 91                                | 163                 | 79                   | 7              | 36                            | 64           | 42                     | 43                  | 36                   |
| Serbia        | 59                     | 65                  | 139                               | 63                  | 73                   | 59             | 81                            | 143          | 23                     | 73                  | 50                   |
| B. and Herceg | 79                     | 175                 | 171                               | 119                 | 97                   | 42             | 66                            | 154          | 28                     | 66                  | 38                   |

Source: WBG; Doing Business; 2016.

The data from Table 2 and the comparison of the given indicators for the countries in transition against Finland, the leading country based on those indicators, we may note that the countries in transition are significantly lagging behind, especially when it comes to the efficiency factors, such as: *digital agenda*, *innovative Europe* and *education and training*. The data from Table 3 show that these countries are considerably falling behind in the achieved level of competitiveness, especially taking into account the continuity of such indicators; even the rankings accomplished previously are getting worse and worse over time. One of the reasons for this must be in the relation to innovation, which shows that this group of countries still favours the inherited, so-called comparative advantages, while they neglect the *soft* variables, such as education, innovation, etc. Similarly, the data for doing business (Table 4) indicate that these countries still have not managed to tackle many, mostly infrastructural, problems. The said and numerous limitations are still a strong obstacle to the concept proposed in this paper, which requires the necessary „reprogramming of the bureaucratic mindset“, „new role of the state“ and the reindustrialisation. Finally, from the perspective of the achievements of the countries in transition, which have been the focus of this paper, their additional lagging behind the developed economies becomes even more evident. Thus, we may conclude that the majority of these countries still have not faced the problems they were supposed to resolve a long time ago, and one of them is the issue of the concept for long-term development in the conditions of globalisation. This amounts to an escape from reality of globalisation and maintaining the position of a future shaped by others.

#### 4. REINDUSTRIALISATION PROCESS AS AN IMPOSED CHALLENGE

The issue of reindustrialisation is among the top unresolved problems which many transition countries face. In this context, one should bear in mind that at the turn of this century large changes occurred in industrial development, i.e. its concept changed from the "traditional" industries to the new ones, which have overpowered the former. The latter concept has proved itself in practice as realistic, especially in the economies such as Japan's and in the group of the newly industrialised countries of Eastern Asia (the so-called Asian tigers), whereby their rise is

explained by their embracing and fully implementing the principles of the so-called "new economy".

In addition, in the quest for a new development concept, which we designate as the "new development paradigm", it may be of use to quote the arguments presented by K. Ohmae, who says that the global economy has created its own paradigms and that some its characteristics are new and increasingly interesting. We shall present them here: a) probably for the first time in human history the prosperity and wealth do not depend on the existing wealth; b) there is an excess of capital in the world; c) the size does not matter anymore (the size of a market, territory – op. a) (Ohmae, 2007). Seeking an answer to the question – *what are we supposed to do now?* – we may also quote prof. Lj. Jurčić, who concretely suggests a "new model for Croatia" with the following components (for more, see Jurčić, 2014): "a) creating a class of unbribeable, honest and highly qualified managers, chosen based on their expertise and work experience, honesty, interpersonal skills and readiness and capability to fight for social interests; b) Croatia must establish a new framework for the role of the state in our economy and a plan of how to achieve it; c) economy cannot work without money. It is the final function which is defining for economic growth; d) in order to achieve economic growth, the country needs a favourable investment climate." Prof. Đuričin deals with the same topic when he says that "if Serbia wants to avoid the trap of the slow growth and indebtedness, it needs a spectacular turnaround." According to him, "the exit from the crisis requires a simultaneous algorithmic thinking and a harmonisation of the four great actions: a) geopolitical positioning; b) focusing on relevant persons; c) reforms going in various directions; and d) a new industrialisation" (for more, see Đuričin, 2016).

If take all this into account, the new and much needed conceptual directions for the countries in transition should focus on the following: a) the construction of a functional institutional infrastructure; b) the new role of the state; c) embracing the concept of the "new economy"; d) reindustrialisation and new industrial policies (for more, see A. Lojpur, 2016). We shall briefly comment on all of these:

**a) Creating a functional institutional infrastructure:** The practice of both developed and less developed countries has shown that all development models which have fallen into the *institutional vacuum*, i.e. which have ignored the institutions, have not been able to avert crises. The example of the countries in transition suggests that the institutional changes are changes of the infrastructure and that their absence has a destructive effect on engaging and effective using of economic resources.

**b) The new role of the state.** In short, the new role of the state could be described as its abandonment of the function (role) of the leading entrepreneur and its assuming the role of adjusting the market anomalies and failures. If the markets are based on exploitation, there is not a single reason for the state not to interfere in the free market. Actually, in this case, the fight against the "rooted force" is not only the fight for democracy. It is a fight for efficiency and prosperity of all (Stiglitz, 2016). The role of the state we here advocate is not novel, and most of the countries which have embraced it have climbed up the ladder and are now permanently positioned on the very top of the global ranking list of competitiveness. We can give the example of Finland, whose development road since gaining its independence from Russia in 1917, until becoming one of the leading world's economies, showed that that country knew how to successfully transform its economy from one which was lagging behind to the economy of knowledge.

**c) Embracing the concept of a "new economy".** It has been shown that in the today's multipolar world there is no entrenched development paradigm; the exit from the crisis for the



countries in transition is possible only via a new order, which, as things now stand, will not rely on the socialist concept to a great extent. The example given by J. Stiglitz is very instructive: an almost unique combination of pragmatism and vision was largely key to the Chinese long-term success... China has also recognised that what differentiates the less developed countries from the developed ones is not only the gap in the resources, but a gap in the knowledge (Stiglitz, 2015).

**d) Reindustrialisation and new industrial policies.** Reindustrialisation as understood in this paper does not suggest a renewal of the "chimney industry" or "defence" of socialism. Still less, we do not call for a "centrally-planned economy" nor a needless ideologisation and falling into the trap of a new ideological debate. Industrial policy basically refers to the strategy adopted by a country, involving several measures and activities, i.e. mechanisms, aimed at achieving specific goals of an individual branch (industry) of economy or the economy as a whole, most notably the goals of productivity and a more significant participation in and contribution to the country's GDP. At the same time, promoting entrepreneurship in new industrial policies, not those inherited ones but those proven as meaningful, as the cornerstone for social activities, should become the focus of a changed awareness of the future progress and dynamics of the countries in transition.

## 5. CONCLUSION

When it comes to countries in transition, particularly those from the Western Balkans, there is a consensus that the impact of the deindustrialisation process on them was as radical as the advent of socialism. In our opinion, while seeking the new development formula we must take into account that in the today's multipolar world there are no entrenched development paradigms – this also goes for overcoming the deindustrialisation problems. In other words, the exit from the crisis for the countries in transition is only possible via a "new" order, i.e. embracing a "new" economic paradigm of development and reactivating the entrepreneurial economy. Thus, the paper once again reexamines the open question of the repeated or "new" industrialisation, i.e. deindustrialisation, while attempting to find an answer to the question of whether it is possible to turn the future concept of development of the transition countries towards a greater equality of wealth in the world.

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## TOWARDS AN ECOLOGICAL SOCIETY

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### ABSTRACT

*The most essential problem of humankind awaiting an urgent solution is the planetary ecological collapse. It is determined that the risks formed in the shape of ecological and high technological risks and threatening every living being in the earth emerge completely in the consequence of decisions taken. Thus there is a need for social change and it is possible to create an ecological society including not only political institutions and economic relations but also consciousness, life style and the meaning attributed to life. Capitalist, growth-based, rent-seeking, anti-democratic and against nature decisions and practices prevent the citizens having an ecological life. The water we drink, the air we breathe, the food we eat, our houses and cities are thoroughly contaminated, made unhealthy by the hands of the capital and ecological principles are ignored. Today in most parts of the world ecological movements have started and the governments have started planning towards an ecological society. One of the ways to prevent the destruction of living spaces of all living creatures; reduce consumption, production, growth, rent-stating society, industrialization, urbanization by means of neoliberal policy is to build a demand on "Ecological Society" and allow a creation of eco-citizenship by enabling citizens' participation. The aim of this study is to search, examine and explain the answers of such questions as "What is an ecological society?", "How is an ecological society formed?" "What principles is an ecological society based on?" and "What are the other ways of citizen participation?" through historical materialism and critical methods. The findings are evaluated through gathering data from United Nations and national formal documents, written and visual materials of non-governmental organizations' demands and actions.*

**Keywords:** Eco-sociology; ecological society; ecological living; transition, eco-citizen; democracy

### 1. INTRODUCTION

The most important thing in the 21<sup>st</sup> century is the struggle against ecological destruction. The natural cycle of ecosystems are destroyed irrevocably due to neoliberal finance politics, energy politics, urban transformation and mega projects, looting regulations and technological changes prioritizing making profits. The air is commoditized through the amendment of 17<sup>th</sup> article of Kyoto Protocol which makes it possible for the governments and the companies to trade greenhouse gas emissions. Ecological destruction is in an irrevocable process owing to neoliberal politics based on the capitalist understanding and the capital with its boundless and unlawful character. The destruction it creates has an impact on both urban and rural living spaces. The human beings are forced to submit to such devastating effects as climate change, food sovereignty, precarious work, gender discrimination, violation of right and dehumanization. The societies are obliged to be deprived of many rights notably human rights, the right to live, water, environment, healthy nourishment, property and the right to be governed well. "The transition to an ecological society" is necessary to prevent the destruction of all living things' environments and over-urbanization, over-industrialization, over-growth and over-consumption due to neoliberal policies, which creates the principal research question of this study. The need for the transition to an ecological society is worked out and the process of an ecological society is analyzed through eco-sociological point of view using hermeneutic and critical method.

A few of the findings of the study is that all living beings are under the threat of death; the transition to an ecological society nowadays is a necessity; the ecological society is based on new manners of thinking, behavior and organization; the scope of the ecological society can be through various changing processes and social change should be globally, nationally, locally and individually. It is evaluated through using theoretical perceptions, UN and national formal documents, eco-actions and demands of NGOs.

## 2. THE TRANSITION TO AN ECOLOGICAL SOCIETY IS A NECESSITY

UNEP Annual Report (2016) seems not to follow an ecological perception and it acts with the aim of environmental protection and the mentality of economy. “The Assembly adopted 25 resolutions that will drive action on sustainable finance, marine ecosystems, waste management, land degradation, the illegal trade in wildlife, and the protection of the environment during armed conflict”.

Rapid destruction of bio-diversity and decrease of life support spaces tell us that the transition to an ecological society should be immediate. WWF Report (2016) “The freshwater system has declined by eighty-one percent, **populations of vertebrate animals—such as mammals, birds, and fish—have declined by 58% between 1970 and 2012...** There is a clear challenge for humanity to alter our course so that we operate within the environmental limits of our planet and maintain or restore resilience of ecosystems”

Human Development Report (2015) shows how human creativity, ingenuity, innovation and work can expand choices, enhance well-being and ensure freedom for every human being in an equitable and sustainable way.

Rockström (2015:7) say “The world thus urgently needs a great transition that rapidly bends the curve of negative global environmental change. Such a turn toward sustainability demands a deep shift in the logic of development away from the assumption of infinite growth toward a paradigm of development and human prosperity within Earth limits”

Ecological destruction starts to be considered as a serious social problem with the publications and as the basic problem of the 20<sup>th</sup> century. Such questions as “Is there a necessity for the transition to an ecological society? What is an ecological society? How is the ecological society formed? What principles is it based on? What processes does it go through?” are few of the questions that need to be answered constitute the essential part of the study. Negative results of global ecological destruction not only on nature but also human beings, economy, money, labour process and institutions. Climate change, loss of biodiversity by the extinction of species, increase in poverty, unemployment, landlessness, injustice, income inequality, dispossession, immigration and discrimination are discussed. The disappearance of many colonies of bees means the disappearance of primary producers –plants thus the whole life. The study which explains that there are 21 kinds of remnants on a pollen and identifies eight different pesticides consisted of fungicides and pesticides with parasitic infection displays that lots of medicine, pest control and the bees taking away the pollen from the spaces without disinfection are influential on that collapse (Kandemir, 2007: 63). Holderlin states that “The lives of the organisms are under threat yet liberation blossoms where there is danger” (quoted in Hardt and Negri, 2011: 71). As all the spaces of livings are in danger, the transition to an ecological society is urgency. Arthur Mitzman (quoted in Lövy,2002)states that the values based on the natural cycles of the life and the respect for the nature rather than the values based on the dichotomy of losers and winners, linear economic growth, personal enrichment and cruel

competition should be adopted. The transition to a new cultural and economic social organization is an obligation. This obligation is based on four predicaments: energy predicament, climate predicament, nutrition and money predicament which necessitates the change of not only development model but also the civilization model (Holbecq, 2005: 21).

A different point of view towards life is required. According to Zin (2011) beyond the ordinary descriptions the society is not a group; a public; a family; not only a transaction with other people but also a social organization, rituals and institutions; essential texts, a life style and production systems which provides the social reproduction and material life. The consciousness of humankind together with their social relations and collective existence change (Marx&Engels, 2007:29). The increase in income inequality, exploitation and the problem of sharing the values created and produced between the capitalist and the labour is the main problem that needs to be solved in a world where consumer society does not make people happy and happiness, liberation and satisfaction is reached through consumer goods (Duhm, 1996:58-59). "Injustice makes the humankind unhappy" (Layard, 2005). The human beings are used to spending money. They start consuming as soon as their life standards increase; adopt consumption norms so quickly and cannot even think of living on less money (Zin, 2013).

### 3. THE TRANSITION TO AN ECOLOGICAL SOCIETY SHOULD OCCUR GRADUALLY

Ecological society means a liberating, solidaristic, equal and self-sufficient society which consumes less; aims at changing the existing system; produces, creates alternative ways of production; stands up for the humane relations, sociality and publicity rather than individuality; grounds on the necessities of the citizen and the planet, possesses the ability for a collective creativity.

An important contribution to eco-sociology which needs an interdisciplinary study is from Prochaska & Di Clémente (1992:1103-1104) known for his psycho-sociologic approach. He reveals that the change ("transthéorique » model) happened in six stages. The model for the transition to an ecological society can be used with adding the sociological dimension and thinking the six stages together:

**Precontemplation:** is the stage at which there is no intention to change behavior in the foreseeable future.

**Contemplation:** is the stage in which people are aware that a problem exists and are seriously thinking about overcoming it but have not yet made a commitment to take action Awareness of the ecological destruction, being interested in those issues emotionally and the process of thinking of what s/he can lose.

**Preparation** is a stage that combines intention and behavioral criteria. Individuals thinking about some changes at home and life; joining in campaigns, participating in a conference or making a project related to ecology. Acceptance of the change and heading towards new life styles.

**Action** is the stage in which individuals change their behavior, experiences, or environment in order to overcome their problems. Changing her/his habits and mentality into new ones depending on ecological principles. Going to work by bike, making compost at home, consuming less, sharing her knowledge and experiences with the others, changing her relations with money can be examples.

**Maintenance:** is the stage in which people work to prevent relapse and consolidate the gains attained during action. Persistence to continue with her new habits

**Stabilizing behavior** change and avoiding relapse are the hallmarks of maintenance. In the last stage, reaching to attitudes compatible with ecological principles decisively.

The seventh dimension to be added to these stages is that the ones who follow the changes in their lives through "resistance and co-existence" create new styles of living. Such resistance styles against capitalist neoliberal practices have already started in many countries in a global scale. **Resistance and co-existence** is 7<sup>th</sup> stage for us. Bio-politics on resists the controls; insists on life; fights for freedom and looks for the power of life. Bio-politics states that it is possible to change the economy into "bio-economy" through co-existence (Hardt ve Negri 2011:74,314). This is the process to head towards a collective area as a resistance and creation of an alternative style life.

This stage should also be analyzed within terms of the governments, companies and institutions the main and important elements to produce bio-power in creating the ecological society that can be created by developing ideas, behaviors and attitudes in order to reconstruct the media and education system and raise citizens with ecological perception and consciousness; build a new economic order powerful in its social dimension.

#### **4. FUNDAMENTAL CHANGING AREAS OF THE ECOLOGICAL SOCIETY**

We can state the changing areas as following: Primarily in thinking ways and life styles; in cultural, social, communicational, governmental, legal and organizational areas and extending over time or simultaneously on global, national, local and individual levels as happened in the agricultural revolution.

We can state the main social changes as following

**4.1 Comprehension of the paradigmatic change:** A paradigmatic change on global and individual level is obligatory. "A New Environmental Paradigm" (Dunlap&Cutton (2000: 425-442) rather than the paradigm based upon the logic of scarcity and with attributing high importance to great human mind.

The humankind is only one of the other living creatures and its existence depends upon the interdependence and interaction of ecosystems which shapes our social life. It includes unexpected consequences which can be the result of limited social actions within the complexity of cause and effect relationship and the condition of nature. A paradigmatic change that can see the biological and physical limitations in front of social conceptions, social changes and economic development.

**4.2 The social construction of a new social reality:** The ecological society is possible with a new social reality. Berger&Luckmann (1966:3, 18, 52, 89) with a dialectical approach explain through the concept of "The Social Construction of Reality" that people by actions and interactions create realities continuously which are based on objective events; shared and experienced meaningfully and subjectively. People can rebuild the institutions as creative living beings with their abilities to affect their societies. The person who is not aware of the dialectics between the productive human being and her/his productions emphasizes that objectified world is away from a humanized world.

The reality of a human being who moves away from the mentality that gives importance to the ecological knowledge, urban and agricultural life harmonious with the nature and its rules changes into a human being who at first goes into a process of overconsumption, dehumanization, technology, industrialization and today with neoliberal capitalist politics thinks that she/he cannot change anything for the future. They start looking for alternative life styles in order to reconstruct the reality as it has lost its meaning. Young people and the women are more aware of the need for a different society for their concerns for the eco-system.

The provision of interdependency and diversity is the compulsory principle of ecological holistic view. It is also the idea to favor the organic unity of the society's different parts and highlight the diversity of all living beings and the thoughts against the oversimplification of them as one dimension. It is the evaluation of the society by accepting the diversity of skills, perceptions, ethnicity and life styles.

The society based on egalitarian and libertarian qualities and constituted of participative and solidarist individuals with responsibilities for the commune, is classless, where there is no hierarchy, relations of power and privileged groups. These qualities are also the principles of the ecological society. The levels of contribution or damage to communal life in an ecological life are signals that are used to determine the punishments and the rewards. Another signal is that "The demand to abolish the form of private property that means the dispossessed majority, the prerequisite" (Marx&Engels, 2007: 26).

**4.4 The practice of direct democracy:** The domination is removed from human consciousness and there will be the replacement of the governance of people with governance of things. Decision making through community council, a modernized version of the ancient period. The decisions in the council are discussed and voted via simple majority. The hierarchy and dominance with all forms, social classes and private property are abolished. Senior officials including the ones with compulsory positions represent their communities regionally and nationally. It is the people's democracy which is horizontal and not hierarchic where the decisions are taken bottom to top and on the basis of face to face relations. Ecological democracy does not measure itself mainly by its ability to satisfy people's immediate preferences. It expresses a determination to take seriously its responsibility to bequeath a healthy and beautiful world to its descendents, it can prevent the individual so that kinds can live and collective interest rather than individual interest can dominate (Bourg D., Whiteside K., 2009). For Shiva(2005:7) "Earth Democracy" need a new eyes; relationships of responsibility and solidarity between citizens and the collective and present, past and future generations, between human beings and ecosystems.

**4.5 Transformation of the institutions:** The most important and fundamental elements to constitute the ecological society are institutions, public space and eco-citizens. The construction and humanization of liberating institutions, practice of doing politics within context of face to face relations directly rather than through representatively and anonymously by certain groups of people are possible with reconstruction of a new public space, media and education and educating citizens by an ecological approach and mentality.

There will a society where the socialized person and the united producers govern the nature, human interaction rationally; and rather being under the hegemony of a blind power it is collectively controlled by spending minimum energy and created within the most suitable conditions to their human natures (Marks, 1978: 959).

**4.5.1 Reconstruction and organization of the institutions of economy and production:** The time will come for the sufficiency economy rather than a growth economy, the questioning of the concepts of indicators and the wealth, finance for prosperity, production for local nutrition, the construction of productive chains and markets through solidarist collaborations, becoming independent from fossil fuel, local and regional autonomy, collective administration of common properties, human development, democratic, solidarist, sustainable and social collective society rather than one dimensional way of thinking (Holbecq,2005:41,54). The debt management; one

of the main process of exploitation will be abandoned. "We will struggle to turn not only the existing politic power but also the economic power upside down in order to make a change (Latouche, 2010: 302).

Socialization and ecologization of production is required to reconsider and reorganize the labour process for its control by the labour forces rather than the capital that holds the property of production modes. There is a need to create an economy that considers the necessities to support a healthy life. The development of machines to make humankind independent from hand labour not only decreases their work hours but also enables them to spare time to for a political participation. The human being will become sharing the social life through participating in the political life of her region where she lives. The division of labour that fragments the human being is abandoned. The working hours are changing.

It is necessary to ensure food, housing, clothing and basic social tools directly for everyone in a way to present a chance to carry out social relations not only for an elite part of the society and that process should be conducted with minimum work (Bookchin, 1996a: 46).

Food has become a tool of politics and turns into a kind of weapon. It is governed by not the states but transnational companies. Somali is a good example to this.

The end of money? In the example of Argentina social money is produced and it starts to be used. In his issue, it is better to pay attention to Ould-Ahmed's (2010:1-30) scientific explanations. A local currency named "troc clubs" has been used since 1995. That currency system named "credito" or "not money" which is not convertible with official money is becoming effective in the whole country; stabilizes the prices; produces the things people are in need of and simplifies the accessibility of productions and service for poor people particularly women. People are still becoming members of that system and the members are still in the system, too. The system emphasizes the enhancement of living standards and daily social life; has an educational function rather than economic through creating a new social relationship. It is used in Brazil, Uruguay, Colombia, Ecuador and Chile (Ferreira, 2006:44-45, 53).

Making technology more ecological means the reorganization of technology in order to make use of renewable energy and not to create pollution. The organization of technology according to the necessities and feed the societies through renewable energies. Without being oppositional to the modern technologies, it is important to employ it for the service of human well being and less consumption. Technology can be an instrument for the marriage of humankind and cosmos but technology betrays humankind and makes the wedding bed a blood bath during the world war owing to the ruling class who uses technology in order to make more profits (quoted in, Lövy, 1999: 237).

**4.5.2 Transformation of the state:** In a global world, almost none of the nation-states can act on its own. The state goes into a transformation area where it cannot employ its power of sovereignty as there is an increase in interdependency with the transition to multicultural institutions (Cantekin; 2015:163-175). The citizen starts to criticize the state on a socio-politic basis, as well. Eco-socialism can be considered as a strategy to ensure this transformation . Eco-socialism means the end of state and capital hegemony by abolishing the private property of the means of production; self-governance; revival of the justice; transition of the interaction between the humankind and the nature from exploitation to justice and prioritization of use-value over exchange-value (Engert, Balta, Doğan,2011:8).



The state continues its existence that controls people's daily lives. The state has lost its validity which is authoritative, fascist, arrogant, violates the rights and performs oppression. Because, all the nation-states go into a process of redescription in order to reconstitute themselves; renewal; fragmentation, division and identification (Holloway,2003:135).

The states that change their priorities go through a way of becoming ecological. Canada (2013) and France (2015) start to change government policies. Canada has been carrying out reports with its targets, approaches and action plans including 33 ministries about sustainable development since 2010. Every three year, it makes strategic planning for primarily climate change, the quality and accessibility of water and in order to save the nature and Canadians and reduce ecological footprint. It follows the developments by adding new targets every year. Ecological things can happen through government policies as seen in Canada. The vast majority of Canadian households were either moderately or very active with respect to environmental behavior. 45% of Canadian households were very environmentally active. These results indicate that despite challenges with respect to income, education, dwelling type and dwelling tenure, Canadians have adopted environmental behaviors (Babooram,2008).

The example from the Europe, France's “Strategy Of Ecological Transition Towards Sustainable Development 2015-2020” (2015) is prepared by Council of Ministers on nine dimensions through determining their priorities each. Forming a new circular financial economies, decreasing and preventing social and environmental inequalities, promoting science into ecological studies, reorganizing education system by an ecological approach and raising awareness of the public for the ecological transition. A study conducted by IPSOS(2014), France reveals that 41 % of the people buy locally grown foods.

**4.5.3 There is a need to abolish the other social institutions:** The concept of “Great Transition” emphasizes that “a deeper change should happen in terms of cultural values, living styles and economic forms as the existing system cannot solve the world crisis. With the necessity of “**A New Human Culture**” in our relationship with the nature and the human beings, it recommends a cultural change which empathizes humankind and makes it more important (Raskin et al.2002:42-43). Today's family is the product of private property. It is based on private gains and the capital so it has to be abolished. It is not a protective, supportive and constructive area neither for children nor women but a place of exploitation, instead. Children and women are sold for money, married at children ages and faced to different types of violence primarily abuse and rape. Home is a working and producing area without working hours for women. The thing we need to change is that capitalist, patriarchal and sexist order. The most developed form of family is merely for the bourgeoisie yet it completes itself in open adultery and proletarians' being without a family as Marx and Engels (2007: 27) states. Education is recreated with the knowledge of planet and ecology. The problems in education stated by Morin (2000) as “Seven Complex Lessons” should be solved. The most essential aspect of an ecological society is the transition from a standardized education towards a liberating, questioning, self-realizing and promoting education system for a practice based studies. Presentation of a free, easily attainable health service system for everyone is required to include the values of animals, plants, land and water. It should prioritize the natural treatment, rehabilitative and preventive health care system instead of a way to enrich the drug companies. Dr. Grady (1995), evaluating that process as “a medical genocide” reveals the games of global drug monopolies. He states that the deaths because of cardiovascular diseases can be prevented only if the global drug monopoly promotes health rather than death and diseases. He continues to say that this monopoly kills over 2.5 million people and those people's deaths cost 1 trillion dollars every year which equals to 12 % of the budget. It is expected from the institution of law

to ensure the justice, liberty, equality and the right to live for all living beings and the planet. Valerie Cabanes who supports for the campaign named **"End Ecocide on Earth"** coins the terms **"ecocide"** in order to include the crimes against environment, ecosystems and societies' rights. She struggles to build a new earth law by stating that the aim is to place "ecocide" as the fifth international crime against peace (Zarachowicz (2016).

**4.5.4. Empowerment of the citizens and ecocitizens:** The citizen and the planet are on the basis of the ecological society. The citizen is to participate in the decision making process about her daily life as an active citizen and to regain her power. She will be active in the administration of the society and have a right on ecological politics which directly affect her life. It is useful to remember the primitive life order. There is no hierarchy or state organization. The society based on egalitarian and libertarian qualities and constituted of participative and solidarist individuals with responsibilities for the commune is classless where there is no hierarchy, a state construction, relations of power and privileged groups. Ecocitizens are environmentally friendly, behaviour and lifestyle and he is energy saver.

#### **4.5.5 The demands of the NGOs**

The aims of RAC-F (Climate Action Network ) in France is 100 % renewable energy by 2050, abundance of coal, to give taxation for climate change and health, charge for carbone dioxide and to enable the accessibility of all transportations alternative to automobiles. Green Party in Europe with an ecosocialist approach develops an action plan saying "To Live Well" for everyone and presents a civilization project. Association de Cooperation Ecosociatale- a new movement in Europe improves an alternative about the socialization of the ecosocialist economy. It is a monetary and economic system theory without profits, private property, private means of production, privatization of common interest and a finance capital. Social income is shared equally to mature citizens without any condition. That income should meet all the necessary expenses and allow for a fair living. It is distributed equally to any active citizen who endeavors her capacity and labour for the society. The price for labour is added up to Social Income which enables a conformed life for herself and her acquaintances. The Initiative prepared an alternative "Ecological Constitution" (2011) in Turkey and presented to the government but today it is seen that it is not taken into any consideration.

## **5. CONCLUSION**

Transition to an ecological society is a precondition of survival and necessity. Construction of ecological and liberating institutions without any hierarchies; reestablishment of politics and citizenship and founding local societies based on self-government will happen. It is possible to form a human living through the transition from capitalism towards eco-socialism and the money will not be the objective. The transition should occur gradually. Thus the ecological transformation suggests does not only include political institutions and economic relationships but also, the consciousness, life style and the meaning attributed to life.

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## GLOBAL VERSUS LOCAL KNOWLEDGE IN DIY ECONOMY

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### ABSTRACT

*According to Charles Handy (2015) whether we like it or not we are forced to move into a DIY (Do It Yourself) economy. Farmers of this new DIY economy, who use the tools and means of the information age for problem solving, best practice sharing, or implementing new business models from the rise of the collaborative consumption can be called cyber farmers. To solve problems in real life we look for information, knowledge in many ways by formal, informal learning, experience sharing. The wide spread of information technology, social media globally has a significant impact on the knowledge sharing, experience mining. The knowledge gathered from the available sources over the internet is accidental also the application of this knowledge locally in a global environment raises many questions.*

*Nicholas Carr (2016) in one of his blogs talks about the illusion of knowledge, how the internet is making us shallow, but at the same time giving us the illusion that our knowledge is deep. In today's environment with around 8000 disciplines, by specializing in one or couple would mean to ignore more than 7990 (Nicolescu, 2002). This leads to the need of transdisciplinary approach, which would mean to not only look at certain problems from one or more disciplines, but go beyond the disciplines. In the process to mind, validate the knowledge available globally the following have to be considered (1) consistency of the accessible knowledge; this relates to the notion of internal validity, (2) relevance of the consistent knowledge; this relates to the notion of construct validity and (3) applicability of the relevant knowledge; this relates to the notion of external validity. The aim of this paper is to show a model for cyber farmers to help their learning process in the DIY economy.*

**Keywords:** *applicability of knowledge, consistency of knowledge, relevance of knowledge, transdisciplinarity, DIY economy*

### 1. BACKGROUND OF THE TOPIC

We are assembling our own furniture at home, printing our own boarding cards, self-paying for the merchandise in the shop, filling in our own car at the gas station. Charles Handy (2015) called this economy as the Do It Yourself economy, which puts us in control of our own affairs, at the same time saves money. Our homes are becoming work hubs not only for those who work remote or in home offices, but many people find new ways of income with the rising opportunities in the sharing economy. Nowadays we are seeing more and more gardening in the backyard, community gardens being established in cities, which cannot be considered solely as a new fashion but a potential result of the DIY economy.

One of the effects of the information revolution according to Rachel Botsman (2017) is that we live in a world of collaborative consumption, where with the help of different portals we share, exchange goods, services. Examples of these portals would be to swap DVDs (swaptree), share cars (uber), sell goods (e-bay), provide accommodation (airbnb, couchsurfing), match the land with the borrower (landshare), etc. We don't want to possess things, we want the experience what it fulfils (we don't need the DVD, we would like to watch the movie).

We live in a global village where the ties which used to happen face-to-face in the past, nowadays happen in the cyber space-time. At the same time technology takes us back to the times of bargaining, changing, swapping, sharing but with fundamental differences. We are witnessing the creation of a collaborative economy of what's mine is yours, of the access is better than ownership. According to Botsman (2017) the collaborative economy is an economic

system that unlocks the value of underused assets through platforms that match 'haves' with 'wants' in ways that enable greater efficiency and access.

Pink (2005) in his book - *A whole new mind* – describes the evolution of the society as progressing from the society of farmers (agriculture age), to a society of factory workers (industrial age), followed by the society of the knowledge workers (information age). According to Pink we are entering now the conceptual age, the age of creators and empathizers, pattern recognizers and meaning makers. In other words, "we have moved from an economy built on people's backs to an economy built on people's left brains to what is emerging today: an economy and society built more and more on people's right brains" (Pink, 2005, p. 25). Could one define the Do It Yourself economy, conceptual age, collaborative consumption as different levels of reality of the environment we live in?

## 2. LEARNING PROCESS MODEL FOR CYBER-PROFESSIONALS

According to Pink (2005) to survive in the conceptual age all players, whether individuals or organizations should examine the following questions:

- 1.) can someone do it cheaper in a global environment?
- 2.) can a computer do it faster?
- 3.) is what I am offering a demand in the age of abundance?

The six aptitudes or "six senses" required for anyone to be successful are: design, story, symphony, empathy, play and meaning. It is not enough to create a product, service, lifestyle that is functional; today it is economically crucial that something is also beautiful, emotionally engaging (design). The ability to contextualize, emotionalize are very important to show something in the context of something else (story). Industrial and Informational age required specialization, but in today's world the ability to put the pieces together (symphony), seeing the big picture, being able to combine the pieces into something whole new, ability to synthesise not only analyse. In our world of information overload, advanced analytic tools logic is not enough, understanding relationships, people and empathy is important (empathy). There are times where seriousness is required, but in the conceptual age we all need humour, games, laughter, we need to play (play). In the pursue of meaning more and more emphasis is on purpose, spiritual fulfilment (meaning). The conceptual age requires a new form of thinking, a new approach to life, which Pink calls as 'high concept' and 'high touch'. "High concept involves the capacity to detect patterns and opportunities, to create artistic and emotional beauty, to craft a satisfying narrative, and to combine seemingly unrelated ideas into something new. High touch involves the ability to empathize with others, to understand the subtleties of human interaction, to find joy in one's self and to elicit it in others, and to stretch beyond the quotidian in pursuit of purpose and meaning" (Pink, 2005, p.24).

Famers of this new DIY economy, who use the tools and means of the information age for problem solving, best practice sharing, new business models from the rise of the collaborative consumption can be called cyber farmers. Similarly one can define the 'cyber cook', 'cyber sewer' and so on, who not only use the internet to explore the opportunities of the sharing economy, but for problem solving, looking for new ideas, knowledge. On the other side of the coin assembling our own furniture, decorating our own house, growing vegetables in the backyard requires knowledge, skills which we did not acquire during our formal education and only a few of us can claim that are knowledgeable in many areas we are forced to be by the DIY economy. One example for knowledge sharing for the 'do-it-yourself economy' is IKEA. One can find many ideas from how to sew a cushion cover, how to refresh an old furniture, to how to make a present for Valentine's Day, to name a few (<http://www.ikea.com/gb/en/ideas/>). To solve problems, challenges raised during our everyday life we look for new knowledge in many ways, by reading books, asking experts, searching the internet, use social media just to

name a few. Real life problems cannot be tied to one or couple of disciplines. By specializing in one or couple of disciplines in today's environment would mean to ignore more than 7900 other disciplines, which leads to the need of transdisciplinary approach for the cyber-farmers to address real life problems. Multidisciplinary approach means to study a topic not in just one discipline, but in many other disciplines at the same time. Interdisciplinary approach means the transfer of methods from one discipline to another. Transdisciplinarity means to study that which is at once between the disciplines, across the different disciplines and beyond all disciplines. “This transdisciplinary approach will be an indispensable complement to the disciplinary approach, because it will mean the emergence of continually connected beings who are able to adapt themselves to the changing exigencies of professional life, and who are endowed with a permanent flexibility which is always oriented toward the actualization of their interior abilities” (Nicolescu, 2002, p .123).

Nicolescu describes the four pillars of the new transdisciplinary education as being: learning to know, learning to do, learning to live together and learning to be. Learning to know means the capability to establish bridges between different disciplines and our interior capacities (consistency of knowledge). Learning to do means mastering a profession or a craft with the theoretical and practical knowledge required for it. In the transdisciplinary approach learning to do means apprenticeship in creativity. In this context ‘to make’ has the meaning of creating novelty, surfacing one's creative potentialities. Learning to live together does not mean only to comply with the norms, rules, tolerating differences, but he stresses that in order for the norms of a collective to be respected, they must be validated by the interior experience of each being. Learning to be appears to be an enigma, we know how to exist, but how can we learn to be? “Learning to be also means learning to know and to respect that which joins the Subject and Object” (Nicolescu, 2002, p.123).



*Figure 1: Pillars of education according to Nicolescu*

“We could say that the transdisciplinary educative process is the catalyst for the emergence of a new, more mature transdisciplinary self, couched in the transdisciplinary methodology” (Gibbs, 2015, p. 21). Technology reshapes the co-construction of knowledge, the information revolution led to the theory of connectivism. He describes different knowledge types as

- knowing about (news, concepts of a discipline, etc.)
- knowing to do (drive a car, manage a project, solve a mathematical problem, etc.)
- knowing to be (to be an ethical person, to be a doctor, to feel, etc.)
- knowing where (find knowledge when needed, web search, database search, in organization, knowledgeable people)

- knowing to transform (to align with reality, to recombine, to innovate, to think). (Siemens, 2006, pp 10-11)



*Figure 2: Knowledge types according to Siemens*

One can draw similarities between the Nicolescuian approach to education and Siemens' categorization of knowledge types. Although Nicolescu describes learning and Siemens talks about the knowledge types, but the similarities in the "learning what" – "knowing about", "learning to do" – "knowing to do", "learning to be" – "knowing to be" have to be acknowledged. Differences to be noted are in the "knowing where" and "knowing to transform". According to Nicolescu "learning to do" is how we can learn the ways to create novelty, innovate. Siemens considers novelty creation as part of knowing to transform. Despite of similarities and the differences of Nicolescuian approach to education and Siemens's categorization of knowledge types today the information revolution opened new ways to "knowing where". Connectivism theory does not consider learning as a product, but rather as a continuous process. "We no longer seek to possess all needed knowledge personally. We must store it in our friends or within technology" (Siemens, 2006, p 52). As Charles Handy said: "In life and in work, we learn things when we need them, not before we need them" (Handy, 1998, p. 217).

Informal learning is focused on knowing, corresponding to the ability to interpret knowledge. The ever increasing of freely available, accessible information leads to the decrease of the reliability of the knowledge. "New knowledge is doubtful, as it is not yet verified" (Baracska, Dörfler, Velencei, 2005). This is acceptable in informal learning, where the question is not if the new knowledge is true or false (binary logic), but whether someone can interpret it here and there (Velencei, 2014). "The informal learning of tomorrow will be located on the other end of the continuum, in the realm of the Shallows, where it is acceptable to know a little about many things. Experiential learners engaging in such informal learning will only be learning what they are passionate about, therefore I can call my learners Passionate Learners. If formal learning is a "walk through the zoo" where zookeepers show the paved way, the increasingly informal and social learning is a "walk through the savannah" (Velencei, 2014, p. 12). Nicholas Carr (2011) in his book "The Shallows: What the Internet is Doing to Our Brains" describes how the achievements of the information technology distracts us from focusing on one thing at a time. The overload of the information available on the World Wide Web, also the structure of the content (hyperlinks, videos, pictures, etc.) makes us to continually browse and quick-scan the contents. Cyber-professionals are passionate learners and at the same time Shallows (Carr, 2011). They are looking for knowledge in their life, work when they need (know when) and what they need (know what). Their informal learning (Velencei, 2014) process is characterized by transdisciplinary approach in the Nicolescuian context. Specific to one's social and digital



reality the “know-how” is supplemented with the “know-where-to-look” as well as with “know-how-to-interpret” (Velencei, 2014). For cyber-farmers, cyber-professionals the internet is a learning ecology, where one can learn from experts informally, formally or in communities. In the learning refreshing once the new knowledge is identified the following phases of contextualization can be considered: validate the consistency of the accessible knowledge, validate the relevance of the consistent knowledge followed by the validation of the applicability of the relevant knowledge (Velencei, Baracscai, Dörfler, Stierand, 2016).

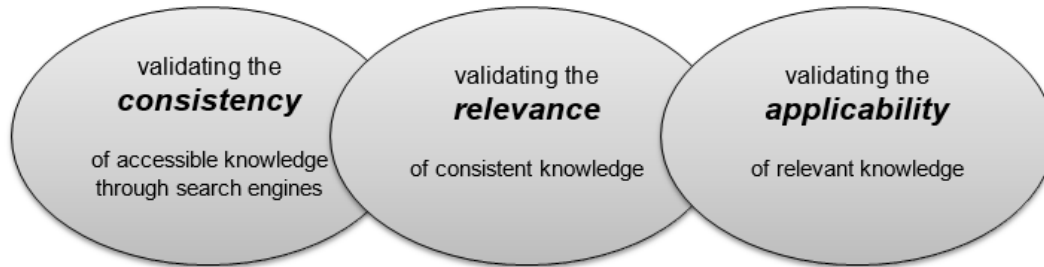


Figure 3: Learning process model for cyber-professionals

In the global village knowledge flows real-time, global conversations happen in “cyber–space-time” (Nicolescu, 2002), new information changes markets in minutes. Is the new knowledge consistent, are there any contradictions, connections to the existing knowledge? We must develop skills to filter information that is consistent. The validation of the consistency of the accessible knowledge relates to the internal validity. In the phase of validating the relevance the consistent knowledge has to be connected to the problem at hand, to the decision. Relevance is the requirement for the adoption or use, if something is not relevant it will not be used (Siemens, 2006). Validating the relevance of the consistent knowledge relates to the notion of construct validity. When one experiences knowledge in application leaves the theoretical understanding of knowledge. The relevant knowledge is examined with reference to the problem, to the decision alternatives. Is the relevant knowledge applicable locally? Validating the applicability of the relevant knowledge relates to external validity (Velencei, Baracscai, Dörfler, Stierand, 2016).

### 3. CONSLUSION

Today we live in the era of abundance, not only in terms of goods, services but also the accessible information over in the internet. Cyber-professionals of the Do-It-Yourself economy, who use the internet as a learning ecology look for new knowledge when they need them, they look for knowledge which is applicable locally for the problem, decision at hand. Competing in a global environment, but also facing local challenges has to be considered in today's knowledge refreshing. The learning model for the cyber-professionals described in this paper can be considered as a starting point to be further elaborated with knowledge based expert system.

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## EQUITY CROWDFUNDING

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### ABSTRACT

*Equity crowdfunding is an exciting new development on the financial market, allowing a wide range of investors to acquire equity in a company through an internet platform. Yet, due to the inherent complications of the model, which is traditionally heavily regulated by various legal restrictions, it is the slowest growing of the four most eminent crowdfunding models to gain widespread recognition. Advantages of equity crowdfunding are greater financing options and lower fixed costs as opposed to going public with an IPO, while the biggest disadvantage to investors is the information asymmetry and therefore the danger of a false or fraudulent investment. As the financial regulations for investments went in the direction of increased investor security following the economic crisis of 2007, such development seemingly impaired the development of equity crowdfunding. Today, two opposing visions of crowdfunding development can be seen – regulation camp, seeking to increase the legal restrictions for investments and therefore provide additional security, and liberal camp, seeking to lift the restrictions and therefore improve access to this new innovative source of financing. The clash is nowhere more obvious than in the development of equity crowdfunding. Where direct investments are restricted, new innovative ways to circumvent them were invented. Given the inherent international potential of internet platforms and therefore crowdfunding in general, differentiating legal regulation, especially noticeable on the EU level, prevents the crowdfunding from reaching its full potential. This paper will analyse the advantages and disadvantages of the equity crowdfunding, analyse the regulation on the main crowdfunding markets, gather research data from public sources and conclude that the countries which regulated and allowed investments through the equity crowdfunding model have better chances of successfully funding SME and startup companies through providing alternative financing option of equity crowdfunding.*

**Keywords:** *Equity crowdfunding, financing, innovation, regulation, investment security*

### 1. INTRODUCTION

When we mention crowdfunding, obtaining equity is not the first reference that comes to mind. The most common models used today, even though the definition of crowdfunding is not internationally established is the division to donation, reward, lending and equity crowdfunding (Blace, Grubisic, 2016). These models have the crowd aspect (usually defined as a limited or unlimited number of previously unattached persons), open call over internet and financing aspect in common (meaning that some type of financial exchange must have taken place). They differ wildly in other aspects, such as the expectance of return (non-existing in case of donation), type of return (material or financial), longevity (single action or permanent property in case of equity acquisition) and amount of finance pledged (typically lower in case of donation and higher in case of lending or equity). As such, they carry different levels of risk, yields and complexity of procedures for the receiver and the investor. Crowdfunding has the potential to become a 96B \$ industry (World Bank, 2013). Equity-based crowdfunding (usually defined as

crowdfunding), in which funders receive compensation in the form of fundraiser's equity-based revenue or profit-share arrangements. In other words, the entrepreneur decides how much money he or she would like to raise in exchange for a percentage of equity and each crowdfunder receives a pro-rata share (usually ordinary shares) of the company depending on the fraction of the target amount they decide to commit. For example, if a start-up is trying to raise \$50,000 in exchange for 20 percent of its equity and each crowdfunder provides \$500 (1 percent of \$50,000), the crowdfunder will receive 0.20 percent (1 percent of 20 percent) of the company's equity (Wilson, Testoni, 2014). Equity capital can be seen as an alternative to traditional funding practices such as angels investment, venture capital, loan, own capital, or other. While there are some other advantages for the other forms of fundraising (for example, mentorship which comes with angel investing), equity crowdfunding is sometimes the only possibility for small and medium enterprises (SMEs) and startups which for any reason don't have access to other methods. Crowdfunders are typically first-time entrepreneurs. Unlike investors in other entrepreneurial finance settings, they cannot count on investment banks to stimulate demand (Vismara, 2014). When valuing to take an equity position in start-ups, venture capitalists and business angels rely heavily on face-to-face interactions and personal relationships. In the crowdfunding setting, personal communication tends to be replaced by pseudo-personal communication over the Internet (Moritz et al, 2015). Also, often those looking for funding opportunities do not have sufficient information about potential sources of capital. This results in a problem of informational inefficiency that is fostered by the failure to match sources of capital with opportunities (Mittra, 2012). With the purchase of equity in a company, the investor shares the risk of the complete loss of the investment, if the company is not run successfully. They typically lack the experience and capability to evaluate different investment opportunities (Ahlers et al. 2015) and, due to fixed costs, have limited opportunity to perform due diligence (Agrawal et al, 2013). For these reasons, a large information asymmetry exists between the entrepreneur and investor. This can be mitigated to some extent by more extensive regulation, but that comes with negative consequences – cost of registration and other administration increases, the process lengthens and therefore the entire point of crowdfunding as an easy access to capital and investment opportunities using small amounts of money is defeated. Equity crowdfunding therefore caters an exponentially growing niche of alternative financial investment opportunities. It solves some of the problems with the classical fundraising methods. It is not limited in size – campaigns of up to several million \$ have already been successfully finished. Rather, the risk of fraud because of the information asymmetry is the greatest threat to the inherently risky nature of placing an investment. To some degree, through introducing certain limitations, national legislations have remedied the risk to a certain extent. In the next chapter, we shall see the legal options and solution employ on the four biggest crowdfunding markets in the world – United Kingdom, United States of America, China and European Union.

## **2. LEGAL FRAMEWORKS FOR EQUITY CROWDFUNDING**

### **2.1. United Kingdom**

For a long time, UK was considered to have the most advanced crowdfunding market in the world, and the crown still hasn't been taken away. A strong IPO tradition, the relevance and size of the London Stock Exchange and the Alternative Investment Market create basis for further development. In addition to structural factors, regulatory reasons underlie the development of the equity crowdfunding market in the UK. The regulatory setting for alternative finance in the UK, defined by the Financial Conduct Authority (FCA), is perceived as a properly regulated market with a set of well-defined asset classes (Vismara, 2014). Among them, equity crowdfunding is the class with the highest growth rates over recent years. FCA regulates loan-based and investment-based crowdfunding, while donation-based and

prepayment or rewards-based crowdfunding are exempt due to the lack of financial gain from these activities (Financial conduct Authority). The FCA publically acknowledged the full authorisation of 24 firms for equity crowdfunding activities as of March 2016 (Crowdfund Insider 2016). The FCA defines the instruments traded on investment-based crowdfunding as "non-readily realisable securities" that are not listed on regulated stock markets, and are distributed and sold over the internet. Given this definition, the key activities performed by investment-based crowdfunding, especially those in the equity crowdfunding space, already fell under the FCA's regulatory purview. As such, requirements around disclosure, client monies, and promotion were already in place for platforms in the space. New rules pertaining to investment-based crowdfunding-related primarily to marketing restrictions, in the form of consumer protection rules, which dictate how firms can make direct offers to retail clients, and how said retail clients are defined (Crowdfund Insider 2016). Based upon their ability to meet certain criteria, the FCA divides retail consumers into three categories: the high-net worth individual, the sophisticated investor and the ordinary retail investor. Depending upon the categorisation of the individual investor, a platform may only direct offer promotions to retail consumers that meet the following criteria:

- Certified high net-worth or sophisticated investors;
- Ordinary retail investors who receive regulated advice;
- Ordinary retail investors who invest less than ten percent of net assets.

In this instance, firms are required to check consumer understanding of risks if not receiving regulated advice. Platforms operating in the investment-based crowd- funding space must also verify that the retail investor is aware of the risks associated with their activity (Crowdfund Insider 2016). FCA regularly updates the rules and publishes reviews which are open to public comment on its website. Of note is the especially high satisfaction with the existing regulation. 89% of alternative finance platforms consider existing regulation "adequate and appropriate" (Zhang et al 2016). The equity crowdfunding rules in the UK are therefore considered to be the reference rules, successful application of which has allowed UKs equity crowdfunding industry to achieve substantial growth.

## **2.2. United States of America**

In the US, as a general rule, securities offered to the general public must be registered with the Securities and Exchange Commission (SEC). A notable exemption to this rule are offers made to accredited investors – individuals with a net worth of at least \$1,000,000 or who have income of at least \$200,000. Apart from this, US legislation previously allowed for few exceptions, making equity crowdfunding practically inoperable (Griffin, 2012).

The situation changed in 2012 with the Jumpstart Our Business Startups (JOBS) Act. Under this act, issuers are not required to file a registration statement with the SEC or at the state level if:

- The amount raised does not exceed \$1,000,000 during a 12-month period;
- The transaction is conducted through a broker or funding portal registered with the SEC;
- The amount sold to a single investor does not exceed the greater of either \$2,000 or 5 percent of the annual income or net worth of such investor if either the annual income or the net worth of the investor is less than \$100,000, and 10 percent of the annual income or net worth of such investor if either the annual income or net worth of the investor is equal to or more than \$100,000. In any case, the maximum aggregate amount sold to a single investor shall not exceed \$100,000;
- The issuer discloses the required information to potential investors. In particular, if the aggregate target offering amount is equal to or below \$100,000, issuers must provide their most recent income tax returns and financial statements, which must be certified by the principal executive officer of the issuer. For issues of more than \$100,000 but less than

\$500,000, financial statements must be provided and reviewed by a public accountant, who should be independent from the issuer. Furthermore, the accountant must use professional standards and procedures for the review. For issues of more than \$500,000, audited financial statements must be provided by the issuer (Wilson, Testoni, 2014).

The final part of these rules, Tier III, entered into force on October 30, 2016, and therefore allowed for true equity crowdfunding. As part of the provision of the law, three new institutions have been founded to provide education and advocacy: National Crowdfunding Association, Crowdfunding Professional Association and CrowdFund Intermediary Regulatory Advocates.

### **2.3. China**

China has been a latecomer to the crowdfunding wagon, but has since benefited from the experience of the other countries. The unregulated market allowed for some major frauds to be committed, especially the Ezubao. Ezubao was accused of operating a large Ponzi scheme and losing about 50 billion yuan (\$7.6 billion) from about 900,000 investors (Reuters 2016). Such happening encouraged Chinese government to start work on a stricter regulation. In December 2014 The Securities Association of China has published the Consultation Draft called “Measures for the Administration of Private Equity Crowd Funding”, thus for the first time producing specific regulation for crowdfunding. The requirements for the investors were lowered, though by many, they have remained high. The draft regulations require investors to be accredited, meaning that anyone who wants to invest in equity crowdfunding projects must meet at least one of the following requirements:

- invest at least RMB 1 million in a single project
- possess net assets of RMB 10 million
- possess financial assets of RMB 3 million and having an annual income of at least RMB 500,000 for the past five years (Blace, Grubisic 2017).

Limitations on “unknown investor” and a limit of 200 investors per company remained in place. Furthermore, with Guiding Opinions on Expanding Maker Space to Promote Innovation and Business Startups by General Public from March 2016 and new rules on online lending from August 2016, China has demonstrated the intention to regulate crowdfunding market more strictly than before, and seemingly in a less flexible way than the UK or USA. The impact of such actions remains to be seen.

### **2.4. European Union**

Although the European Union is not a single state, it does have unique regulatory authority on the market issues and its decisions impact the legislative of all 27 Member countries. After the Capital Market Union Action plan was defined, special working groups of the European Commission were founded. Several reports and communications were produced on the crowdfunding. For now, the European Commission declaratively supports and promotes crowdfunding, but hasn’t announced the intention to more closely regulates it. Still, some rules still apply for the crowdfunding actions, for example: the Prospectus Directive, the Payment Services Directive, MiFID, CRD IV, AIFMD, the Consumer Credit Directive, the Distance Marketing of Financial Services and the Regulations on Capital Requirements, Venture Capital, European Social Entrepreneurship Funds and possibly some other, like the Unfair Commercial Practices Directive, Unfair Contract Terms Directive and Data Protection Directive. Only some of these instruments would apply to a given business model and only in specific cases, depending on the financial crowdfunding campaigns design (such as the amount of money being raised) (Blace, Grubisic 2016).

Therefore, until the Commission deems that the action is necessary, the EU member states have the freedom to regulate crowdfunding as they see fit (which, indeed, 7 states have already done).

### 3. SIZE OF THE MARKET

Although not comparable with traditional financing instruments such as direct investments, bank loans and venture capital, the rate of growth of the equity crowdfunding is very high.

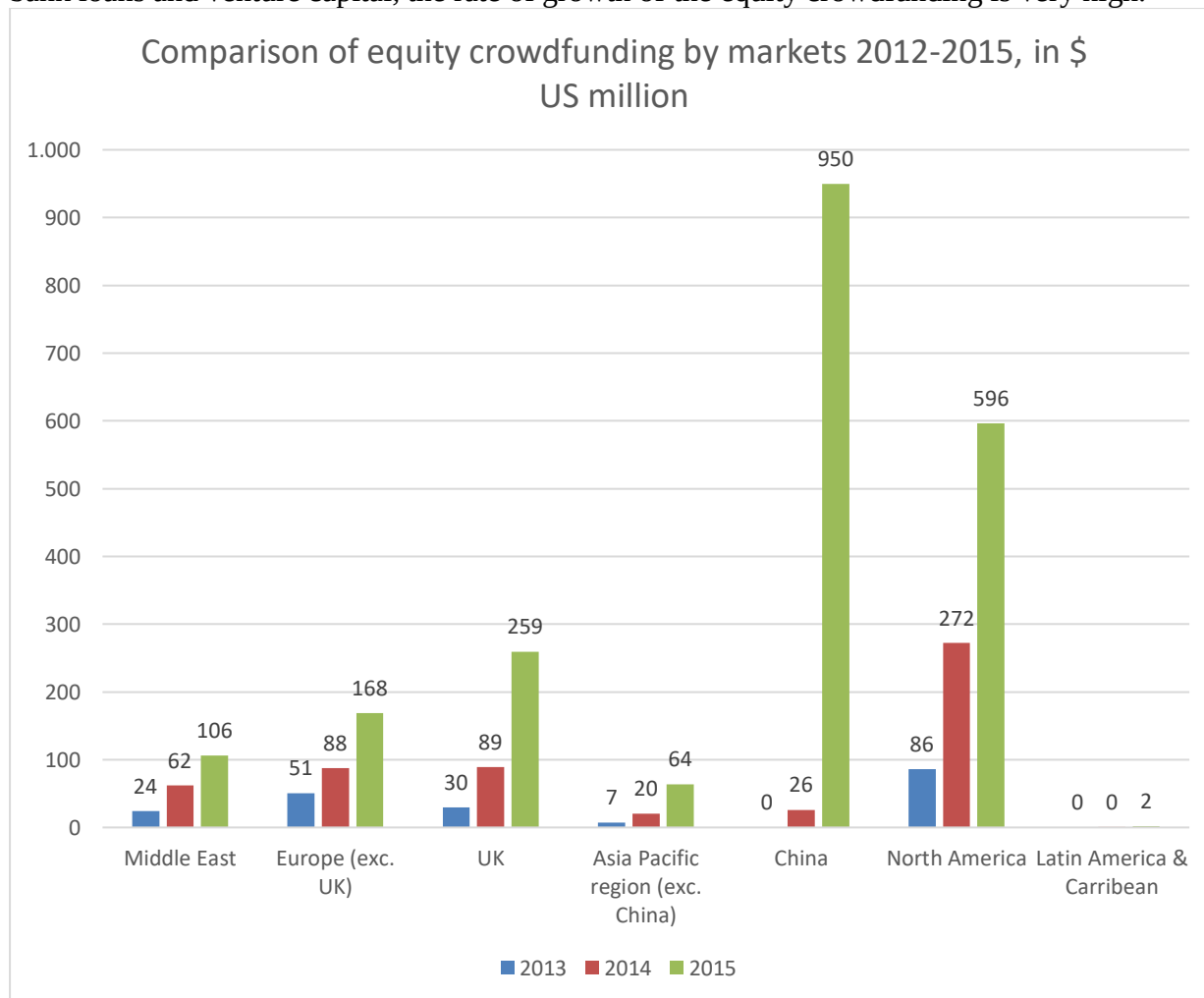


Chart 1: Total regional online alternative finance volumes, in € EUR billion

(Source: The Africa and Middle East, alternative finance Benchmarking report, Cambridge Centre for Alternative Finance, February 2017, Breaking New Ground, The Americas alternative finance benchmarking report, Cambridge Centre for Alternative Finance, April 2016, Sustaining momentum, the 2<sup>nd</sup> European alternative finance industry report, Cambridge Centre for Alternative Finance, September 2016, Harnessing Potential: The Asia-Pacific Alternative Finance Benchmarking Report, Cambridge Centre for Alternative Finance, March 2016, Pushing boundaries: The 2015 UK Alternative Finance Industry Report, Cambridge Centre for Alternative Finance, February 2016, ).

Note: USA includes data for Canada, however, given the small amounts of money raised through equity crowdfunding in Canada, the impact is negligible.

Looking at the data in table 1, it is obvious that the China dominates the rest of the world in the total amount of financing secured through equity crowdfunding. The special circumstances of unregulated and unhindered market coupled with the explosive GDP growth, huge population and economy together with the technically savvy population have created fantastic opportunities which have been used by the Chinese (Blace, Grubisic 2017). USA, where the crowdfunding originated from, is a strong second market, with UK in the third place with a very highest per capita amount of finance. Europe is trailing far behind the UK, probably because Germany, the strongest economy in EU, didn't yet regulate the equity crowdfunding. Also,

perhaps even more important, investment in EU countries traditionally relies more on bank loans, with venture capital and other forms of investments being secondary sources of capital. Middle East is not far behind, thanks to the very strong startup scene in Israel and some equity crowdfunding in Saudi Arabia and Qatar. The rest of Asian countries with the exception of Australia is behind, and equity crowdfunding in Africa, Latin America and Caribbean is almost non-existent.

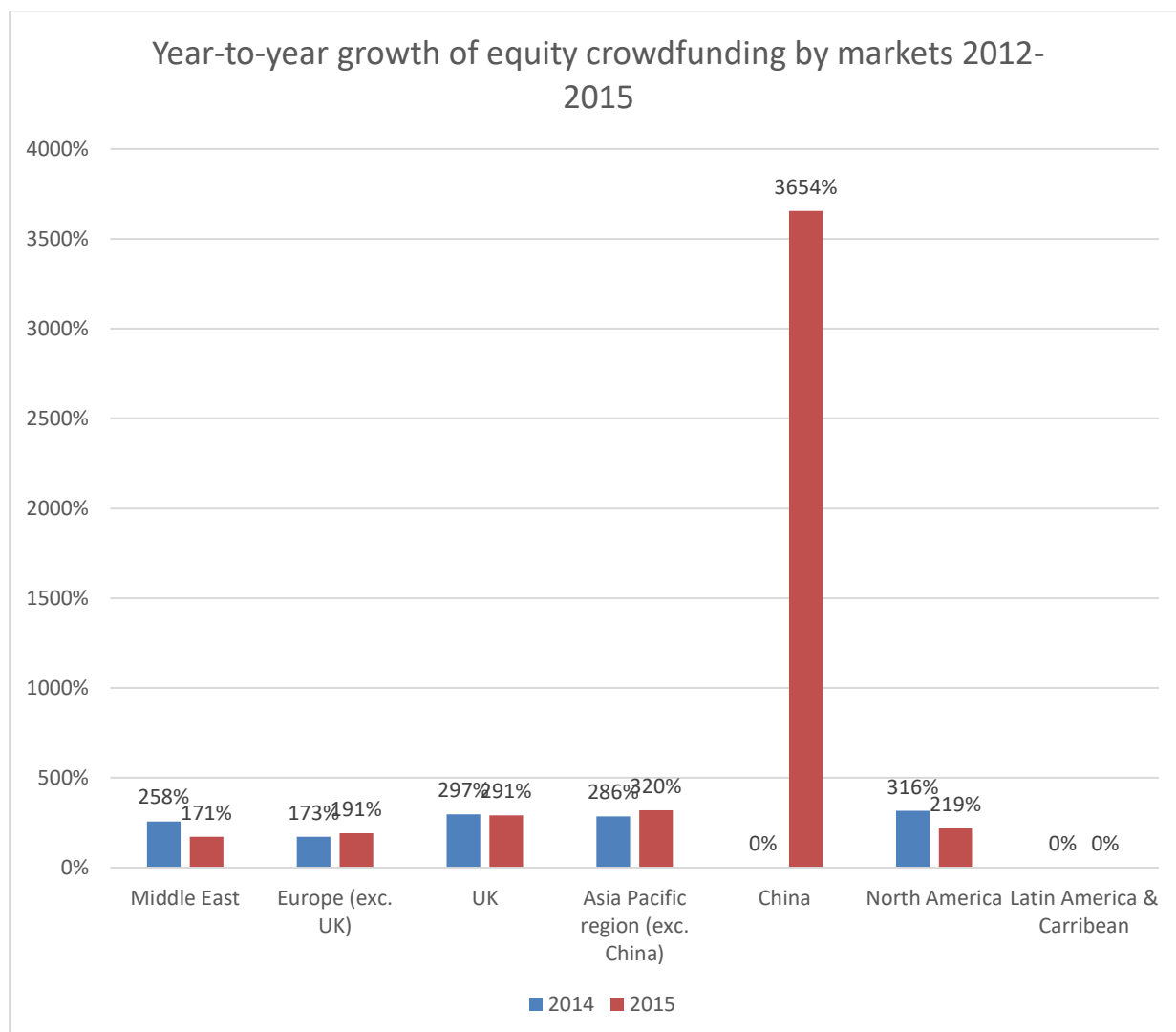


*Chart 2: Year-to-year growth of equity crowdfunding by markets,*

*(Source: The Africa and Middle East, alternative finance Benchmarking report, Cambridge Centre for Alternative Finance, February 2017, Breaking New Ground, The Americas alternative finance benchmarking report, Cambridge Centre for Alternative Finance, April 2016, Sustaining momentum, the 2<sup>nd</sup> European alternative finance industry report, Cambridge Centre for Alternative Finance, September 2016, Harnessing Potential: The Asia-Pacific Alternative Finance Benchmarking Report, Cambridge Centre for Alternative Finance, March 2016, Pushing boundaries: The 2015 UK Alternative Finance Industry Report, Cambridge Centre for Alternative Finance, February 2016, ).*

*Note: USA includes data for Canada, however, given the small amounts of money raised through equity crowdfunding in Canada, the impact is negligible.*

The growth rate in China in 2015 has been an incredible 3650% in 2015, while no growth in 2014 symbolizes how late crowdfunding has started in that country. Although the regulatory framework is not yet completely set in place, it seems it will be difficult to stop the incredible



growth. Rate of growth in USA seems to be slowing down in 2015, although the new Tier III of the JOBS act entered into force in 2016 so the USA market should accelerate growth in the future. UK and Asia Pacific region seems to have a steady increase, while the Middle East is slowing down. This is somewhat surprising, given that it is unknown if the Islamic banks have been counted given that their operating model (no interests but rather ownership from the loans).

#### **4. CONCLUSION**

The forever changing legal and financial landscape which will shape the development of crowdfunding is impossible to exactly predict. However, without hesitation, it can be concluded that the growth will continue in the future. It is to be expected that great many countries, especially in the EU, will continue to develop their own legislative frameworks, even without the initiative from the European Commission. The legislative model in place in the UK has proved itself to be successful, given that it has ensured the steady growth and a high user satisfaction. JOBS Act has entered into effect too recently to be accurately measured, and it will be most interesting to obtain the final number from the accurate reports for 2016 and thus further the conclusion that proper regulation is essential for the equity model to become both legal and providing sufficient freedom and security for further development. China will again benefit from not being first and thus buy itself more time to implement the optimal model. The caution with which it has implemented the legislative changes after the Ezubao case show that the government is aware of the possible danger of fraud. The implications should be taken seriously, especially by those countries which don't have a proper legal framework in place. Although still in infancy, the equity crowdfunding is generally gaining more traction in the world and will increase in importance. The more complex nature of this particular model provides great benefits, unlocking new opportunities for both entrepreneurs and investors, but unlike more basic crowdfunding models (more eminent donation and reward-based), lessons learned so far teach us that equity crowdfunding requires more protection for the investors. It is up to the national governments (or ideally supra-national organizations to emphasize inherent international aspect) to respond appropriately.

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## THE EFFECTS OF ORGANIZATIONAL CYNICISM ON TURNOVER INTENTION: A SURVEY IN HOSPITALITY INDUSTRY

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### ABSTRACT

*In the recent years organizational commitment started to be an important matter between psychology, sociology, social psychology and organizational behavior branches. Employees with a high commitment to the organization are deeply connected to the organization's goals and objectives they fulfill their duties properly and it costs nearly three times an employee's salary to replace someone, which includes recruitment, severance, lost productivity and lost opportunities.*

*Employees leave organizations for many reasons like lack of commitment, motivation and organizational cynicism. Organizational cynicism is the employees' negative emotion against organization. This behavior of employees in the organization are caused by emotions such as disbelief and distrust. The aim of this study is to search the effects of general cynicism levels, organizational cynicism levels, negative attitudes and their effect over turnover intention and organizational commitment.*

*For this purpose data obtained by the questionnaire; cynicism perceptions and level of intention to leave were tested through hotel industry located in İstanbul. 375 questionnaires were accepted and statistically evaluated.*

*Desired analysis has been applied in order to determine the general cynicism and organizational cynicism and their effect to turnover intention.*

*As a result of analysis of the obtained results, a significant correlation was found between organizational commitment and turnover intention.*

**Keywords:** Cynicism, organizational commitment, turnover intention, hotel industry

### 1. INTRODUCTION

Employees are the most valuable resource of an organization. It is very important for management to understand employee's needs in order to implement the business plan effectively. Workforce turnover is considered a sticky phenomenon that causes problems for business. Losing the qualified workforce leads to reduction on quality, productivity, innovation and competitiveness. Furthermore, turnover causes significant cost in the recruiting and training the new employees (Çınar et al, 2014. Abbasi et al., 2008). Employees with a high commitment to the organization are deeply connected to the organization's goals and objectives they fulfill their duties properly and it costs nearly three times an employee's salary to replace someone, which includes recruitment, severance, lost productivity and lost opportunities. Employees leave organizations for many reasons like lack of commitment, motivation and organizational cynicism. Organizational cynicism is the employees' negative emotion against organization. This behavior of employees in the organization are caused by emotions such as disbelief and distrust.

Academicians have begun to recognize the profound impact that cynicism can have on organizations and the importance of understanding this seemingly pervasive phenomenon. Goldner and his colleagues were the first scholars to examine how aspects of cynicism might affect organizations and their members (Goldner, Ritti, & Ference, 1977).

This has been supported that the antecedents of organizational cynicism are important to be investigated because it could easily affecting employees' satisfaction and commitment (Simha, Elloy, & Huang, 2014).

The aim of this study is to search the effects of general cynicism levels, organizational cynicism levels, negative attitudes and their effect over turnover intention and organizational commitment.

## **2. CYNICISM AND ORGANIZATIONAL CYNICISM**

Organizational cynicism is defined as an attitude formed by faith, feelings and behavioral tendencies. It is a negative attitude including the three dimensions developed by a person to his organization, namely; cognitive, affective, and behavioral structure of the cynical construct (Dean et al., 1998; Stanley et al., 2005, Wageeh, 2013).

There was a significant relationship between the number of complaints with cynicism related to organizational change and reduction of organizational commitment (Wanous et al., 2000). The researchers were able to identify three types of organizational cynicism as; Cynicism about change, cynicism about the management and general cynicism (Stanley et al., 2005).

The cognitive dimension of organizational cynicism is the belief in the organization's lack of honesty. It is the belief that the organization's practices lack justice, honesty and sincerity. Cynics believe that those principles are mostly forfeited. They are replaced by unprincipled actions and immoral attitudes as if they are norms. Besides, cynics may believe that human beings are untrustworthy and incoherent in their behaviors.

The affective dimension of organizational cynicism refers to the emotional/sentimental reactions to the organization. The sensitive/emotional consists of strong emotional reactions towards the organization. Cynics may feel disrespect and anger towards their organizations; or feel discomfort, hatred and even shame when they think about their organizations. Thus, cynicism is related to various negative senses.

The behavioral dimension of organizational cynicism refers to negative tendencies and mainly humiliating attitudes. This dimension consists of negative and frequently critical attitudes. Strong critical expressions towards the organization are the most prominent of behavioral tendencies. These may occur in various forms, mostly expressions about the organization's lack of honesty and sincerity. Dean et al. (1998) have synthesized these dimensions into their definition of organizational cynicism as (1) a belief that the organization lacks integrity; (2) negative affect toward the organization; and (3) tendencies to disparaging and critical behaviors toward the organization that are consistent with these beliefs and effects.

## **3. ORGANIZATIONAL COMMITMENT**

Organizational commitment has been defined as a psychological state that binds an employee to an organization, thereby reducing the incidence of turnover (Allen & Meyer, 1990). Organizational commitment and job satisfaction are major job attitudes (Dewettinck & Van Ameijde, 2011). The researchers have focused on the correlation between organizational commitment and job satisfaction and have been able to conclude that job satisfaction leads to organizational commitment (Lane et al., 2010). Mowday, Porter & Steers (1982) outlined the

distinction between attitudinal commitment, a mindset in which individuals consider the congruency of their goals and values with those of their employing organizations, and behavioral commitment, the process by which individuals' past behavior in an organization binds them to the organization. Organizational commitment is the employees' state of being committed to assist in the achievement of the organization's goals, and involves the employees' levels of identification, involvement, and loyalty (Caught & Shadur, 2000).

#### 4. INTENTION TO LEAVE

Intention to leave is defined as an employee's plan of intention to quit the present job and look forward to find another job in the near future (Ergun & Gurleyen 2016, Purani & Sahadev, 2007). Employees who are satisfied and committed are more likely to attend work, stay with the organisation, be punctual to work, perform better than employees who are not satisfied (Koslowsky, et al, 1997; LePine, et al, 2002)

#### 5. FINDINGS

A five - point Likert scale, ranging from “1 = strongly disagree” to “5 = strongly agree” was used. The study sample is obtained by applying to the survey data, Data was analyzed with the aid of SPSS 21 analysis software. In this context, primarily Barlett's sphericity tests are performed compliance with Factor Analysis, later Factor Analysis and Reliability tests were conducted.

*Table 1. Demographic Findings*

|                       |                  | F   | (%)   |
|-----------------------|------------------|-----|-------|
| <b>Gender</b>         | Female           | 165 | %44,0 |
|                       | Male             | 210 | %56,0 |
| <b>Age</b>            | 18-25            | 96  | %25,6 |
|                       | 26-35            | 151 | %40,3 |
|                       | 36-45            | 90  | %24,0 |
|                       | 46-55            | 33  | %8,8  |
|                       | 55 ve üzeri      | 5   | %1,3  |
| <b>Marital Status</b> | Single           | 187 | %49,9 |
|                       | Married          | 188 | %50,1 |
| <b>Education</b>      | Bachelor         | 138 | %36,8 |
|                       | Masters or above | 22  | %5,9  |
|                       | Mid School       | 19  | %5,1  |
|                       | High School      | 96  | %25,6 |
|                       | Primary          | 7   | %1,9  |
|                       | College          | 93  | %24,8 |
|                       |                  |     |       |
|                       |                  |     |       |

A total of 375 valid respondents consisting of 210 males (44 %) and 165 females (56 %) participated in the study. The majority age group was between 26-35 years old. Half of the respondents were married (50.1%). The majority of the respondents has bachelor degree (36.8%).

*Table 2: Reliability Analysis*

| Cronbach's Alpha | N of Items |
|------------------|------------|
| ,943             | 16         |

According to the above table, the test statistical reliability was calculated as 0,943.

*Table 3: KMO and Bartlett's Test*

|                                                  |                    |          |
|--------------------------------------------------|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | ,922     |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 3587,272 |
|                                                  | df                 | 91       |
|                                                  | Sig.               | ,000     |

KMO value 0,922 was found that means data set is suitable for factor analysis.

*Table 4: Total Variance Explained*

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              | Rotation Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % | Total                             | % of Variance | Cumulative % |
| 1         | 7,67                | 54,787        | 54,787       | 7,67                                | 54,787        | 54,787       | 3,467                             | 24,766        | 24,766       |
| 2         | 1,377               | 9,833         | 64,62        | 1,377                               | 9,833         | 64,62        | 2,847                             | 20,337        | 45,104       |
| 3         | 0,91                | 6,502         | 71,122       | 0,91                                | 6,502         | 71,122       | 2,553                             | 18,235        | 63,339       |
| 4         | 0,803               | 5,736         | 76,858       | 0,803                               | 5,736         | 76,858       | 1,893                             | 13,519        | 76,858       |
| 5         | 0,547               | 3,904         | 80,762       |                                     |               |              |                                   |               |              |
| 6         | 0,414               | 2,958         | 83,72        |                                     |               |              |                                   |               |              |
| 7         | 0,377               | 2,692         | 86,412       |                                     |               |              |                                   |               |              |
| 8         | 0,368               | 2,627         | 89,039       |                                     |               |              |                                   |               |              |
| 9         | 0,323               | 2,305         | 91,345       |                                     |               |              |                                   |               |              |
| 10        | 0,306               | 2,188         | 93,533       |                                     |               |              |                                   |               |              |
| 11        | 0,283               | 2,023         | 95,556       |                                     |               |              |                                   |               |              |
| 12        | 0,237               | 1,694         | 97,249       |                                     |               |              |                                   |               |              |
| 13        | 0,209               | 1,491         | 98,741       |                                     |               |              |                                   |               |              |
| 14        | 0,176               | 1,259         | 100          |                                     |               |              |                                   |               |              |

According to factor analysis, questionnaire questions were collected in 4 factors. The variance ratio explained is 76,858%.

Table 5: Rotated Component Matrix

|     | Component |      |      |      |
|-----|-----------|------|------|------|
|     | 1         | 2    | 3    | 4    |
| B12 | ,195      | ,746 | ,198 | ,284 |
| B13 | ,216      | ,841 | ,123 | ,056 |
| B14 | ,406      | ,653 | ,282 | ,123 |
| B15 | ,425      | ,724 | ,082 | ,148 |
| B17 | ,719      | ,309 | ,247 | ,237 |
| B18 | ,749      | ,399 | ,127 | ,154 |
| B19 | ,693      | ,267 | ,402 | ,125 |
| B20 | ,767      | ,266 | ,201 | ,242 |
| B21 | ,700      | ,231 | ,377 | ,273 |
| B23 | ,192      | ,119 | ,879 | ,140 |
| B24 | ,259      | ,175 | ,825 | ,217 |
| B25 | ,395      | ,269 | ,654 | ,286 |
| C26 | ,177      | ,208 | ,276 | ,840 |
| C27 | ,330      | ,150 | ,183 | ,830 |

Factor loads are given above and factors are determined under four groups as :

1. Factor (B12, B13, B14, B15) = Cognitive Variables
2. Factor (B17, B18, B19, B20, B21)= Affective Variables
3. Factor (B23, B24, B25) = Behavioral Variables
4. Factor (C26, C27) = Turnover Intention Variables

### Results of Correlation Analysis

Correlation analysis was performed for the four variables obtained as a result of the factor analysis in the study. The Pearson correlation values calculated are as follows:

Table 6: Pearson Correlation Value

|                     |                     | Cognitive Variable | Affective Variable | Behavioral Variable | Turnover Intention |
|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|
| Cognitive Variable  | Pearson Correlation | 1                  | ,723**             | ,526**              | ,488**             |
|                     | Sig. (2-tailed)     |                    | ,000               | ,000                | ,000               |
|                     | N                   | 375                | 375                | 375                 | 375                |
| Affective Variable  | Pearson Correlation | ,723**             | 1                  | ,677**              | ,594**             |
|                     | Sig. (2-tailed)     | ,000               |                    | ,000                | ,000               |
|                     | N                   | 375                | 375                | 375                 | 375                |
| Behavioral Variable | Pearson Correlation | ,526**             | ,677**             | 1                   | ,560**             |
|                     | Sig. (2-tailed)     | ,000               | ,000               |                     | ,000               |
|                     | N                   | 375                | 375                | 375                 | 375                |
| Turnover Intention  | Pearson Correlation | ,488**             | ,594**             | ,560**              | 1                  |
|                     | Sig. (2-tailed)     | ,000               | ,000               | ,000                |                    |

|   |     |     |     |     |
|---|-----|-----|-----|-----|
| N | 375 | 375 | 375 | 375 |
|---|-----|-----|-----|-----|

According to table; Correlation values between Cognitive, Affective and Behavioral Variables and Turnover Intention Variables are; 0,488, 0,594 and 0,560 respectively. All of the values seem to be positive. Therefore, it can be said that there is a positive relationship between the factors related to the Cynicism Scale and the Turnover Intention Scale. While the relationship between the Affective Variable and the turnover intention variable is stronger than the other variables, The relationship between Cognitive Variable and Turnover Intention Variant is weaker than the other two variables. Based on the results obtained by researcher, the following conclusions are; Since organizational cynicism is associated with many other concepts such as job satisfaction and organizational commitment, managers should deepen the perception of organizational justice that can be realized without spending much effort and resources. In organizations with a high sense of justice, motivation and internal loyalty, employees are more likely to be more loyal to their work and organizations.

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## NATURAL MONOPOLY REGULATION: THE CASE OF WATER SUPPLY IN CROATIA

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### ABSTRACT

*The Natural Monopoly in the water supply in Croatia, its organization and water management are been analyzed in this paper because water is the basis of life. The Natural Monopoly is a market structure created by the subadditivity of costs. Due to the negotiation process, the Croatian legal regulations were harmonized with the EU Directives. Croatia is a water wealthy country and is responsible for the efficient use of its good. Water financing, which components define the price that consumers pay for the service, applicable acts in the sector of water supply, are analyzed in this paper. Regulation in water supply is needed, and the best option is an independent regulator, who will be most focused on controlling prices, and efficiency in the water supply in general. In the Strategy of Croatian Waters there is an idea of passing the ownership of Water supply and noneconomic price in the future from public to municipalities and cities.*

**Keywords:** *Natural monopoly, water supply, water management, water price, regulation*

### 1. ECONOMIC ANALYSIS OF THE NATURAL MONOPOLY IN THE CASE OF WATER SUPPLY MARKET IN CROATIA

#### 1.1. Water supply market in Croatia

Water supply is a typical monopolistic activity. In Croatia, and in inner area, many companies are engaged in water supply, but they are all actually monopolists, because consumers in a particular area cannot choose from whom to buy water, and even under what conditions they will buy. Therefore, there is no doubt that we are talking about a monopoly market (markets). As in any monopoly market, the initiative for the establishment of (changing) the price of water comes from the supply, or from the manufacturer - the company which carries out water supply activity. The main way in which consumers can react to changes in the price of water is changing the amount of consumption, i.e., an increase or decrease in water consumption. Possibility of substitution of sources of supply is a very limited. Certain consumers may have some possible replacement sources of water supply to a certain extent, instead of buying water from water supply companies, they can use rainwater or extract water on their own from underground or surface water. However, it is limited in our area for several reasons, it is almost impossible in cities mostly because of the Croatian karst terrain there is no easily usable surface, or even underground water, the use of (accumulated) rainwater is coupled with significant investments and limited capacity. So, every form of independent water supply is connected with significant costs. Of course, if the price of tap water increases, the acceptability of the use of alternative sources rises. However, the use of alternative sources in our modern conditions is practically marginal and can, to a significant level, be left out of this consideration. In any case, the reaction of consumers (for a change - increasing the price of water) by direct reduction of consumption, either by recourse to alternative sources of supply, will be reflected in the demand

curve for a monopolist's product (water companies). Determining a price, therefore, the water company has to take into account the demand, and the demand curve, the elasticity of demand, but also the relationship of their own revenues and expenses. Fragmentation is the typical characteristic of the Croatian utility sector, which is seen by the number of utility companies operating in the country. Thus, in the public water supply system operate 98 public water utility companies and 89 drainage and wastewater treatment companies, a large number of them perform both activities. The activity is carried out by the 127 service areas, covering 550 cities and municipalities. Some of the utility companies, 16 of them perform six or more public utilities, such as the collection and disposal of household waste, cleaning and other services. 36% of companies carry out only one activity. Part of the utility companies carry out commercial activities and continuously do construction, mostly for their own use. The fragmentation of the utility sector and dealing with different activities significantly affect its performance.

## **1.2. Legal framework**

Water supply represents the public interest and as such should be covered by special regulations and acts. The Water utility sector in Croatia is regulated by The Water Act, that "regulates and defines the legal status of water and water estate, the preconditions for their use and protection, and the activities and organization of water management"<sup>1</sup>, The Water Management Financing Act and The Utilities Act are determined by the following municipal services: water supply, drainage and waste water management<sup>2</sup>. Water is the most valuable resource that a country can use. To maintain such a resource, water management needs to be put under special supervision and control by the country, as are the European Union countries party to the Convention on the adoption of EU Water Directives. A very important document that governs the policy of water management is "The Water Framework Directive 2000/60/EC", which requires the achievement of good water status, surface and groundwater, the fulfillment of the required standards by 2015, as well as monitoring of the status of all waters and protected areas. The purpose of this directive is the introduction of a permanent and transparent planning process that is carried out in a planned six-year cycles, with the obligation of reported forms to the European Commission on the results of the implementation<sup>3</sup>. In addition to these directives there are others concerning the protection of the nature and the environment. Drinking water area is regulated by "Surface Water for Abstraction Directive 75/440/EC" which defines the rules for quality monitoring and categorization of surface waters that are related to human consumption. The same Directive establishes the appropriate methods of the purification of these waters, which directly affect human health. "Drinking Water Directive 98/83/EC" defines limits and desirable quality standards and monitoring of drinking water released for consumption. When Croatia was a candidate for the European Union, it was obliged to coordinate its management to the EU Directives.

### **1.2.1. Applicable acts**

The history of organized Water management in Croatia is divided into:

1. Period from the 19th century until the end of 1918
2. Period from December 1st 1918 to May 1945
3. Period from 1945 to 1990
4. The period from 1991 to 2009
5. Period after 2009

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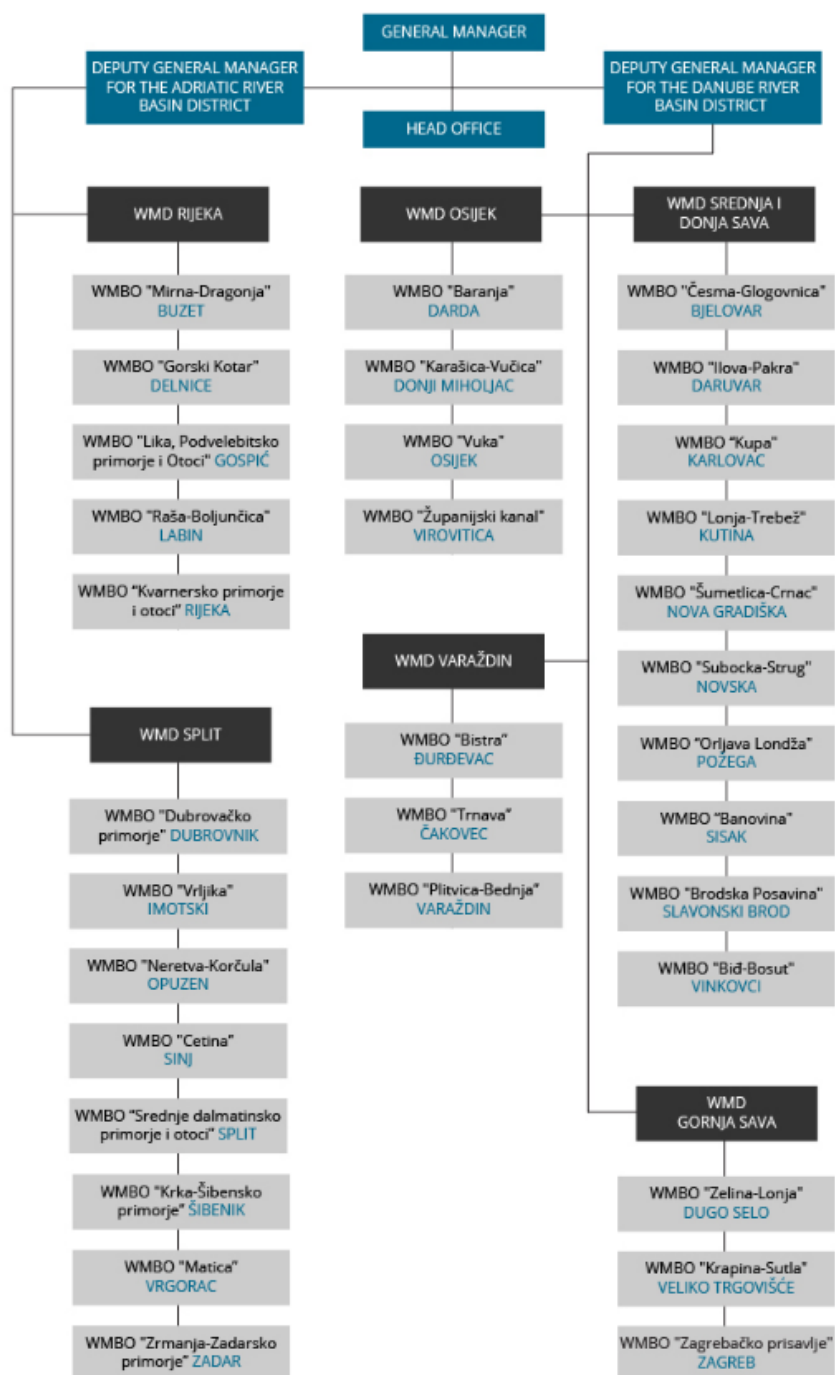
<sup>1</sup> Strategija upravljanja vodom (2009), Zakonski okvir str.36

<sup>2</sup> The Utilities Act, Official Gazette, No. 26/03, 82/04

<sup>3</sup> Kozina, Kezele, Martinčević, (2011) Upravljanje vodoopskrbom, Tehnical Journal, Vol.5 No.1, str.139-141

Water Act and The Water Management Financing Act ("Official Gazette" No. 153/2009) adopted in 2009 are in effect, as well as their fifty-acts. This rounded of the legal framework for the Water management and harmonized with the EU acquis. Under the provisions of the Water Act for the purpose of water management, Croatia is divided into four water districts, which are: The Water Basin District of the Sava, Water district of the Drava and the Danube rivers, the Water district of the Littoral and the Istrian basins and the Dalmatia basin district.

Figure 1. Structure of the Hrvatske vode

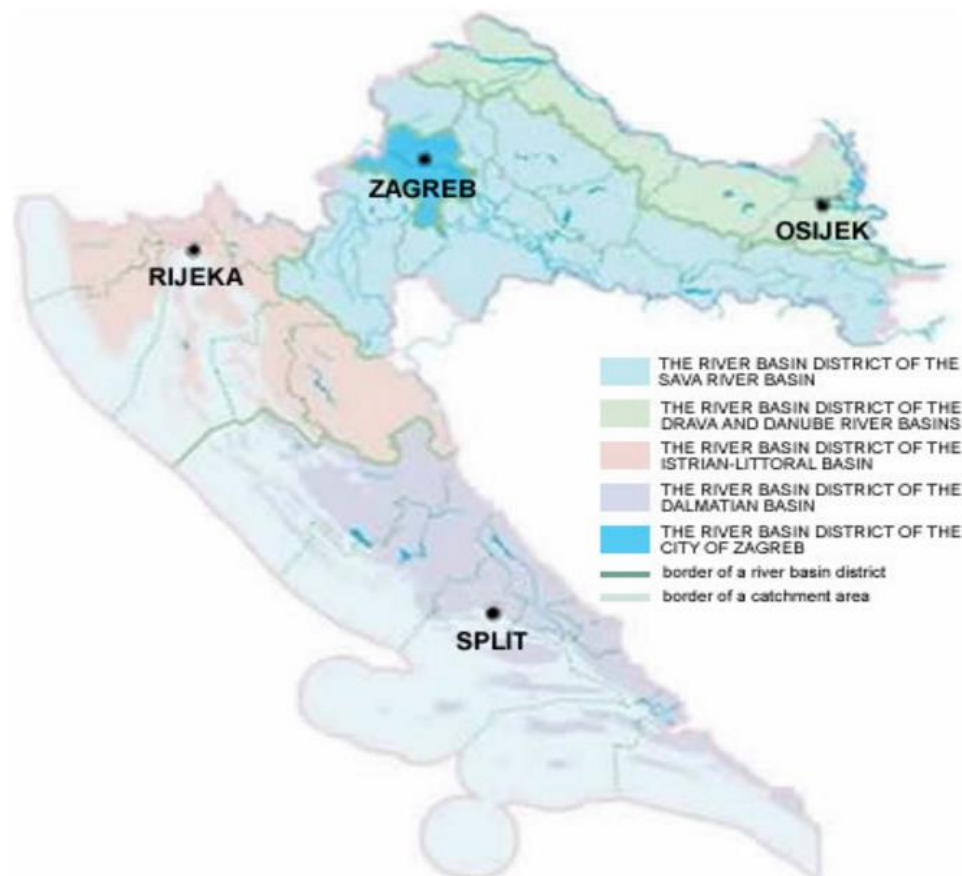


Source: Hrvatske vode, Organization, <http://www.voda.hr/en/organization>

Further division is into the 34 basin districts, managed by 32 basins and water management departments for the basin district of the City of Zagreb. The Croatian Water Act refers to the entire Croatian territory and covers all water and basin districts.

The responsibility for managing waters and public water resources, protection and hydro melioration of water structures is taken by the Hrvatske vode through water management offices and departments as well as non-profit organizations. Besides the central service in Zagreb, there are five organized water management departments and water management offices in basin districts within them.

Figure 2. Water Management Departments



Source: Hrvatske vode, Organization, <http://old.voda.hr/001-130>

### 1.2.2. Violation of the act on protection of competition in the public water supply and drainage

During 2004 and 2005 the Agency for Competition was solving a case initiated by the Croatian Association for Consumer Protection (CACP) against the Ponikve d.o.o. utility company located on the Island of Krk. This case can be example of the Competition Act (ZZTN)<sup>4</sup> application in this sector. The CACP is an independent, nonprofit organization that has the role of advising consumers and taking measures to protect their interests in relations in which they come by acquiring goods and services on the market. There is the active role of consumer protection associations in detecting and processing the behavior of individual entrepreneurs which infringes the equality of consumers in respect of paying price for the same kind of services. The Ponikve d.o.o utility company adopted the Decision on payments and tariffs for

<sup>4</sup> Competition Act, Official Gazette, No. 122/03

utility services of water supply, drainage and waste water treatment, transport and disposal of waste in the area of the Island of Krk. This decision was controversial because it divides households to as many as 32 consumer groups, depending on the annual amount of consumed water. Otherwise, the Ponikve d.o.o was founded by the local government of the city of Krk and the five municipalities on the Island of Krk and the Hrvatske vode for municipal activities under the Public Utilities Act. The act established the principles, operation and financing of utility services as well as other matters of efficient performance. This does not affect the possibility of the Competition Act (ZZTN) application to legal entities, based on special regulations, are entitled to exclusive carrying out certain activities, unless this would prevent a legal and factual performing tasks assigned to them by special regulations<sup>5</sup>. Furthermore, the Ponikve d.o.o. utility company is an example of a perfect monopoly in terms of water supply, drainage and wastewater management in the Island of Krk area because it has no competitors in the sector. "An entrepreneur is in a dominant position when due to its market power it can act in the relevant market considerably independently of its actual or potential competitors, consumers, buyers or suppliers, especially if he is a monopolist and there are no competitors in the activities he performs"<sup>6</sup> and so the operator abused its dominant position determining discriminatory prices, so consumers who annually consume less water pay a higher price of water per cubic meter. The controversial form of tariffs with consumers division on 32 Class has led to unfair relationship between water consumption and prices paid for it, and, in addition does not encourage the rational use of water. For example, the price of 15 cubic meters of consumed water per year was about the same as the price of 150 consumed cubic meters. In other words, the tariff is determined ten-fold compensation accrual unit for low power consumption in relation to the large consumption, and as such it is deviated from the usual linear and proportionate monitoring cost and cost of consumed water. Identical tariff has been rendered by the Ponikve d.o.o. for drainage and waste water purification. The Ponikve d.o.o utility company justified such pricing by maintaining costs, but the comparison with domestic and international practice shows that these costs can be covered by the tariff models that are not discriminatory for final consumers, and it proves the abuse of a dominant position in the relevant market directly, imposing unfair prices to final customers in terms of Art. 16th Competition Act. Consequently, the CCA<sup>7</sup> issued a Decision that ordered the operator to make a new decision on tariffs, this time without imposing unfair prices. In addition, the Water Act<sup>8</sup> defines the principle of saving disposal and sustainable development of water resources, which are the common good of the Republic of Croatia and reflect the policies contained in the Framework Directive<sup>9</sup>, the EU Water Directive in 2000 based on the principle of scarcity of water resources, economic price of water, water saving, environmental protection and other guidelines related to the sustainable management of water. Controversial tariffs by the Ponikve d.o.o, as described above, do not encourage the consumers to use water resources rationally. Such a solution is not in accordance with the objectives of the Water Act and the directive of the EU to promote sustainable use of water by the permanent protection of available water resources.

The case was indicative and because it showed that a one operator's management of water supply services can, in certain cases, be subject to multiple procedures on the basis of several Croatian acts that are considered by the authorities to ensure their implementation. Thus, the Competition Act, the Utilities Act, the Consumer Protection Act can be applied, as well as some

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<sup>5</sup> Competition Act, Article 4, Official Gazette No. 122/03

<sup>6</sup> Competition Act, Article 15, Official Gazette No. 122/03

<sup>7</sup> The decision of the Agency for Protection of Competition, CACP against Ponikve d.o.o, Official Gazette, No. 132/05

<sup>8</sup> Water Act, Official Gazette" No. 153/2009

<sup>9</sup> Water Framework Directive, 2000/60/EC

other specific regulations. Legal authorities in charge of the implementation of these acts are the Agency for Protection of Competition, cities and municipalities, the State Inspectorate, the National Council for consumer protection, consumer protection associations, and the Central State Administration Office in its supervisory role of monitoring the local authorities<sup>10</sup>.

### 1.3. Pricing in the public water supply and drainage in Croatia

The market economy has relatively simple rules in terms of freedom of pricing by operators when they operate in a competitive market with multiple competitors. Intense competition among operators creates a positive effect on reducing the operating costs of each market competitor, searching new forms of cooperation in the market and synergies related to the larger supply of consumer items and lower prices for final users. Therefore, administrative intervention in the pricing of entrepreneurs can have an adverse effect on the level of investments in the equipment and the construction or maintenance of the necessary infrastructure capacity. All of these become more important when it comes to the interests of private capital and investments that are expecting fast the return on dynamic financial markets. However, the law of supply and demand is not perfect and does not always mean the access to social sensitive products and services at affordable prices for the average consumer. So, when it comes to municipal activities which have separate legal status or that operate on the basis of exclusive rights to a specific geographical area, it necessary to consider the way in which they are carried out and how their prices are formed. The organization of these activities in various countries are traditionally entrusted to local units of government, due to the natural geographical limitations to provide services, and it is the same in Croatia. The Water Management Financing Act<sup>11</sup> determines the sources of funds for financing water management and ways of their calculation and payment. However, The Utility Act<sup>12</sup> determines the supply of drinking water and drainage and waste water management plants as communal activity for which the amount of rates, tariffs, and payment is determined by the supplier services. Nevertheless, the supplier of utility services shall in any change of prices and tariffs of their services obtain a prior consent of the local government units in the area where the service is provided. At the delivered tariff the local government is obliged to respond within a period of fifteen days, and if not, it is deemed to have given its approval. Changed tariffs apply when they are accepted by local governments that hold a majority ownership of the supplier of water supply services.<sup>13</sup> The Consumer Protection Act (PGI)<sup>14</sup> provides that the authorities, in this case, cities and municipalities, which decide on the rights and obligations of consumers of public services shall establish an advisory body that includes representatives of consumer protection associations, but authorities may take decisions only after obtaining the opinion of an advisory body, in a transparent, objective and non-discriminatory manner. From the above, it follows that the application of these acts, with respect to the prescribed procedure, should allow monitoring the price changes of the water operators, appropriate consumer protection and sustainable development of water utility activities. However, it is doubtful whether it is always necessary. Public hearings on the water price increase in some Croatian cities are related to the justification for price increases in water services. Thus, for example, water supply companies often point out that under existing prices it is not possible to provide services profitably and without losses. Also, there are significant water losses in the water distribution network due to the deterioration

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<sup>10</sup> Uredba o unutarnjem ustrojstvu Središnjeg državnog ureda za upravu, čl. 13, NN 11104, 106/04, 21/05, 144/05 i 131/06

<sup>11</sup> The Water Management Financing Act, Official Gazette, No. 107/95

<sup>12</sup> The Utility Act, Official Gazette, No. 26/03

<sup>13</sup> Ostojić, Z. and Lukšić, M., (2001) Water Pricing in Croatia, Current Policies and Trends. Republic of Croatia, State Water Directorate, page.3,4

<sup>14</sup> Consumer Protection Act, Article 24/6, Official Gazette No. 79/07

of water infrastructure. In the City of Zagreb these losses are reaching, by some estimates nearly 50% of the distributed water, while in some other Croatian cities such as Rijeka, it is half. Local state governments say that incurred utility companies losses are not sustainable from the budget, and that the prices should be economic and cover the total cost of the service. Furthermore, cities and municipalities, starting with the policy of social sensitivity, often point out that they do not entirely accept the application for tariff increase, but only in a certain part, thus reducing the burden on consumers. The central government said that the latest tax changes allow retention of larger tax revenues to the local government level. Thus, the income tax is a revenue entirely of local governments. Accordingly, it is considered that the local government, through the increased tax revenues has more financial room to hold under control or mitigate the rise of citizens expenses caused by, among other things, the cost of public water supply and drainage. It is important that each subsidy policy can be independent of the State Aid Act, which regulates the conditions under which state aid may be granted.<sup>15</sup> Care should be taken that financial relations between public authorities and entrepreneurs in the public domain are transparent, so that, for example, the investment of a new capital, credit on more favorable terms than the market, debt relief and other forms of intervention in the entrepreneurs business should be recorded and matched with the state aid rules. There is also the Commission Directive on the transparency of financial relations between the Member States and public undertakings and financial transparency within certain undertakings from 2006, which was taken in the Croatian legal system by the Government's decision on the publication of rules on the state aid in the form of financial transfers to public enterprises. Essentially, the provision of water supply services from businesses in the public domain should have separate accounting from the owners' budgetary funds, i.e. the city or municipality. Previous regulations and rules do not apply to the provision of water services that have no cross-border impact, or no impact on trade in goods and services between the EU member states and the Croatian and the EU, which is most often in practice. However, the State aid rules can become relevant to the water sector if a country approaches the liberalization and the introduction of certain forms of competition. A cubic meter of water in Croatia contains at least 5 and up to 9 kinds of expenditures.

**The total cost of water** in Croatia vary in the range from 2.50 hrk to 16.00 hrk/ m<sup>3</sup> delivered water, which is not the result of the actual cost of using water, but different approaches in the formation of prices. Within rates, however, constants are a fee for water use and water protection fee, which together amount to 1.7 hrk/ m<sup>3</sup>, and they are the same for all Croatian citizens.

In most cities in Croatia water supply is also financed from fiscal revenues (local budget) of local governments. This is because the prices of water in Croatia are uneconomic. Local policies to protect the standards of their citizens do not approve an economic price, but they co-finance the water supply from the local budget, so that the same could work at least on the verge of sustainability. However, in most cities, the situation is changing slowly. The supplier of services does not bring the price on their own, but must get the approval of the city / municipal authorities in the area where the service is provided. The supplier of services can charge utility service only if it is actually delivered to the user. The charge is paid to the supplier, and a person liable to pay is the owner or user of the facility connected to the water supply system.

#### **1.4. The demand for water and the movement of costs in changing prices**

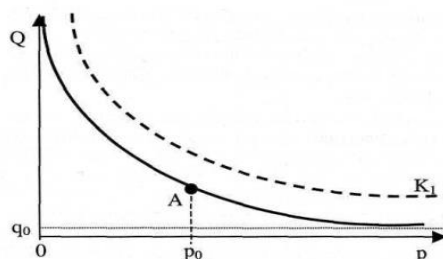
Although there is a monopoly in the water supply, as has already been mentioned, it does not mean that there is a risk of unlimited and unrealistic increases of the price (even if a monopolist may freely establish the price of water).

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<sup>15</sup> State Aid Act, Official Gazette, No. 140/05

The monopolist must also take into account (payment-capable) a demand, an income, but also costs and that the high price of water will primarily encourage consumers to spend less (save) water. The water demand curve is specific, because (in the range of real values) does not touch the coordinate axes, as shown in Chart 1. The water demand curve (change in cost) is in a standard concave shape, not touching the coordinate axes on any side. On the one hand, the increase in the demand is limited by the real available quantities of water, and on the other hand, due to the nature of water as the basic need, the demand will never fall to zero.

Chart 1. The demand curve for water (for the price change)



Assuming that the price of water is close to zero, the demand / consumption of water would grow, theoretically, almost unlimited (of course, assuming that there are physical possibilities for that amount of water), because consumers would not have any motive at all to close the tap. In practice, however, consumption would not grow to infinity, because it is limited to a specific area, to a total throughput capacity of water supply network, and physical capabilities of consumption. Situations in which the water was free for the local population (e.g. on the Island of Vis in the sixties of the 20th century, the local water supply in Žrnovnica near Split) have shown that the consumption, even then stayed within reasonable limits. On the other hand, the increasing price of water, reduces the demand / consumption, but in smaller amounts, and it could hardly ever be reduced to zero in real terms. Certain 'existential minimum' of water consumption ( $q_0$ ) will be retained even at the highest prices.

Such a curve can be approximated roughly by the formula:

$$Q = q_0 + \frac{a}{P(\text{on } X)}$$

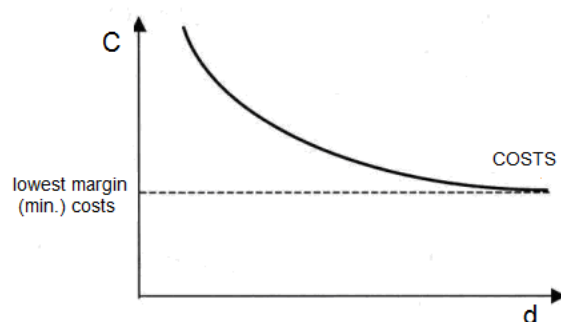
where:  $q_0 > 0$ ,  $a > 0$ ,  $x > 1$ , which determines the strength of the slope of a curve

Of course, it is necessary to point out that the demand for water can, to some extent, be increased, expanding the water supply system, by which the water is supplied to the (potential) consumers that weren't able to use it before. This, actually, means shifting the demand curve away from the starting point. However, it is clear that the long-term increase in the demand is



limited to situations when water becomes available to the vast majority of potential customers in a particular area. This certainly is making the demand for water situation rather specific in some relation to the standard situation and standard behavior in the demand for 'normal' goods. **The costs of the water supply** (production, transport and distribution of water) are mostly fixed costs, i.e. the capacity costs. In this sense, when you want to increase the supply / consumption, it requires quite high (higher and higher) investment. They concern, on the one hand, the introduction of more and more expensive sources, and on the other hand, the growing costs of expanding the capacity of the distribution network. The largest investments are required to enter the marginal consumer market. This profitability of lowering prices in order to increase the consumption is significantly limited: the classic definition - when marginal revenue equals the the marginal costs, the further effort (further investment) to increase spending is not profitable. In practice, it can describe a situation in which the additional revenue generated from the last group of customers equals to the cost of the production of additional quantities of water and / or the delivery of water to them. On the other hand, reducing the production / consumption of water does not reduce the cost of capacity so easy, because the fixed costs (capacity costs) once created, maintain their level for a long time. This suggests that policies to increase the income with low prices and high consumption of water carry the risk of losses for supplier if the demand decreases due to some external reason (e.g. under the influence of income decreases and the effects of income elasticity of demand). That's what happened when in the late 20th century, the water consumption drastically decreased (due to the decline in industrial production, a drop in tourism and, in general due to the falling incomes of the population). It is obvious that defining the optimal capacity of the water supply (water utilities) needs to be done very carefully. As mentioned above, cost associated with the production and delivery of certain amount of (demand) water will increase, logically, with an increase in the quantity. Indeed, looking at the function of the cost in the long run, the costs at higher levels will begin to rise faster (i.e., faster than the increase of produced and delivered quantities). This is due to the need of introducing the exploitation of increasingly expensive sources, the need of increasing the investment in the distribution network (in order to supply even the least accessible consumers), increasing the maintenance costs due to the capacity strain, and so on. On the other hand, even for the minimum level of water supply in a particular area, quite high investments are required (construction and maintenance of water pumping stations and networks), which will result in a relatively high starting (fixed) costs.

Chart 2. Movement of the cost depending on the price change

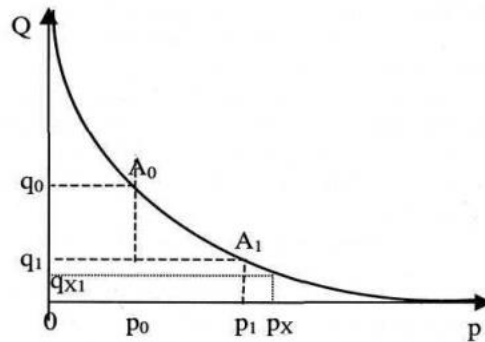


Increased prices cause the decrease in the amount of sold (consumed) water, as well as the costs, which asymptotically seek for fixed capacity costs. The lower, margin of costs will be much higher than in a situation in which is considered only a direct impact of the amount on the costs.

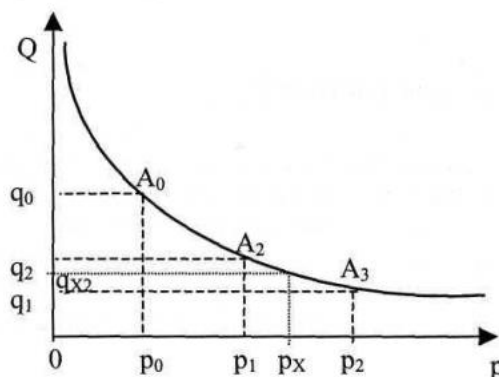
### 1.5. Price discrimination in water supply

Price discrimination (different prices for different categories of water consumers) in the water supply can appear and be explained partly by the difference in the elasticity of the demand of individual consumer groups, and partly by social factors. Due to the differences in the price elasticity in the demand of individual consumer groups, they will respond differently to price changes. The comparison of the demands of two groups of consumers with different elasticity of the demand is shown in Charts 3 and Chart 4.

### Chart 3. Consumers with elastic demand



### Chart 4. Consumers with less elastic demand

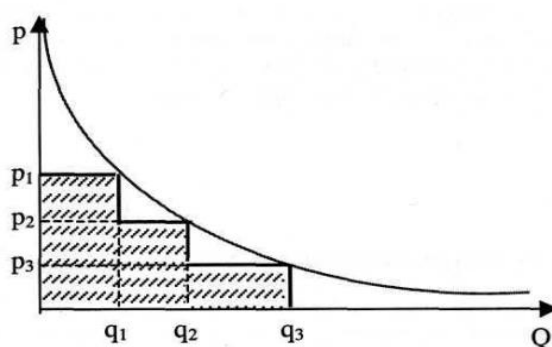


For consumers with a higher price elasticity of demand (Chart 3), the decline in the demand with increasing prices is faster, but with the price increase from  $p_0$  to  $p_1$  the demand falls from  $q_0$  to  $q_1$ .

For consumers with a lower price elasticity of demand (Chart 4), an equal price change (increase in prices with  $p_0$  to  $p_1$ ) will cause a smaller decrease in the demand (from  $q_0$  to  $q_2$ ). If the demand decreased to the level of  $Q_1$ , in this group of consumers prices should increase to  $p_2$ . It is assumed that, from the point of the production and distribution costs, the manufacturer's optimal amount  $QX = 2 * q_1$  would, at a unique price of water, give price  $pX$ , which would be slightly higher than  $p_1$ . Then the amount of water  $QX_1$  (less than  $q_1$ ) would be given to the first group of consumers, and  $qx_2$  amount (bigger than  $q_1$ ) to the second group. With a different price of water ( $p_1 < p_X$  for the first group, and  $p_2 > p_X$  for the latter), the monopolist (water

supplier) achieves the decrease in the placed quantities of the second group, but with considerably higher prices, who does more than compensates for the increase in the placements of the first group (which will now have a price slightly lower than in the case of unique  $p_X$ ). It is obvious that the total income of water suppliers is higher than that with a unique price. This observation leads to another conclusion, which is that when you want to increase the amount invested (watching developments in the short run, when the cost of capacity is constant), it is more profitable to encourage the increase in the consumption of the first group by lowering the price (or other actions that have a similar effect), rather than to apply it to the other group, or generally to all consumers. Another approach to a price discrimination may be setting different prices for different amounts of the water consumption. In fact, starting from the point that consumers in general must maintain a minimum amount of water consumption even at higher prices, this could lead to prices higher than average for the lower consumption.

Chart 5. Total expenditure for discrimination prices for different quantities



**Price discrimination** for different amounts of consumption may be explained well by large fixed costs in the business of water supply. Allowing only a certain consumer (network connection) to use water, causes significant fixed costs, no matter how small (or non) their consumption is. Therefore, higher prices of the initial amount of consumption should provide a cover for the incurred fixed costs.

## 2. REGULATION OF THE NATURAL MONOPOLY IN THE CROATIAN MARKET SUPPLY

### 2.1. Regulatory functions and ownership of water supply

The concept of regulation has different meanings in certain professions in which it is used mainly as a **terminus technicus** to describe a management of specific processes. In the economic context, the regulation can be described as encompassing all the control measures imposed by the state on economic businesses of some kind. When a company or a country opts for competition as the dominant way of managing the economy, then the social and normative regulation consist in the fact that they are intended to prevent the distortion of the market competition. In the Strategy<sup>16</sup>, a regulator of water services is independent, and regulates, has the role of **arbitration** between operators and local authorities in order to avoid too high, or too low prices of water, provides expert assessment of a request for an increase in water pricing. Also the strategy shows that the regulator does not have a central role. In the case of arbitration between an individual operator and the competent authorities, it has the optional role of the regulator in the process of pricing. If the local government does not accept the price submitted by the operator, the regulator will make a decision on the legitimate price. In case that both

<sup>16</sup> Strategija upravljanja vodama (2009.), NN91/08

parties agree on the price, the regulator will not be involved in the process. The regulator has the power to continuously collect the data and regulate tariffs in the water sector as a prerequisite in the process of sorting operator for their success. Therefore, public authorities have a regulatory role, more than a role of the provider of such services, because international data show that in such cases, on average, there is less investment in the construction and maintenance of water infrastructure with more public subsidies. Also, relatively low prices, which do not reflect the real costs, contribute to inappropriate consumer valuing water services as well as water resources, which are not inexhaustible and are of great ecological value. The regulatory body should operate independently from central and local public authorities, and against decisions taken by the dissatisfied party, it would have access to legal remedy at the High Commercial Court, which, given the forthcoming judicial reform in connection with the system of competition, should have the best assumptions for the resolution of cases and disputes in the field of market competition as well as in the sectors in which they are established regulators. At the same time, it would reduce significantly the risk of non-transparent operation of the water operator and the transmission of possible internal organizational and operating inefficiencies to the private and business users who pay costs in the end. The regulatory body should have sufficient financial resources for their work, as well as experts for such a technically specific area. Regarding the **control functions**, it generally takes two forms. **The first** is where the controller collects data on entrepreneurs' (service provider) businesses, performs an economic processing of the collected data as well as their comparative evaluation and publication, and it ultimately allows the continuous monitoring of the effectiveness of individual entrepreneurs in relation to the others. The aim of the regulatory body is thus to determine the optimum standards of business efficiency, according to predefined criteria. In this case, the jurisdiction of the regulator is functionally defined. **Another way** refers to a case that allows a greater flexibility between the two sides. A quasi regulatory model (in the case of private and public operator) is based on the contract as a consensual legal act by which a competent local authority contracts financial and technical, legal details of the service with the utility company or concessionaire following a public tender. Current ownership policies in the water supply infrastructure are undefined by the Utilities Act. The water supply infrastructure in cities and municipalities is mostly owned by the utility companies, and in a smaller part by the local government units.

## 2.2. The existence of economies of scale

In privatized water supply systems, one of the main goals is to extract the central system and eliminate, or at least minimize the possibility of a natural monopoly in a way that separates the components of the infrastructure system in three separate, mutually independent economic systems (generation - transmission - distribution). The greatest possibilities of natural monopolies are at the central system and just in it "the effect of economies of scale" is the most prominent. That means the concentration of effects (transport, transmission) through that system and great possibilities of reducing its average cost, in parallel with the increasing the degree of its use. That is the system which is actually impossible to compete with, it is realistically the cheapest (and it is cheaper as it is more widely used), its monopoly is the cheapest solution, and it is natural that it becomes a monopoly (hence the term natural monopoly). The potential power of such a system is too large, not only through possibilities of cheap increase of profits, but also through the possibility of its influence on all the other components of the whole infrastructure of such a system, as well as to other industries related to such systems. For this reason, it is normal that the control of such systems should be the strongest, not only through their own regulatory measures which will limit and control such a potential power, but even through the form of ownership of such systems.

### 2.3. Competition for the service area and on the relevant market

Previously, it was said that water supply infrastructure is owned currently by utility companies and to a lesser extent by the local government, and as such, does not allow the competition for the concession between entrepreneurs. The transition of ownership of the water supply infrastructure to cities and municipalities would enable the market competition. This is evident in the goals of the Strategy, and its implementation would help the liberalization of this sector in the future. It is possible to have the competition in the specific geographic market in this sector. There is no doubt that the construction of two parallel water infrastructures in a given area for all consumers would have no economic justification, but supplying large users / consumers has economic "ratio" and can be done technically. The provider with a same service as the existing operators could, through a specially constructed water supply network or a connection to an existing network of the neighboring operators, supply large interested consumers. When using the existing network, the operator would pay for the associated costs (third party access), but it should be remembered that, unlike some other network activities such as, for example, telecommunications, water supply and drainage due to their natural and technical characteristics (high transport costs, limited ability to share infrastructure, their geographical disconnection, maintaining hygiene standards of water, ...) have fairly more difficulties in the development of competition. The possibility of self-supply from their own sources should also be added, while the excess water resources may be supplied to other interested users. And, because of cost-effectiveness and savings, large industrial customers see an advantage in pumping their own water.

### 2.4. The introduction of competition into the public water supply and drainage in the EU

Within the European Union there is generally no preference between the public and private property, the Treaty establishing the European Community is neutral on this point. In the majority of countries in the Union prevails privately owned water supply, whose benefits they see in a greater efficiency in managing the water distribution infrastructure, ensuring the prescribed standards of service, as well as the realization of adequate profit to the owners. Achieved revenues should be sufficient to cover all the operating costs, ensuring the sustainable development of this industry and ultimately achieving the aforementioned gain. The water sector have adopted two ways of competing among operators. The first relates to the competition between private operators, where the best is awarded with a concession of the water supply infrastructure, and the other is the "benchmark competition", where each competes with a large number of operators with the character of a natural monopoly, and the opposition of the effectiveness of each, enables the best performance of water supply services and lucrative profit.<sup>17</sup> Competition for many represents the path to dynamic efficiency and the development of innovation in a way that public regulation is unable, especially in times when the sector is facing a number of challenges, including climate change, environmental protection, as well as demographic changes.<sup>18</sup> In the European Union there are **three different models of introducing competition** in the water utility services and they differ from each other according to the selected approach to privatization and management of infrastructure and resources for drinking water supply and wastewater disposal. Consequently, they vary in ability to upgrade the traditional system present in many countries of the European Union, which is based on the public management of operators (in public ownership) that provide water utility services. These models are colloquially divided into "English", "French" and "German" model.<sup>19</sup>

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<sup>17</sup> OECD Competition and regulation in the water sector, (2004) Policy roundtables, OECD publishing, page 32

<sup>18</sup> Setting price limits for 2010-15, (2008) Framework and approach, OFWAT, UK, page 5

<sup>19</sup> Organisation and financing models of the drinking water sector (2007) TECHNEAU - Project funded by the European Commission "Water liberalisation scenarios ", page 14

**English model** - the United Kingdom is an example of private-property right regimes, but also, could be the example to Croatia in the future. The property is 100% private, economic and environmental regulators are independent.<sup>20</sup> The main characteristic of this model, as mentioned above, is the complete privatization of water supply operator that has taken place in the time of the Conservative government of Margaret Thatcher, further, the business management of a private owner while retaining control service standards and cost by a specialized regulatory body with public authorities. In a completely private ownership, to national and international / multinational private companies, almost all water companies owned by the state (Asset Sale) have been sold out. This kind of full privatization, is one of the most frequently mentioned examples from which all the potential significance of such privatization in water supply is analyzed. It consists of a very advanced system of price regulation and provides a good opportunity to improve the efficiency of water operators. Despite that fact, the model is applied only in England, one of the reasons is its being the most demanding professionally.

**French model** - is present in one fifth of the EU countries. The most common is in France and Spain, and it is carried out even in some major cities of the United States. Unlike the English model, here the cities and municipalities maintained ownership of their water supply, but the maintenance (extension or modernization - depending on the contract) and managing are contracted to specialized private companies (Contract Operations). All the infrastructure is in a quasi-public property. Private operators supply water to more than 75% of consumers in the municipalities. The economic regulator is at the municipal level, and the environment regulator is at the level of central government.<sup>21</sup> There are about fifty smaller private operators at local and regional level. It works through public tenders, the tenders of the proper local authorities and thus obtain offers from entrepreneurs interested performing water supply activities in a given area and for a limited time. Competing in tenders is not limited only to private operators, there are also local units included.<sup>22</sup> The entrepreneur with the best offer makes a concession contract with the local authorities. The contract sets standards of service provision and entrepreneur's pricing. The French model is more flexible in relation to the above, national rules do not oblige the local authority to enter at all costs into a contract with a private concessionaire, it gives an opportunity for cities and municipalities to carry out their own activities if necessary. In that way the better bargaining position of entrepreneurs / bidders in tenders is achieved. All this is a reason for deep application of this model in other countries.

**German model** - a model characteristically closest to the model that prevails in the European Union. Local government directly manages the water utility sector. High decentralization with more than 14,000 entrepreneurs, of which half relates to the water supply, and half to the drainage. Municipalities choose the way of providing services by operators who are in full public ownership (over 80%), in the mixed (public and private around 15%) and private property (2%). The representative bodies of the municipality determine pricing tariffs, and in the case of private ownership a legal institutes of competition and institutes of abuse of a dominant position in order to control the height of the price are applied.

## 2.5. Comparative analysis of the regulation of public water supply and drainage system in the UK

It has been said that the United Kingdom conducted the first full privatization, where a whole almost one-component water supply became private property. The reasons for this are not only the expected reduction in the price of these 30% of total costs, which fall on the system itself,

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<sup>20</sup> OECD, (2003), Improving Water Management- Recent OECD experience, OECD publishing, page 85

<sup>21</sup> OECD, (2003), Improving Water Management- Recent OECD experience, OECD publishing, page 85

<sup>22</sup> OECD, (2003), Social issues in the Provision and Pricing of Water Services, OECD publishing, page 115

as well as in other industries, the reasons for this are more in the inefficiencies of these systems (and evaluations of unnecessarily high costs in all their components), as well as expectations that the actual private interests and feelings of the competition would initiate the whole process of restructuring of such systems, increasing their efficiency and solving those problems of water supply which systems before could not solve. Prices of water supply at first increased dramatically, due to that regulatory agencies were introduced, as well as a very large and complex regulatory system, which with its regulatory measures protected the system from excessive prices, but also from a series of other possible side-effects, which were possible to expect from a private monopoly owner interested in his own profit. However, later it turned out that such a large increase in prices was caused by a significant part of the very large investment procedures with which new owners, in the shortest possible time, wanted to increase the effectiveness and efficiency of their systems, and in the same controlled conditions, increase their profits. By achieving the effects of these development projects, prices were decreasing and were again re-regulated, with still sufficient profits. In 1989 the UK started with the privatization of water supply and wastewater disposal, which took place within the regional public management system. They established a new vertically integrated entrepreneurs at the regional level to carry out all activities in the production and distribution chain, from investment in new sources to local distribution and collection and disposal of waste water. England has ten operators that provide integrated water utility services and fifteen operators that provide only water supply services. Each of these entrepreneurs have a business license issued for a period of 25 years from the relevant state departments for environmental issues.<sup>23</sup> The initial change of ownership structure in the beginning did not have a significant impact on the way of providing services. Since 2005, there was a possibility of competition between entrepreneurs in the provision of water supply services to large industrial consumers. It should specify, from the technical side, that few households, only 2%, had at that time built water meters, and today, after constant investments, only 30% of households pay the actual water consumption. This was not at all favorable to the development of a culture of rational disposition of water resources, and also led to a large mutual subsidization among consumers. Also, water supply networks required a significant investment into updating and enabling higher quality services in accordance with the standards of water resources management established by the European Union. One of the priorities in this regard was the reduction of water losses in the water supply network. In order to ensure the public interest in the privatized water supply and drainage, the three regulatory agencies were established, including the most important the Water Services Regulation Authority (OFWAT) in charge of controlling water prices and company profits. OFWAT, the market regulator, has the power to determine the maximum prices, which entrepreneurs can apply in a given period. This method of determining the price for final consumers is known as "**price cap**" or maximum price regulation. By using "price cap", regulatory tool they wanted to provide, preferred incentives to achieve greater efficiency and its simple application would reduce the possibility of "regulatory capture"<sup>24</sup>.<sup>25</sup> Rising prices are usually regulated by the five-year period and may be modified only from the pre-defined reasons. Defined maximum prices have a purpose to enable for any entrepreneur reaching the prescribed standards of service, financing the new investments and return of invested capital by achieving related profits. It should be noted that the regulator does not determine directly entrepreneur's profit, but sets a maximum price that can be invoiced to consumers. Achieving a reasonable return on the capital investment in the privatized water system is condition of

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<sup>23</sup> OECD, (2003) Social issues in the Provision and Pricing of Water Services, OECD publishing, page. 121

<sup>24</sup> "Regulatory capture" is a process in which the domination of the regulatory agencies after a while is taken over by the industries that initially engaged them, and so no longer work for the public good, but for the good of this industry.

<sup>25</sup> Price Regulation of Utilities, source: [www.treasury.gov.auldocuments1194/PDF](http://www.treasury.gov.auldocuments1194/PDF)

attracting capital into the industry and its long-term development. This requires that entrepreneurs, by choosing appropriate business policy, hold their operational costs to a minimum necessary for the proper performance of activities and create additional space savings for its economic growth. The key role is in production or operating costs that need to be rational and comparable to the cost of other profitable service providers.

### **3. Perspectives in the development of regulation of water supply RH**

#### **3.1. The current status of water supply**

In Croatia, as mentioned earlier, there is fragmentation and inefficiency in water supply. The existence of a large number of utility companies is the result of a large number of cities and municipalities, as well as a result of historical development. On average, one utility company supplies water to about 53,000 residents. As for the use of water, 53% of water is used for industrial purposes, and 29% of water accounts to public water supply. Croatia is one of the countries rich in water, but its water supply infrastructure is insufficiently developed. The average supply of the population with water from the public water supply is 80%, through the local water supply 6%, while drinking water from individual sources, wells and cisterns is used by 14% of the total population. Increasing living standards, not only in cities, but also in all rural areas in the interspaces of these cities, actualized and increased the water supply requirements in these interspaces, too. Of course, the specific costs and the cost of supply of such space (with a lower population density of consumers) are significantly higher, and the city water supply systems (with its concepts and components), show significantly lower interest to solve these problems. Under the pressure of this population and the country, a problem of all the more distant consumers in the water supply is tackled in the same way as the problem of all the more distant water sources was, by keeping the old concepts, and spreading new, longer transportation and distribution lines, in all directions, to such consumers. All along with disproportionately excessive (even multiple duplicated) investments, uneconomic facilities, and even higher actual costs / prices. The average specific water consumption in households is 135 l / c. / day.

The loss of water, or water that does not reach the final user is the difference between the abstracted and delivered water. In Croatia, per one abstracted cubic meter of water an average loss in distribution is over 40% of water. This is an extremely high percentage, especially when one considers that the average value of water loss in the EU is 15-20%. The largest losses of water are in the Dalmatia basin district, and the smallest in the Drava and Danube water district. Water losses come largely as a result of ruptured pipeline or leakage on compounds. If we take a look at the cities individually, the City of Zagreb as the largest consumer of water has the greatest losses that reach up to 50%.<sup>26</sup>

The big problem today is unsustainability of the water supply in almost all segments. Many sources of drinking water are polluted, and those in coastal areas are exposed to saltwater penetration (salinization). Also, a large number of sources are excessively exploited, some of which are irreversible. There is a disproportion in the pricing of water by the utility companies. The present form of ownership allows the existence of monopolies, with practically no competition, the price of water is uneconomic, so the funding largely comes down to the revenues of the local or state budget, from fiscal and para-fiscal sources. Water is still considered as purely a public good, and not an economic good, which is unacceptable in the present time, the way of water management is more oriented to its consumption, not its preservation and protection, which is completely incompatible with the principles of the sustainable development. To maximize the use of the EU funds, and equalize the prices of

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<sup>26</sup> Bajo, A., Filipović, B., (2008) Učinkovitost opskrbe vodom u Hrvatskoj, Newsletter, br.37, Institut za javne financije



water services Croatia has opted to change the constitution and define water basins, in order to comprehend better its own needs. Foundation to help public water suppliers in the preparation of EU projects is based on these principles, due to that, the Hrvatske vode established a special department, the Sector to support the preparation and implementation of the EU projects. The Sector along with the Services to support the preparation and implementation of EU projects started their operations on 1 January 2014, taking over the performance of all the procedures for preparation and implementation of projects that had previously been distributed to other organizational units.<sup>27</sup>

### 3.2. Goals

"Achieving an integrated and coordinated water regime on the national territory is a fundamental objective of water management. This includes taking care of the spatial distribution and completeness of the water system, state of the quantity and quality of water in a best way that suits to a given area and a given time."<sup>28</sup> It is necessary to create conditions for a sustainable water supply system, providing enough water, of the necessary quality by the direct use of resources or by conditioning. The goal is to build a better water utility infrastructure, which requires greater government investments, but also a bigger concentration to the funds from the EU. A better protection of sources is required, as well as the improvement of hygienic-sanitary standards, which are closely related to increasing the degree of population supplied from public water supply system to an average of 85-90%. Ground waters compared to surface waters are, by their nature, more protected from pollution and are safer sanitary, and therefore will remain the main source of water for water supply, but the goal is still to increase the security of water intakes for the public water supply. As for the price, in the Strategy, the goal is the economic price. "The EU approach requires pricing policy based on the principle of cost recovery of water services, including the environmental costs and resource costs for all water use, by the use of the principle of **user / polluter pays**, meaning that member states should ensure that water-pricing policies provide adequate incentives for users to use water resources efficiently".<sup>29</sup> Therefore, the economic analysis together with management decisions emanating from it, is seen as an instrument for the implementation of the **polluter pays** principle, and thus participates in the control of pollution sources".<sup>30</sup> Furthermore, it is necessary to decrease the percentage of the average water loss from the current 40% -50%, to the average value in the EU which is 15-20%. Financing the Water Infrastructure should be a combined model of funding from the state budget, the price of water, grants (mainly from the EU funds) and loans, noting that the largest part of the funds should come from local resources because they are the most favorable and non-refundable resources. And in the end, perhaps the most important goal is to legislate to allow the local water infrastructure to be owned by towns and municipalities, as well as to establish an independent regulator of water services.

## 4. CONCLUSION

Water supply is a typical monopolistic activity with exiting micro-economic relations, in many ways typical for a monopolistic market. However, in some characteristics, relations in the pricing of water and other elements to which they are related to are rather specific. There is a large number of water suppliers on the local level, so it possible to say that they are local monopoly markets. The independent regulator's external control of monopolist's business in this field is obviously necessary and justified. It can and must represent a method of protecting

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<sup>27</sup> Časopis Hrvatska vodoprivreda (2015) , PODRŠKA PRIPREMI I PROVEDBI EU PROJEKATA, br. 212, str.49

<sup>28</sup> Strategija upravljanja vodom, NN91/08

<sup>29</sup> Časopis Hrvatske vode (2016) br.96, Kontrola izvora onečišćenja voda str.151

<sup>30</sup> Časopis Hrvatske vode (2016) br.96, Kontrola izvora onečišćenja voda str.151

consumers from a monopolistic price increase. On the other hand, that external intervention in the pricing of water must not be such as to endanger the economic rationality of the operations of the water supply companies, because it would, in the long run undermine the stability and quality of the water supply. The external influence is also needed to encourage the monopolists to engage in the water supply those marginal consumers, to which the costs of connecting to the network are too high. The reason for that are the high fixed costs in the water supply business, which have the crucial impact on doing business and business results of water supply companies, and that is the way a natural monopoly appears. In most developed countries, the price of water is economic, while the water supply in Croatia is financed from fiscal and para-fiscal sources. The fundamental problem in the water supply today is its unsustainability in almost all segments. Many drinking water sources are contaminated and completely or excessively used, some of them irreversible, and those in coastal areas are further exposed to saltwater intrusion (salinization). There are large water losses which percentage should be reduced from current 40 to 15-20%, which would reduce the overall costs and increase efficiency, and in the end that create more funds for investments. In practice there are two models of the water supply management, one of them is a model of privatization, and the other, a model of the monopoly of the public sector. The privatization model is the model of full cost recovery, therefore, it advocates the economic price of water, while the model of monopoly of the public sector exempts water from the competition and the price is not economic, and funding largely comes down to the revenues of the local or state budget. There are "pros" and "cons" for both models, due to the goals of the Strategy, it can be concluded that Croatia is moving more in the direction of privatization. But it is doubtful whether it can be expected. Looking at the privatization of the water supply in the examples of other countries, it can be concluded that there is no universal solution to the management of water supply. Each country individually should base their further development regarding the existing situation, geographical location, their historical development and a number of other complex factors. Taking this into account, Croatia should implement significant changes, to insure the way to privatization. It is evident in the example of other countries that entered the process of privatization unprepared that there has been a counter-effect, primarily referring to the price of water, which, after privatization, contrary to the aim has increased. When we add the geographic position, indented coastline, inaccessibility of certain areas, and insufficient development of the water supply system, a more realistic solution can be seen in keeping the existing forms of ownership. Due to the price disparities, it is necessary to an independent regulator of water services. Despite the equal-pricing there are big differences among prices in certain cities and municipalities. Of course, it should be taken into account that the costs, starting with the construction of infrastructure, and further, the distribution and drainage are not equal throughout the territory. Therefore, state funds should be better distributed, the way of co-financing and the efficiency of water supply should be improved, which would ultimately lead to the equal price of water for the entire population. There will always be those who will see the benefits in the form of private property, but in Croatia there are more advocates of the policy that water is a natural resource which should remain in the public domain, and that goods such as water, forests, highways should never be privatized.

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## SAFEGUARDING TRANSFER OF SECURITIES IN THE CONDITIONS OF THE SLOVAK REPUBLIC

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### ABSTRACT

*Execution of subjective rights and duties resulting from obligations is ensured by a system of legal guarantees. In the broadest sense, this guarantee is provided through the existence of civil and commercial law itself. In the narrower sense, the civil law guarantees lie in an exact definition of subjective rights and duties that follow in case the duties from obligations were not performed properly and on time. (Cirák, 2008) In this concept however, the decisive guarantee remains the ability of the eligible person, i.e. the creditor, to seek judicial protection of his rights. Securities Act distinguishes between safeguarding obligations through contractual and statutory lien as well as through safeguarding transfer of securities.*

*In cases of safeguarding of obligations the rights and duties of participating subjects are primarily following provisions of Securities Act and provisions of Civil Code, Art. 151a through Art. 151me on liens, and Art. 553 through Art. 553e on safeguarding obligations through transfer of rights, are followed as subsidiary regulations. (Stoličná, 2012)*

**Keywords:** Civil Code, obligation, safeguarding transfer, securities, Securities Act

### 1. INTRODUCTION

Safeguarding transfer of securities is in the condition of market economy significant and used very much as the right in rem means for securing a claim and its accessories. The particular legislation of this institute included in provision of § 53 to §53f of Securities Act removed any actual doubts if securities regarding its legal character can be the subject of safeguarding transfers. Securities, become, on the basis of this legislation equal to tangible and intangible assets as the possible object of safeguarding transfer of right by means of which it is possible to safeguard liabilities stemming from contracts and other legal matters as well as accounts

receivable. In commercial relationships, securities serve mainly as a deposit for loans. (Saxunová, 2016)

As Civil Code which is in the position of „lex generalis“ of private law, states, it is possible to fulfil commitment only by the temporary transfer of the right of debtor or the third person in favor of creditor (hereinafter „safeguarding right transfer“). In safeguarding transfer of ownership, the ownership of the object transferred is transferred temporarily according to the provisions about acquiring the ownership by contract. In case if safeguarded liability is not paid fully or on time, creditor has the right to begin execution of safeguarding right transfer and to monetize the transferred right by the way stated in contract or by auction according to special regulation. It means that safeguarding transfer fulfils two functions:

1. Safeguarding, that consists in that the transferred ownership forces debtor to pay their debt and it strengthens the position of creditor in the sense that his liability will be paid also in the case when debtor can not or does not want to carry out the liability
2. Compensation, whose meaning is expressed in the possibility of creditor to satisfy himself directly from the object of transferred right or to demand his satisfaction in the case if his liability will not be paid fully or on time. (Fekete, 2015)

Various legal enactments as well as Securities Act enable to use this safeguarding legal institute to the certain object, whereas they modify safeguarding right transfer only marginally with the message to legislation in the special act (Civil Code) or they do not modify it, at all. The original legislation in Civil Code consisting of one sentence only, remained unusually large space to contracting parties for the agreement, what had the serious negative consequences in the relationship to original owners. In hundreds of cases debtors lost unjustly their properties. With Act no. 568/2007 of Journal of Laws, by which Act no. 527/2002 of Journal of Laws on volunteer auctions and on amendment of act of Slovak National Council no. 323/1992 of Collection of Laws on notaries and notarial performance (Notaries Policy) subsequently amended and on changes and amendments of some acts is changed and amended, it came to the radical legislation of this safeguarding institute with the strictly stated conditions of rise and loss of this right.

New legislation defines more specifically the position of the transferor and the transferee of the right, that the contract has to contain. Mainly the way of transfer of the acquisition of right has been changed that was the subject of security. The same as in lien, the institute of the execution of safeguarding transfer of right, because the creditor will not acquire the right that was transferred on him, but he has to apply its execution mainly in auction by encashment of transferred securities. It follows from the above that this way of safeguarding is very close to lien and as it does not enable creditor to acquire permanently property right.

## **2. SAFEGUARDING TRANSFER OF SECURITIES**

Safeguarding transfer of securities is included into the system of safeguarding means by securities act. Its meaning consists of the transfer of the right of debtor for the benefit of creditor, whereas the contract about safeguarding of liability by the transfer of right respects provisions of the third party (i. e. § 45 to § 53f) of securities act and provisions § 553 to § 553e of Civil Code about safeguarding of liabilities by transferring right. The importance of the contract consists in the transfer of property right on securities from its owner-debtor to creditor-new owner, who consequently acts as the new owner. (Strážovská, 2016)

The contract concluded in writing has to contain except of general conditions, also the data about debtor, creditor, about transferred securities, liabilities, safeguarded by transfer of securities. The other condition of contract is the determination of safeguarded liability and marking the right that is being transferred for the benefit of creditor, particular rights and obligations of contract parties to the transferred right during the duration of safeguarding transfer of right, its evaluation in money, the way of execution of safeguarding transfer of right

and the lowest bid in case of voluntary auction. The obligatory conditions of the contract then are:

- the determination of contract parties, i. e. who is debtor and who is creditor,
- the determination and identification of transferred securities,
- the determination and identification of liabilities safeguarded by the transfer of securities,
- the determination of safeguarded liability and indication of right that is transferred for the benefit of creditor,
- the determination of particular rights and obligations of contract parties to the transferred right during the duration of safeguarded transfer of right,
- evaluation of transferred right in money,
- the way of execution of safeguarding transfer of right and the lowest bid in case of voluntary auction.

Safeguarding transfer of right can arise only on the basis of contract (*pactum fiduciae*). This contract can not be concluded with the creditor by anyone except the particular debtor. A party of the contract is not the third person, if this person instead of debtor provided the creditor securities for the safeguarding. If the subject of safeguarding transfer is provided by different person than debtor, this person is necessary to identify precisely in the contract (provision § 553 of civil Code in fine is not precise, as the debtor is the obligatory party in the contract about safeguarding transfer of right). The liability of the third party to hand over securities to the creditor's property needs to be drawn up in a way that the particular right will be transferred to the creditor. Moreover, it is necessary to state the legal reason on the basis of which the third party will do it instead of the debtor, e.g., from the reason of adhesion to liability. The third party must be sure that in case of the execution of safeguarding transfer of right, he will get the right for the property settlement with the debtor providing that something else was not agreed. (Milošovičová, Nováčková, 2014)

### **3. THE REGISTRATION OF SAFEGUARDING TRANSFER**

According to the provision of § 53 part 2 of securities act, the registration of safeguarding transfer of securities is recorded by the central securities depository in the particular recording of safeguarding transfers of securities. Seeing that this process is the same as in lien, legislator will not make it separately, but he will refer to the provisions regarding the registrations of lien to securities. Provision of § 47 part 1 of securities act indirectly specifies the way of identification of contract parties, safeguarded liability or securities by means of the data, that register of safeguarding transfers contains.

It is:

- commercial name or name and domicile of original owner of securities, if he is a corporate entity or name, surname and address of depositor if he is a natural person,
- identification number or personal identification number of the original owner of securities,
- the denotation of security deposited containing the type of security, its ISIN, commercial name or name and domicile of issuer, if he is a corporate entity, or name, surname and permanent residence of issuer, if he is a natural person,
- commercial name or name and domicile of creditor – the new owner of securities, if he is a corporate entity, or name, surname and permanent residence of creditor- the new owner of securities, if he is a natural person,
- identification number or personal identification number of creditor – the new owner of securities,

- the number or the volume of securities,
- the amount of liability, for which the safeguarding transfer was established and its maturity date,
- the date of registration of safeguarding transfer in the register of safeguarding transfer.

Central securities depository is obliged, on the written request of the corporate entity or natural person to issue the extract from the register of safeguarding transfer in the range of above mentioned data marked with the letters a), c), f) a h). The condition of the establishment of safeguarding transfer of securities is the conclusion of the written contract about safeguarding of liability by the transfer of right to securities and following its registration in the register of safeguarding rights, that as it was already mentioned is led by the central depository. The subject of safeguarding of liability by the right transfer contract, in contrast with the general legislation of lien, can not be deposited securities. In that case, the safeguarding transfer would not incur and creditor would not require the satisfaction from these securities. However, there is the other legal fact in establishing the safeguarding transfer of right, that is set out differently by securities act, according to the type of securities. (Saxunová, 2014)

Creditor, depositor or National Bank of Slovakia belong to the entities authorized to give order for the registration of the safeguarding transfer of the right to security, if it deals with the registration of the right arisen from the business with them. The procedure, amended in § 50 part 1 of securities act places a duty to the owner of securities or to creditor to attach to the order for the registration of contractual lien the written confirmation about the content of obligation contract by transfer of right except the case when the order is given by creditor or depositor according to the particular provisions of securities act. The order for the registration of safeguarding transfer of right to security is delivered to central depository, who, after performing the registration in the particular register of rights immediately registers this fact also in the particular account. (Nováčková, Milošovičová, 2011)

There can be situation that the change of data connected to the safeguarding transfer of right will happen. The person, concerning the change of data, is obliged from the law to submit the order for the change of registration in the register of rights immediately from the day, when the fact happened, from which the change of data about safeguarding transfer emerges from. If it is not possible to determine the person, who concerns the change of data, this obligations then belongs to the original owner of securities. If the proposal for the registration of the change of data has to be submitted by more people, this obligation is considered as fulfilled, if it is fulfilled by whoever from them. (Sulíková, Strážovská, 2016)

The potential responsibility for indemnity that was caused either intentionally or as a result of negligence, is adjusted by law in the way that, the person who gave the order without authorization to the registration of contractual lien or gave it incorrectly, incompletely or late is responsible for the indemnity that has been caused by this.

#### **4. SECURITY DISPOSAL**

The restriction of right of disposal of creditor consists in the fact that the creditor is not authorized, till the end of safeguarding transfer of right, to transfer this transferred right to other person, nor to burden it in either way, in favour of another person. From the above, it appears the clear prohibition of any transfer of security on the third party, either with payment, or without. There is a different situation, in case of death or in case of discharge of creditor or debtor, where it is necessary to apply the general provisions of Civil Code about inheritance. The subject of inheritance are all property rights and obligations of testator except of those, there were bound exclusively to his person and are transferred to inheritors. This case will be the same. After conclusion of succession, their legal representatives become the participants with the same rights and obligations of safeguarding of liability by transfer of right contract. Corporate entities have the same rules, all rights and obligations are transferred to their legal

representatives. It is mainly in merging, acquisition or division of companies according to the provision of § 69 a of Commercial Code. Filing for bankruptcy on the property of debtor and the opening of insolvency has the effect, that it is not possible to begin or continue in the execution of safeguarding right on the property that belongs to debtor because of his liability safeguarded by the safeguarding right. As it follows from the provision of § 14 part 4 c) of the act no. 7/2005 of Journal of Laws about the bankruptcy and restructuralization subsequently amended, it has been removed from this act by the legislator the execution of safeguarding right connected to cash, claims from bank account or from the branch of foreign bank, state bonds, transferrable securities or connected to continuation of the execution of safeguarding right by public auction according to the special legislation. However, if creditor had securities in his holding, he is obliged directly from the law to protect them against the damage, loss and destruction. The same obligation has also debtor, if securities stay in his disposal.

## **5. DISCHARGE OF SAFEGUARDING TRANSFER**

By the extinguishment of safeguarding liability, the right is transferred back to the person who has provided the safety. Safeguarding transfers have the accessory character in relationship to the liability that they safeguard and therefore the safeguarding transfer ceases to exist by the extinguishment of safeguarding liability. The liability itself can be extinguished on the basis of the various legal facts e.g. the payment of liability, cancellation of liability from creditor, offsetting, impossibility of payment or settlement agreement back to the original owner directly from the law. Practically it means, that the property right to securities that was temporarily transferred to creditor is going back to debtor, resp. to the person that provided the right. The order for registration of this change to the central depositor can be given in this case also by the debtor himself. The attachment of this order is the written confirmation of creditor about the fulfilment of liability or other instrument issued by him showing the reason for the discharge of liability safeguarded by the transfer of right. The moment of extinguishment of safeguarded liability and also the lapse of property right of creditor to the transferred thing can be in many cases disputable, mainly if creditor denies that the liability has been paid in the full range including the accessions or if creditor refuses to issue to debtor the confirmation about liability payment as it is imposed by the provision of § 562 of Civil Code. The debtor, in this case, will have to seek at the court the determination of their property right by the action of determination and at the same time by the action to recover the things according to § 126 of Civil Code. The question of extinguishment of liability will be in this case examined by the court as the preliminary question whereas, the burden of evidence will be on debtor in the both actions. (Ficová, 2010)

## **6. CREDITOR SATISFACTION**

The provision of § 553c of Civil Code contains general legislation of the consequence of delay of debtor with the payment of their liability. Legislator enables creditor to begin the execution of safeguarding transfer of right and to turn the transferred right into cash by means determined in contract or by auction according to act no. 527/2002 of Journal of Laws on voluntary auctions subsequently amended. Consequently, legislator determines that whatever agreements concluded before maturity date of safeguarded liability, whose content or purpose is satisfaction of creditor by means of keeping the property right forever, are absolutely invalid, i.e., it is seen as non-existing. However, this provision does not entirely protect debtor, because it does not eliminate the possibility or conclude valid agreement according to which creditor will be able to keep transferred securities after the maturity date of liability. However, specialists from practice know another possibility, how to get round this ban e.g., by means of the institute of pre-contract or by means of contract with precedent condition of its effectivity to the maturity date of liability.



## 7. DISCUSSION

Safeguarding transfer of right controversy becomes evident mostly in the relationship to the transfer of property right. Safeguarding transfer of right as the institute of liability right that has a relative character interferes, although temporarily, into property right. Liability relationship has in this case the dominance over tenure, what is in conflict with the basic principles of private law. In safeguarding transfer, the intervention into property right takes even after extinguishment of liability relationship (after creditor satisfaction) in spite of the fact that according to present text of the Law, by creditor satisfaction (safeguarded liability), the transferred right comes back to the person that it has transferred, i.e., on the original owner. The back transfer of right is often questionable, when creditor and debtor (original owner) have the different opinion on the fact, if the liability has been fulfilled in the full range, as it is required by § 559 of Civil Code. (Fekete, 2012)

Controversial character of safeguarding transfer of right becomes evident also in case if debtor pays their debt. After the discharge of safeguarding transfer, the transferred right does not get into the power of the original owner. Original owner can rely only on creditor's honesty. In case of safeguarding of liability by transferring the right, the statement about the discharge of liability is required from creditor and consequent protocol about the back transfer of property right to securities in central securities depository.

## 8. CONCLUSION

Safeguarding transfer of right was taken to Civil Code from the Act no.101/1963 of Journal of Laws on legal relations in international commercial relations (Code of Law of international business) effective till 31. 12. 1991. Provisions of § 207 to 209 enabled debtor (businessman) except of the transfer of obligation right (liability) transfer to creditor for the reason of safeguarding liability also the property right to the thing (goods), that was located in the debtor's warehouse or was sent to transfer. In 90s of 20th century, safeguarding transfer of right started to be misused mainly to the disadvantage of property owners, who borrowed money from the different non-banks. This state justified by the non-functional adjustment of lien. The modern adjustment of lien in Civil Code that introduced the registration of lien also in the relation to tangible assets, i.e., securities, conditions incurred for the cancellation of the institute of safeguarding transfer of right. However, instead of that, legislator incorrectly established safeguarding transfer of securities as the equal institute in relation to lien.

Safeguarding transfer of property and other rights in its strict and very brief version has appeared in application practice as the contradictory institute, which on one side expressively enforces the legal position of creditor, but on the other side is considerably exploitable in the disproportion of rights and obligations between creditor and debtor. Its brief normative adjustment enabled the execution of right of creditor that way that debtor at the beginning of delay without the possibility of restitution was losing the property values sometimes incomparably with the amount of liability. It was seen most considerably in the cases, when the object of safeguarding transfer were real estate's representing the debtor's living. As the most convenient solution, we consider the removal of this legal institute from the body of laws of the Slovak Republic.(Fekete, 2011)

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## THE PERFORMANCE OF THE INVESTMENT TRUST INDUSTRY: EVIDENCE FROM CROATIA

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### ABSTRACT

*This research paper deals with the performance analysis of money market UCITS funds which represent the dominant type of open-end investment funds with a public offering, in terms of net asset value. Referring to the period from the January 1, 2014 to December 31, 2016, this research was carried out on a sample of 17 selected money market UCITS funds in the Republic of Croatia, which were treated separately according to the few key data, like investment funds' net assets, number of investment funds, and investment structure. Management performance was analysed using descriptive analysis, but also by means of risk-adjusted return measures using Sharpe and Sortino ratios.*

*Selected 17 UCITS money market funds (MMF) for the purpose of this research are Allianz Cash, Auctor Cash, Erste Euro – Money, Erste Money, HPB Euronovčani, HPB Novčani, Locusta Cash, NETA MultiCash, OTP euro novčani, OTP novčani, PBZ Dollar, PBZ Euro novčani, PBZ Novčani, Raiffeisen Cash, Raiffeisen euroCash, ZB europlus, ZB plus.*

**Keywords:** *Croatia, money market UCITS funds, investment funds' net assets, downside deviation, Sharpe ratio, Sortino ratio*

### 1. INTRODUCTION

The activity of investment funds in the Republic of Croatia are regulated by the Act on Open-Ended Investment Funds with Public Offering (No. 44/16) and Alternative Investment Funds Act (No. 143/14). „Undertakings for Collective Investment in Transferable Securities fund (UCITS) is an open-ended investment fund with public offering established by a UCITS management company which, operating on the principle of risk-spreading, invests collective assets of investors, raised through public offering of units in UCITS, in liquid financial assets in accordance with the provisions of the Act on Open-Ended Investment Funds with Public Offering, prospectus and the fund rules. Units of UCITS are redeemed out of its assets at the request of investors.“ (Croatian agency for supervision of financial services, cro. HANFA, 2017) „Alternative investment fund is an investment fund established by a manager of alternative investment funds for the purpose of raising capital through a public or private offering and investing this capital in different types of assets in accordance with the provisions of the Alternative Investment Funds Act and a predefined AIF investment strategy and objective, but to the exclusive benefit of unit-holders in the AIF concerned. An AIF may be the AIF of an open-ended or a closed-ended type.“ (Croatian agency for supervision of financial services, cro. HANFA, 2017) Open-end investment funds considering the type of securities that are invested in are: (1) money market funds (MMF), (2) equity funds, (3) bond funds and (4) balanced open-end investment funds. For the purpose of our analysis we are looking only at the money market funds segment. The main reason is that those funds are dominant type of open-end investment funds with a public offering, in terms of net asset value. Our paper proceeds as follows. In

section 2, we provide a short literature review on investment trust industry. Section 3 provides a background on money market UCITS funds in Croatia. Section 4 discusses research methodology, while section 5 discusses our research results. In the past period, different performance measures have been used by different researchers to evaluate fund performance. For the purpose of this paper, beside descriptive statistic, we used downside deviation, Sharpe Ratio and Sortino Ratio. We conclude in section 6.

## 2. LITERATURE REVIEW

There has been more research over the past decades regarding investment trust industry in general, but still there is no a lot of research paper about measuring performance of UCITS funds in Central and Eastern Europe. The Croatian funds market is comparing to other countries, especially more developed countries, relatively young. The first successful funds were money market funds that started to operate 1999 (Brborović, Posedel, 2014). Most of the recent research paper in Croatia are done in the field of UCITS funds in general, but they do not deal especially with the money market funds which in the eyes of investors have become a substitute for bank deposits (Schmidt, Timmermann and Wermersm, 2013). Popularity reason and growth of open-end investment funds is because they are not strictly required by the structure of investment, and gives greater freedom of investment to the managers (Klačmer Čalopa, Begičević, 2009). Morić Milovanović and Galetić (2005), also Jurić (2005) presented a general overview of the Croatian investment trust industry at the time. Podobnik et al. (2007) evaluate the performance of mutual funds in Slovenia and Croatia, and investment funds in Bosnia and Herzegovina. In their analysis, the best performing funds are ranked on a risk-adjusted basis just because the returns are equally important as the absolute value of return. The research analysis made on selected investment fund in Slovenia do not confirm the hypothesis that the management of foreign equity mutual funds is more efficient than the management of domestic funds (Marković-Hribernik, Kuzner, 2013). In Serbia, the research conducted on eight open-end mutual funds for the period from 2008 to 2012, using performance measure like Sharpe ratio, Treynor ratio and Jensen index indicate that the portfolio of mutual funds has inferior performance compared to the market portfolio (Jakšić, Leković and Milanović, 2015).

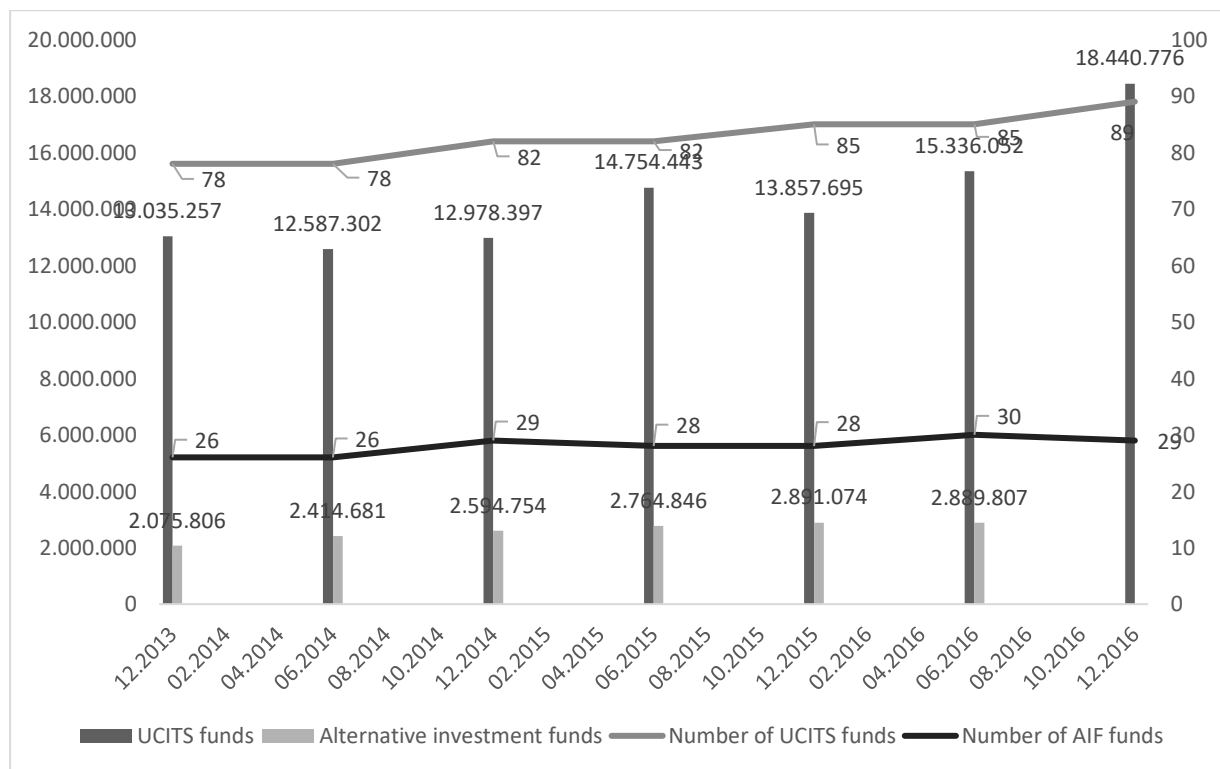
Some research paper examines the relationship between money market fund risks and outcomes during the crises (McCabe, 2010). Sajter (2011) made a performance analysis on absolute and risk-adjusted returns of five largest Croatian open-end equity mutual funds for the period before and after the financial crisis in 2008, observing the effect of risk-free rate. The financial crisis started 2008 had a great impact on the financial market in Croatia, and as well on the investment trust industry. Net asset value has dropped by more than 110% in 2008 compared to the previous year (Škrinjarić, 2015). During the financial crisis, after 2008 liquidity and stability of money market funds were challenged and the European Commission (EC) proposed setting minimum levels of daily and weekly liquid assets that MMFs are obliged to hold (Szczepański, EC, 2016).

## 3. INVESTMENT TRUST INDUSTRY IN CROATIA

The legislative framework of investment funds in the Republic of Croatia was provided by the Act on Investment Funds (No. 107/95) which is during the years passed through the important changes. The real development started with the adoption of the Act on Privatization Investment Funds (no. 109/97) through which a large number of the public company transformed into a private companies. Therefore, development of the fund industry in Croatia is directly related to the process of privatization (Jurić, 2005). Joining the European Union in 2013 and by adopting relevant legislations and guidelines of the EU today in Croatia there are two basic types of investment funds: *Undertakings for Collective Investment in Transferable Securities* (UCITS) and *Alternative Investment Funds* (AIF).

From the Table 1, according to official data taken from official annual reports of the Croatian agency for supervision of financial services (cro. HANFA), at the end of the December of 2016 in Croatia there were 118 investment funds registered, of which 89 were UCITS funds, and 24 AIF funds, and they were managed by 31 management companies (15 UCITS management companies and 16 manager of alternative investment funds). Investment funds net asset value (Table 1) indicates the dominate position of the UCITS fund compared to AIF funds, which is not surprising considering even the legal definition and characteristics of the funds, wherein the UCITS funds are designed for wide range of investors, and the AIF funds are appropriated mainly to the investors with more experience and knowledge in the field of investment (i.e. Professional and qualified investors) (cro. HANFA, 2017). The crucial factor in the movement of the net asset value of open investment funds with public offering is the perception of the investors and their confidence in the performance and operation of the analysed funds.

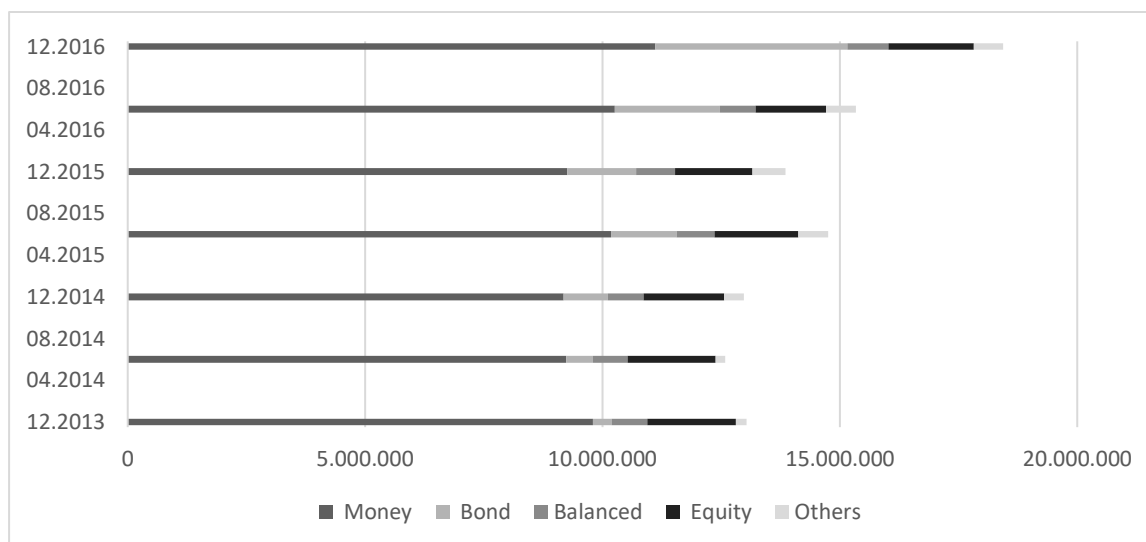
Table 1: *Investment funds' net assets in thousand HRK and number of Investment funds at the end of period [Based on HANFA annual reports for 2014, 2015 and 2016]*



The total value of investment funds net asset in 2016 amounted 18.225.776 thousand HRK (Table 1). Furthermore, we can see continuous increasing in the net asset value of the observed funds, as the results of the individual growth of the net asset of money market funds (Table 2) since they represent 63,88% of the total investment funds net asset. Increase of the net asset value was also enhance by the intensive growth of the bond funds, consequently to the decline in interest rate on the classical time deposits so investors are more incline towards alternative savings where they can achieved higher returns while assuming lower risk, and that are investment in money and bond funds.

Analysing in general the structure we can conclude that the largest share of investment refers to short-term securities and deposits, investment funds, bonds and equities. Analysis of the UCITS investment structure indicates a predominantly investments in short-term securities and deposits, consequently the largest share of net asset of money funds in the total amount of UCITS asset value (Table 3).

Table 2: Money market UCITS funds' investment structure at the end of period in thousand HRK [Based on HANFA annual reports for 2014, 2015 and 2016]



The continuous increase in the net asset value of money market UCITS funds is the result of the global economic crises when primarily equity funds started to generate negative returns, which resulted with a decline in investors' confidence in this kind of investment. Recently, net asset value of bond funds takes a larger share in the total amount of investment asset since the market is still indicating a relative scepticism among investors.

From the Table 3 we can see that in the analysed period money market UCITS funds invested more than 96% of their capital in short-term securities and deposits, specifically in domestic (an average of 91,86%) deposits and money markets investments (78,88%). Identified movements are expected since the money market UCITS funds are the safest form of investment, while the short-term securities and deposits with their low risk guarantee the relative security of investment.

Table 3: Investment structure of money market UCITS funds at the end of period in thousand HRK [Based on HANFA monthly reports for 2014, 2015 and 2016]

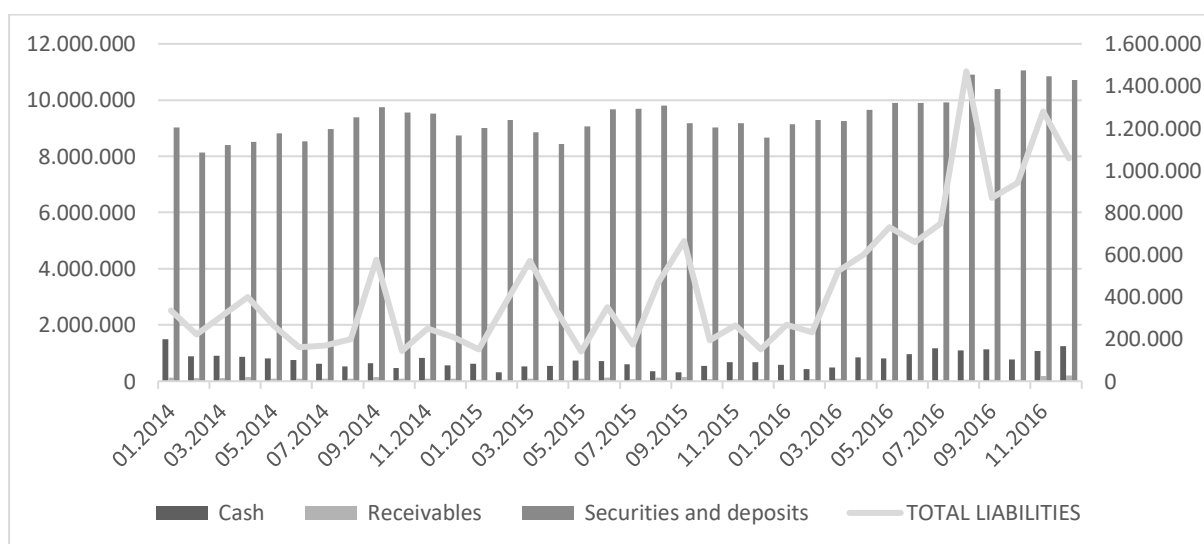
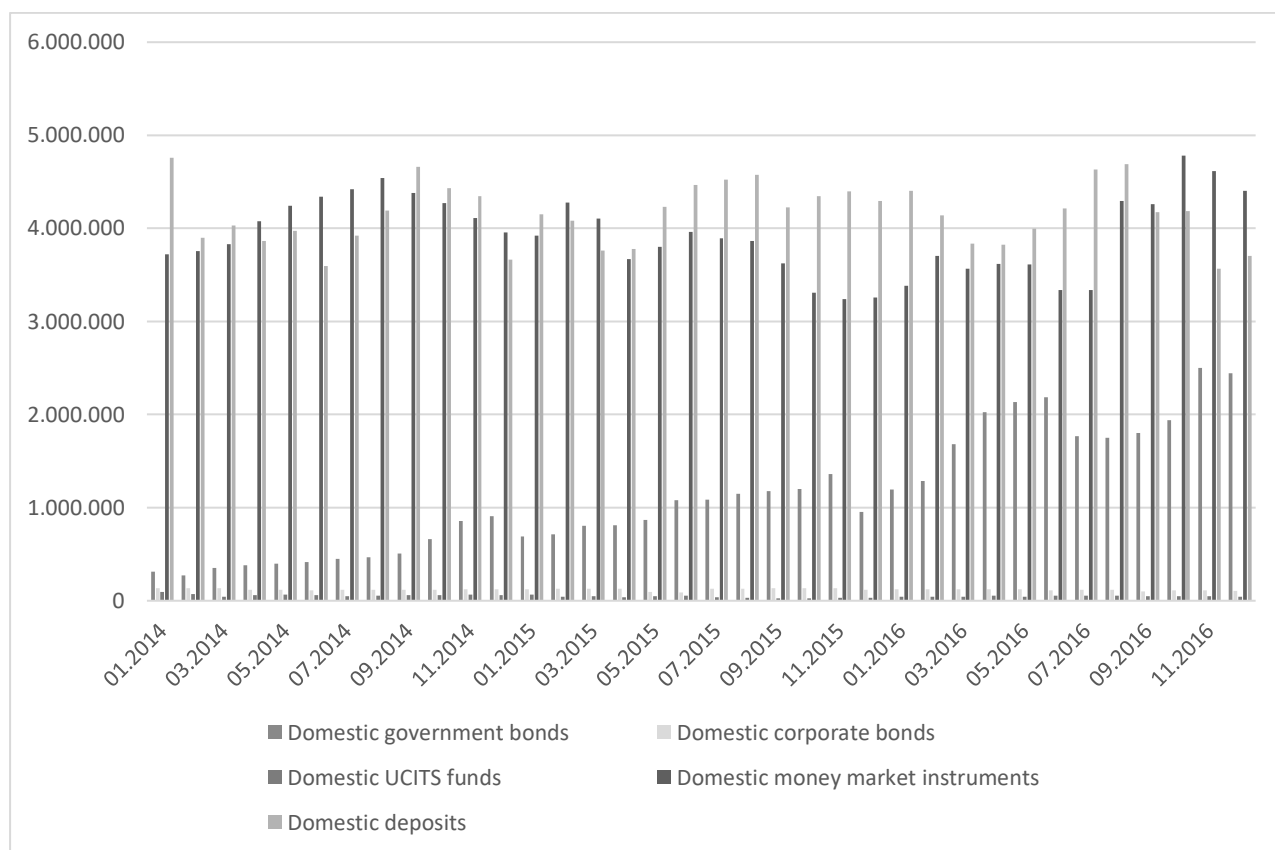


Table 4: Money market UCITS funds' investment structure at the end of period in thousand HRK [Based on HANFA monthly reports for 2014, 2015 and 2016]



#### 4. RESEARCH METHODOLOGY

The performance analysis was conducted on 17 money market UCITS funds which, on average, together represent 69% of the total net asset value of the UCITS funds. The intentional sample, chosen by the evaluation of the researchers, comprises *Alianz Cash*; *Auctor Cash*; *Erste Euro – Money*; *Erste Money*; *HPB Euronovčani*; *HPB Novčani*; *Locusta Cash*; *NETA MultiCash*; *OTP euro novčani*; *OTP novčani*; *PBZ Dollar*; *PBZ Euro novčani*; *PBZ Novčani*; *Raiffeisen Cash*; *Raiffeisen euroCash*; *ZB euoplus* and *ZB plus*. In the intentional sample were selected those funds which have had continued business operations during the observed period from January 1, 2014 to December 31, 2016. The performance analysis had been conducted on monthly returns of money market UCITS funds using the data from the official annual and monthly reports for the observed period from 2014 to 2016 that are available on the official website of the Croatian agency for supervision of financial services (cro. HANFA) and they were analysed using the descriptive statistics with the software package EViews and Excel. Therefore, conducted statistical analysis includes testing normality of monthly returns of money market UCITS funds distribution using the Jarque-Bera test, coefficient of skewness and coefficient of kurtosis. For the risk analysis the standard measure was used, specifically standard deviation and modified measure of standard deviation respectively downside deviation which includes the concept of minimum acceptable return (MAR) as a risk factor. Mentioned indicators can be classified into so-called absolute risk measures. For the minimum monthly return of analysed funds in these research was used the mean return of the return series itself, specifically 0%. The applied formula for the calculation, according to Taleski, Bogdanovski (2015) is:

$$\text{Downside deviation} = \frac{\sqrt{\sum_{i=1}^n (\min(R_i - \text{MAR}, 0))^2}}{N} \quad (1)$$

With the objective of the comparative performance analysis of the money market UCITS funds in these paper absolute risk-adjusted measures had been used, specifically Sharpe ratio and Sortino ratio which perceive the returns of investment funds in relation to the risk assumption. According to Bacon (2000), the Sharpe ratio is the best-known risk adjusted statistic, and it can be calculated by putting into relation the difference between average period return and risk free rate and standard deviation, based on CAPM model (Capital Asset Pricing model). In Croatia risk free rate amounts 4,41% (2016), and it represent an “average value of German government bonds returns (maturity of government bonds based on which the return on risk free investment is defined amounts 10 years) increased by the risk premium for the Republic of Croatia. Named parameter is determinate based on an index from Thomas Reuters Data and Damodaran and Watkins 2016 assessments of country risk premiums, and the value used in the calculation amounts 4,85% an also return on Croatian government bonds with a ten-year maturity in an amount of 3,98%. As said before, the amount is determined based on an index from Thomas Reuters Data.” (cro. HAKOM, 2017) The applied formula for the calculation, according to Taleski, Bogdanovski (2015) is:

$$\text{Sharpe ratio} = \frac{\text{mean} - \text{risk free rate}}{\text{standard deviation}} \quad (2)$$

According to Barjaktarović (2013), the biggest deficiency of the Sharpe ratio is the premise of the normal distribution of the return of investment funds. Since upside volatility will decrease the Sharpe ratio of investment, in our research we use also an alternative measured, specifically Sortino ratio. It is an extension of Sharpe ratio, and it measure the returns adjusted to the targeted return rate and decline risk (Sortino, Satchell, 2001), specifically it uses downside deviation instead of standard deviation as in Sharpe ration in the denominator, and the ratio is substituting the risk free rate with minimum acceptable return (MAR) (Taleski, Bogdanovski, 2015). The applied formula for the calculation, according to Taleski, Bogdanovski (2015) is:

$$\text{Sortino ratio} = \frac{\text{mean} - \text{MAR}}{\text{downside deviation}}$$

## 5. RESEARCH RESULTS

Table 5 present summary statistics for the analysed 17 money market UCITS funds in the observed period from the January 1, 2014 to December 31, 2016. Standard deviation as a measure of descriptive statistics represents an average deviation of numerical value of its arithmetic mean. Based on said, it can be calculated as the positive square root of the variance (Šošić, Serdar, 1995). According to Taleski, Bogdanovski (2015) a high standard deviation means that fund is volatile not that the fund is risky or will lose money, and vice versa. Based on conducted analysis we can conclude that obtained results indicated the uniform standard deviation with the approximate value of the observed central values. The results are considering acceptable since the money market UCITS funds, which were in focus of these analysis, are characterized as relatively low risk due to its portfolio investment. From the aspect of the coefficient of skewness majority of analysed funds are positive and asymmetrical, with the exception of OTP Novčani, PBZ Novčani and ZB plus, indicating a distribution with an



asymmetric tail extending toward more positive values. In addition, coefficient of kurtosis suggest that 9 of 17 analysed funds is higher than 3 indicating that the modal peak of the distribution is more rounded compared to that modal peak of the normal distribution, based on which we can conclude that the distribution is leptokurtic, meaning that it has fatter tail than the normal distribution. Consequently, the probability that the variable takes the value in these so called tails is greater so we can conclude that the probability of identifying outliers is higher, meaning that there is a risk of erroneously estimating the expected future returns. For testing normality of monthly returns of money market UCITS funds distribution Jarque-Bera test had been used, which includes the coefficient of skewness and coefficient of kurtosis with references to examine whether the estimate value deviate significantly from the values for the normal distribution. From the result we can see that with significance level of 10% for 10 out of 17 analysed money market UCITS funds the conducted results indicates that the p-value is lower than the observed significance level  $\alpha$  (Allianz Cash; Erste Euro Money; Erste Money; HPB Euronovčani; Locusta Cash; OTP Euro Novčani; PBZ Euro novčani; Raiffeisen Eurocash; ZB Europlus; ZB Plus). Based on said, it can be conclude that the distribution of analysed data is normal suggesting that projection of future returns of analysed money market funds can be calculated using the standard deviation as a measure of mathematical prediction. However, in other analysed funds in which it cannot be concluded that that the distribution of analysed data is normal distributed, projections based on standard deviation should be taken with caution considering some other measures for calculating the future returns. According to Taleski and Gogdanovski (2015) difference between traditional return analysis and absolute return analysis is in accepting that volatility is good provided it is on the upside. Therefore, investors should be conversant with the downside deviation, and the must define their individual minimum acceptable return (MAR) as a risk factor. Consequently, all the measures above the individual minimum acceptable return will be acceptable, while investment that fall below these defined minimum will be unacceptable for individual investors.

Table 5: Summary statistics [Author's calculations, an extract from software package EViews]

| Fund                   | Mean      | Median    | Std. Dev. | Skewness  | Kurtosis  | Jarque-Bera |
|------------------------|-----------|-----------|-----------|-----------|-----------|-------------|
| ALLIANZ CASH           | 0,0442    | 0,0400    | 0,0307    | 0,8627    | 3,2229    | 4,5408      |
| AUCTOR CASH            | 0,1033    | 0,0950    | 0,0305    | 0,2412    | 2,5733    | 0,6223      |
| ERSTE EURO MONEY       | 0,0658    | 0,0500    | 0,0415    | 1,1060    | 4,2288    | 9,6056      |
| ERSTE MONEY            | 0,0619    | 0,0500    | 0,0500    | 2,3702    | 11,180    | 134,0774    |
| HPB EURONOVČANI        | 0,0430    | 0,0300    | 0,0754    | 4,5530    | 25,0073   | 850,8686    |
| HPB NOVČANI            | 0,0536    | 0,0500    | 0,0228    | 0,4821    | 2,2075    | 2,3368      |
| LOCUSTA CASH           | 0,1347    | 0,1150    | 0,0907    | 3,6100    | 18,840    | 454,5723    |
| NETA MULTICASH         | 0,0800    | 0,0850    | 0,1264    | 0,1781    | 2,6167    | 0,4107      |
| OTP EURO NOVČANI       | 0,0452    | 0,0300    | 0,1071    | 1,3340    | 6,4545    | 28,5801     |
| OTP NOVČANI            | 0,0558    | 0,0650    | 0,0454    | -0,1880   | 2,3249    | 0,8956      |
| PBZ DOLLAR             | 0,1008    | 0,0900    | 0,0353    | 0,4260    | 2,4937    | 1,4734      |
| PBZ NOVČANI            | 0,0441    | 0,0450    | 0,0194    | -0,1080   | 2,1276    | 1,2114      |
| PBZ EURO NOVČANI       | 0,0627    | 0,0400    | 0,0581    | 1,7477    | 7,3329    | 46,48831    |
| RAIFFEISEN CASH        | 0,0630    | 0,0600    | 0,0288    | 0,3694    | 1,9184    | 2,5733      |
| RAIFFEISEN<br>EUROCASH | 0,0500    | 0,0400    | 0,0406    | 0,4481    | 6,1100    | 15,7138     |
| ZB EUROPLUS            | 0,0480    | 0,0400    | 0,0411    | 1,5119    | 5,4910    | 23,0245     |
| ZB PLUS                | 0,0455    | 0,0450    | 0,0148    | -0,2259   | -0,0126   | 0,3260      |
| <b>N</b>               | <b>36</b> | <b>36</b> | <b>36</b> | <b>36</b> | <b>36</b> | <b>36</b>   |

The results represent in the Table 6 indicates the return volatility of the analysed money market UCITS funds. The results show that with a MAR of 0%, it is normal to have losing months that are within calculated amounts of downside deviation (0,49% for Allinaz Cash; 0,49% for Auctor Cash; 0,57% for Erste Euro – Money; 0,62% for Erste Money; 0,76% for HPB Euronovčani; 0,42% for HPB Novčani; 0,84% for Locusta Cash; 0,99% for NETA MultiCash; 0,91% for OTP euro novčani; 0,59% for OTP novčani; 0,52% for PBZ Dollar; 0,39% for PBZ Euro novčani; 0,67% for PBZ Novčani; 0,47% for Raiffeisen Cash; 0,56% for Raiffeisen EuroCash; 0,56% for ZB europlus and 0,34% ZB plus). Negative returns outside or grated than above mentioned calculated amounts (downside deviation) are considered not normal.

Table 6: *Downside deviation, Sharpe Ratio and Sortino Ratio for the Money market UCITS funds [Author's calculations, an extract from software package Excel]*

| Funds                | Downside deviation | Sharpe Ratio | Sortino Ratio |
|----------------------|--------------------|--------------|---------------|
| ALLIANZ CASH         | 0,00487            | -0,1052      | 9,0686        |
| AUCTOR CASH          | 0,00485            | -0,0236      | 21,2940       |
| ERSTE EURO MONEY     | 0,00566            | -0,0262      | 11,6243       |
| ERSTE MONEY          | 0,00621            | -0,0284      | 9,9710        |
| HPB EURONOVČANI      | 0,00763            | -0,0239      | 5,6435        |
| HPB NOVČANI          | 0,00420            | -0,0969      | 12,7753       |
| LOCUSTA CASH         | 0,00837            | -0,0018      | 16,1042       |
| NETA MULTICASH       | 0,00988            | -0,0175      | 8,0977        |
| OTP EURO NOVČANI     | 0,00909            | -0,0290      | 4,9807        |
| OTP NOVČANI          | 0,00592            | -0,0597      | 9,4290        |
| PBZ DOLLAR           | 0,00522            | -0,0320      | 19,2049       |
| PBZ NOVČANI          | 0,00388            | -0,0738      | 11,3936       |
| PBZ EURO NOVČANI     | 0,00670            | -0,0132      | 9,3687        |
| RAIFFEISEN CASH      | 0,00472            | -0,0617      | 13,3609       |
| RAIFFEISEN EURO CASH | 0,00560            | -0,0295      | 8,9291        |
| ZB EUROPLUS          | 0,00563            | -0,0373      | 8,5321        |
| ZB PLUS              | 0,00337            | -0,1063      | 13,4643       |

From the Table 6 it is evident that all of analysed money market UCITS funds have had a negative value of the Sharpe ration, including the average unit of all 17 analysed funds (-0,0451). Monthly average returns of all analysed money market UCITS funds amounts 0,007% while estimated risk-free interest rate amounts 0,3675% (corrected annual rate to a monthly level). Considering that the analysis had been conducted on the money market funds which represent the safest form of investment comparing to all observed UCITs and AIF funds therefore the expected returns are significantly lower that the returns that can be achieved in other types of investment. Analysing the Sortino ratio which does not take into account standard deviation but the downside deviation, specifically minimum acceptable return (MAR) as a risk factor be concluded that all analysed funds generated positive performance, evident form the table 6. As mention before, all of analysed money market UCITS funds have realized higher returns than define their individual minimum acceptable return (MAR) indicating a very successful operation of all analysed funds. The importance of these conclusion is manifesting thought the fact that the money market UCITS funds are one of the largest institutional investor on the Croatian capital market.

## 6. CONCLUSION

The objective of this research was to analyse the performance of the investment trust industry in Croatia with focus on selected 17 money market UCITS funds, as one of the largest and most popular institutional investors on the Croatian capital market. These conclusion can be derived from the conducted analysis by which we establish a dominate position in the structure of net asset of the analysed open-end investment funds with public offering (UCITS) since they represent 63,88% of total amount with positive expected trend movements. Furthermore, based on analysis we can conclude that obtained results indicate good business performance of money market UCITS funds since the monthly returns indicate, in majority of analysed funds, distribution with an asymmetric tail extending toward more positive values, consequently higher return than interest rate on the classical time deposits which can be seen as an alternative investment in comparison to money market funds. Calculated risk-adjusted measures confirm positive performance of the money market UCITS funds, since the realized returns are higher than assumed minimum acceptable return (MAR) as a risk factor, suggesting a low risk due to its portfolio investment making them a very attractive investments.

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## NEW DIGITAL CONSUMER TRENDS AND CONSUMER PROTECTION RIGHTS CHALLENGES OF CROATIA AND EU IN INFORMATION ECONOMY

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### **ABSTRACT**

*New digital consumer trends are developing with the continuous rise of the information technologies while new information tools for making purchasing decisions emerge providing consumers with an ever wider choice available online 24 hours a day. The new digital products and services have also emerged but together with this new evolution the new privacy and personal data protection challenges have been encountered. Data processing, especially processing of personal data, developed the need for increasing privacy protection with regards to new digital products and services, such as internet of things. This could be done in the framework of the on-going revision of EU data protection framework but also the protection of consumer rights will need to follow the revision in the same context. Action should also be taken in order to protect consumers from unfair contract terms and offer them effective dispute resolution in a global and internet-based context (with special regard for cloud computing services). In addition, the reduced frontier between digital services and products may create legal uncertainty and protections of citizens's privacy with respect to the definition of digital economy new surroundings.*

*In this paper, the author will present the new emerging digital consumer trends with regulation overview of consumer protection rights in the Republic of Croatia and in the EU as well with emphasis on the possible challenges associated to them. It aims at contributing to the reflection on future policy actions that would improve consumer protection on EU level and it's empowerment which will result with better protection of consumers rights in fast growing digital economy.*

**Keywords:** *consumer protection rights, data processing, data protection, information economy, digital single market, EU, legal framework, personal data, regulation*

### **1. INTRODUCTION**

The development of information and communication technologies presents one of the major trends of recent times, making consumption increasingly 'digital' while not excluding traditional way of business. This sector is in constantly changing and it's evolution is in constant rise and new trends and challenges for consumer protection have recently emerged together with emergence of new digital products and services while developing digital single market on European level. Meanwhile, consumers are facing new opportunities and challenges together with complete information overload coupled with knowledge deficit resulted with new questions of protection of consumer rights, which are not respected in practice, as well as problems to be solved. Subsequently, the judicial systems of Republic of Croatia and the EU have taken actions in the form of legislation in order to improve consumer rights and as well as to rise the consumer protection to a higher level. Legal and security challenges which have been brought out by new digital market have developed the need to create a consumer protection framework that fits the digital age, covering the e-commerce and online services sector as well as the electronic communications sector. The new, effective legislation is fold out on national and on EU level following the revision of EU data protection framework which must be closely monitored and the relevance of adopting corrective measures must be assessed in the future.

## 2. DEVELOPMENT OF NEW INFORMATION ECONOMY

Information and communication technologies have had a powerful effect on the transformation of markets and of the business process in whole. A technological revolution, centered around information technologies, began to reshape, at accelerated pace, the material basis of society. (Fischer, 1985, pp 284-301) Economies throughout the world have become globally interdependent, introducing a new form of relationship between economy, state, and society, in a system of variable geometry. (Castells, 2010, p 1) Since ancient times, people have thought about how to improve their business, increase productivity, expand the market and, at the same time, reduce costs and achieve higher profits. Progress, in this regard, was extremely slow for centuries due to linguistic and spatial limitations, and also because of the low degree of technological development. People weren't able to overcome those limits until the industrial revolution and the development of information technology (with emphasis on the development of high technologies) enabled the development of new forms of business communication, organization and cooperation, as well as the very appearance of new types of services, and thus the improvement of traditional business. (Dragičević and Dragičević, 2003, p 357) The new, interactive way of communication that didn't have any spatial and/or temporal restrictions has developed the surroundings of the emergence and development of new forms of business and their wider introduction in the daily work in almost all areas threw information and communication technologies. Such operations however does not exclude the traditional forms and methods of work and business, on the contrary, it complements them and improve. Thus, the development and application of high technologies are becoming strategic objectives and commitment of every advanced society, and their implementation in business processes provided economic and every other progress that defines the new information economy. (Dragičević, Dragičević, 2003, p 358)

In order to understand the complexity of the technology it should be observed in relation to the economy, industry, and other categories of social organization, including culture. When it comes to new information technologies and information and communication technologies (hereinafter ICT) then we should also perceive the social dimension of defined techniques. (Čizmić, Boban and Zlatović, 2016, p ). The double process of introducing technological logic into the social sphere and social logic in the technical sphere, is in the heart of the technological dynamics and has direct impact on the cultural identity of both: society and the individual. New information technologies have a decisive impact on the social, political and socio-cultural level of society. First of all, the new technological revolution is based on ICT which determines and changes the fundamental characteristics of modern society in all its aspects and it is becoming increasingly global and interdependent, it is impossible to talk about the development of certain segments without links with trends in other segments. (Meštrović, 2007, p 86)

A new economy emerged in the last quarter of the twentieth century on a worldwide scale. I call it informational, global, and networked to identify its fundamental distinctive features and to emphasize their intertwining. It is *informational* because the productivity and competitiveness of units or agents in this economy (be it firms, regions, or nations) fundamentally depend upon their capacity to generate, process, and apply efficiently knowledge-based information. It is *global* because the core activities of production, consumption, and circulation, as well as their components (capital, labour, raw materials, management, information, technology, markets) are organized on a global scale, either directly or through a network of linkages between economic agents. It is *networked* because, under the new historical conditions, productivity is generated through and competition is played out in a global network of interaction between business networks. This new economy emerged in the

last quarter of the twentieth century because the information technology revolution provided the indispensable, material basis for its creation. (Castells, 2010, p 77)

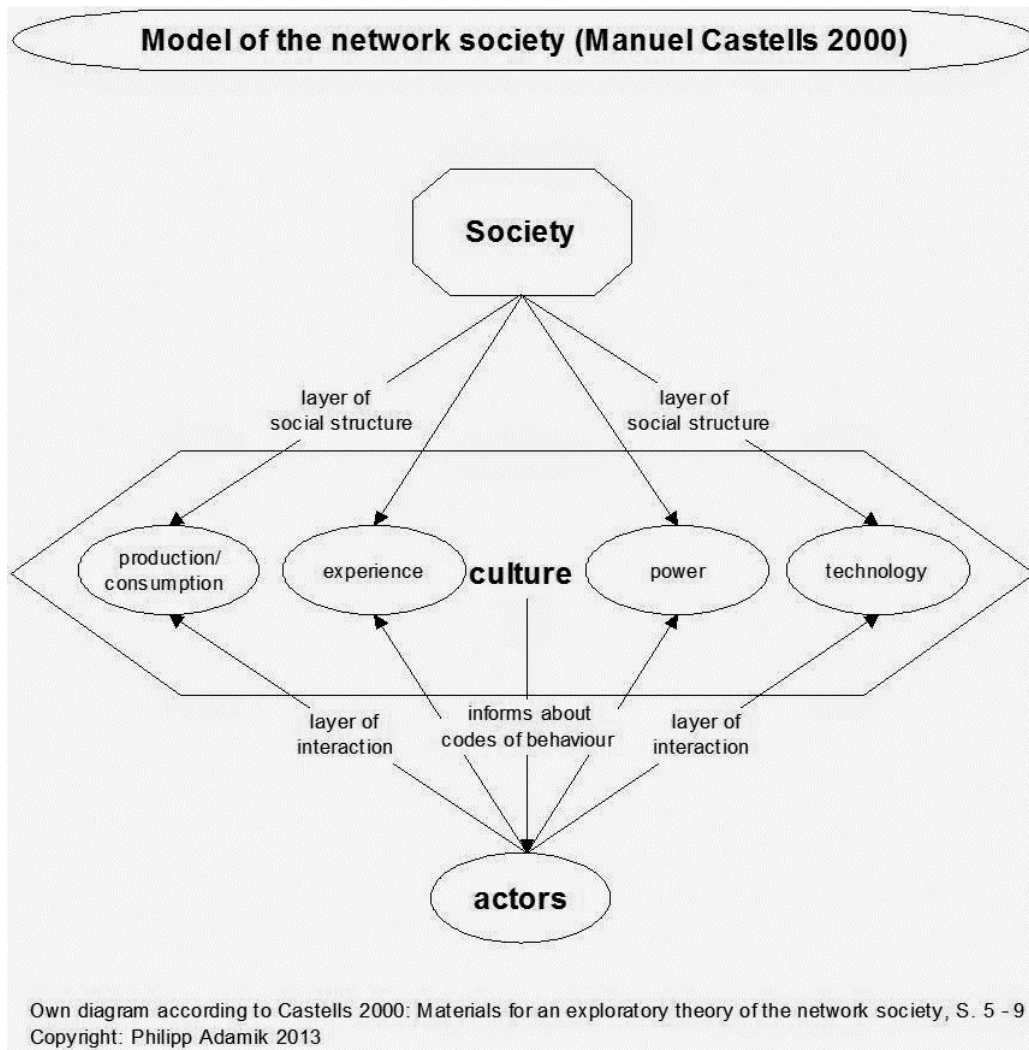


Figure 1. Castell's model of the The Rise of the Network Society, retrived 20. 03. 2017. from Little, D. (2015), Structures, diagrams, rules, and flows, Understanding society, CAT structure, [https://undsoc.org/category/cat\\_structure/](https://undsoc.org/category/cat_structure/) )

According to Castells, as shown on Figure 1, it is the historical linkage between the knowledge-information base of the economy, its global reach, its network-based organizational form, and the information technology revolution that has given birth to a new, distinctive economic system based on new information technologies, who by transforming the processes of information processing, act upon all domains of human activity, and make it possible to establish endless connections between different domains, as well as between elements and agents of such activities. (Castells, 2010, p 78) The new information economy is defined by information and knowledge as the critical components of economic growth in networked society emerging technologies and management in the virtual cycle of higher productivity. (Machlup, 1984)

### 3. NEW DIGITAL CONSUMER TRENDS AND CHALLENGES

One of the major trends of the last decades impacting consumers is technological and digital development. The rise of information society has also followed these contemporary trends

giving new challenges as well as adding security risks to the new digital market using internet as its main infrastructure. As is known, the Internet originated in a daring scheme imagined in the 1960s by the technological warriors of the US Defense Department Advanced Research Projects Agency (the mythical DARPA) to prevent a Soviet takeover or destruction of American communications in the event of nuclear war. The outcome was a network architecture which, as its inventors wanted, cannot be controlled from any centre, and is made up of thousands of autonomous computer networks that have innumerable ways to link up, going around electronic barriers. Ultimately ARPANET, the network set up by the US Defense Department, became the foundation of a global, horizontal communication network of thousands of computer networks bringing the world to the new information era. (Castells, 2010, 6-7) With the development of the internet and with the development of modern technologies, the new online services have also emerged. The consumers' have become increasingly present in the new virtual world buying new digital products which are available 24/7. Unfortunately, this new „evolution“ has also opened the new privacy and security challenges. (Boban, 2012, p 576). There is a present need for increasing privacy protection with regards to new digital products and services, such as internet of things. By its definition, the *Internet of Things* (hereinafter: *IoT*) is a concept allowing for the networking of different things and objects from everyday life and their everyday communication over the Internet, without human interaction, with a view to improving the conditions and way of life. (Weber and Boban, 2016, p 713) The term Internet of Things was employed for the first time by Kevin Ashton, the director of MIT's Auto-ID centre, in 1999 in his presentation for Procter & Gamble, but it took a few years for the term to enter more frequent use. IoT was formally introduced as a term in 2006 by the International Telecommunication Union (ITU) in its Internet report. (ITU Internet Reports, 2005). With the development of IoT technology, every device in our surroundings will be able to communicate with another device and send information to that device or control it, depending on the collected information. The scope of application of IoT may be divided into the following areas: personal and household use, economy, service programmes and mobile area. The above-mentioned division is presented in Figure 2.

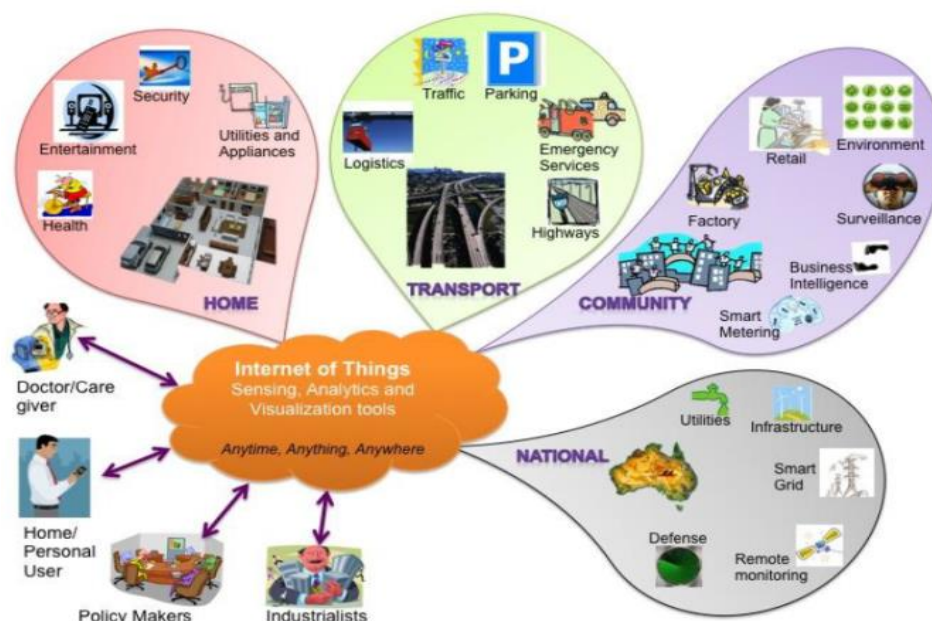


Figure 2. A graphic presentation of IoT end users and areas of application depending on the type of collected data, retrieved 23. 03. 2017. from Gubbi, J., Buyya, R., Marusic, S., Palaniswami, M., (2013), „Internet of Things (IoT): A Vision, Architectural Elements, and Future Directions“, *Future Generation Computer Systems*

Action should also be taken in order to protect consumers from unfair contract terms and offer them effective dispute resolution in a global and internet-based context to the privacy issued.



According to the European Commission "personal data is any information relating to an individual, whether it relates to his or her private, professional or public life. It can be anything from a name, a photo, an email address, bank details, posts on social networking websites, medical information, or a computer's IP address." (Blackmer, 2016) On the other hand, beside the new digital trends in consumption we should forget other challenges that consumers are facing continuously like: the increased complexity of financial products and services, the increasing influence of environmental, social, ethical and other quality aspects in purchasing decisions and the emergence of a new kind of vulnerable consumers. In addition, the reduced frontier between digital services and products may create legal uncertainty with respect to the definition of digital content. Finally, as technology develops, new and ever-more inventive fraudulent practices appear, affecting consumer trust, and should be combated. With the continuous development of the internet, new information tools for making purchasing decisions emerge, providing consumers with an ever wider choice in consumer goods, but also requiring them to manage that vastness of information. Reliability, transparency and independence of digital comparison tools such as comparison websites should be ensured. Services provided by search engine operators should also be guided by the principles of equality and nondiscrimination. Trustmarks for e-commerce could help consumers in making informed choices, but the multiplicity of them may lead to confusion. In addition, new types of commercial practices linked to the internet have appeared (e.g. personalised pricing, behavioural profiling), raising questions of data protection and transparency. (Directorate general for internal policies, 2011, p 5) This could be done in the framework of the on-going revision of EU data protection framework threw General Data Protection Reform proces (hereinafter GDPR). The main foundation of GDPR is that the regulation applies if the data controller or processor (organization) or the data subject (person) is based in the EU. Furthermore (and unlike the current Directive) the Regulation also applies to organizations based outside the European Union if they process personal data of EU residents which wasn't the case before. The regulation does not apply to the processing of personal data for national security activities or law enforcement ("competent authorities for the purposes of prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties").

In the new digital trends surroundings, European Union seeks to respond to the challenges of unleashing growth and restoring confidence in the European economy by enhancing consumer empowerment and creating policy synergies. To achieve durable results, it is important to determine the main policies based on EU legislation bringing smart and sustainable demand by consumers matched with fair supply which will contribute bringing the EU back on higher level of growth and productivity.

#### **4. REGULATION OVERVIEW OF CONSUMER PROTECTION RIGHTS IN THE REPUBLIC OF CROATIA AND EU**

In the EU, consumer protection legislation guarantees that everyone has the right to be treated fairly when buying household goods at the supermarket, paying the bill at the energy supplier or downloading music.<sup>1</sup> This statement is cited from the main page of EU Commission dedicated to protection of consumer rights showing the dedication of European union to consumer protection which is clearly stated at The Charter of Fundamental Rights and the European treaties since the Single European Act guarantees the high level of consumer protection in the EU. (*The Charter of Fundamental Rights*, Art. 38) It is also a general objective defined in Article 12 of the *Treaty on the Functioning of the EU* (hereinafter *TFEU*) which says

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<sup>1</sup> Available at [http://ec.europa.eu/consumers/consumer\\_rights/index\\_en.htm](http://ec.europa.eu/consumers/consumer_rights/index_en.htm) (21. 03. 2017.)

that European legislation guarantees consumers: fair treatment; products which meet acceptable standards and a right of redress if something goes wrong. (TFEU, Art. 12)

Consumer protection, by definition, presents a group of laws and organizations designed to ensure the rights of consumers, as well as fair trade, competition, and accurate information in the marketplace. (Weatherill, 2013) The consumer protection laws and policies are designed to prevent the businesses that engage in fraud or specified unfair practices from gaining an advantage over competitors. They may also provide additional protection for those most vulnerable in society as the way of government regulation that aim to protect the rights of consumers. Generally, consumer protection is ensured by a diverse set of policies, such as data protection policies, food safety, public health, product safety, etc. Also, the consumer and marketing legislation is aimed to protect the economic interests of consumers as well as their privacy. It is based on the notion that the asymmetry of information, where the seller knows more about the product or service than the consumer, is open to abuse. It mainly covers unfair commercial practices and consumer contract law, such as misleading advertising and unfair contract terms which is also present in the new online businesses. (Twigg-Flesner, 2012) Additionally there are provisions that protect vulnerable consumers, such as children.

One of the main policies in consumer protection is the European Consumer Agenda which identifies the key measures needed now to empower consumers and boost their trust. It sets out measures to put consumers at the heart of all EU policies as means to achieve the Europe 2020 goals.<sup>1</sup> It builds on and complements other initiatives, such as the *EU Citizenship Report* (EU Citizenship Report COM, 2010, 603 final), the *Single Market Act* (Single Market Act COM, 2011, 206 final), the *Digital Agenda for Europe* (A Digital Agenda for Europe COM, 2010, 245 final/2), the *E-commerce Communication* (E-commerce Communication COM(2011) 942) and the *Resource Efficiency Roadmap* (Roadmap to a Resource Efficient Europe COM, 2011, 571 final).<sup>2</sup> In the field of research and innovation, it draws on initiatives under Horizon 2020 to deepen scientific understanding of consumer behaviour and the health, safety and sustainability aspects of the choices they face. In line with the above mentioned *Treaty* (Article 12 TFEU) and the *Charter of Fundamental Rights* (Article 38), the Agenda develops a systematic approach to integrating consumer interests into all relevant policies and puts a special emphasis on tackling problems faced by today's consumers in the food chain, energy, transport, digital and financial services sectors. It builds on the prominent level of consumer protection already achieved and the progress made in creating a European Area of Justice by enhancing the role that judges, legal practitioners and enforcement authorities can play, including across borders. (European Consumer Agenda, 2012)

In Republic of Croatia, as well as on European level, consumer protection is of public interest and presents the basic acquisition of civilization and democratic society. As such it is in function of providing quality of life for all citizens. Today, consumer is a regulator of the economy's development influencing directly the business policy of businessmen, promoting the competitiveness and creating the stimulating environment in the market. Consumers trust is of the exceptional importance. A right to a safe product is an inviolable right - it is the right to life protection and health which is clearly stated in *Croatian Consumer protection law* (Official Gazette no. 41/14, 110/15 – - hereinafter CPL). This Act regulates the protection of the basic rights of consumers when buying products and services, as well as in other forms of acquisition of products and services on the market, namely:

1. The right to protection of economic interests of consumers;

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<sup>2</sup> EU Citizenship Report COM (2010) 603 final; Single Market Act COM (2011) 206 final; A Digital Agenda for Europe COM (2010) 245 final/2; E-commerce Communication COM (2011) 942; Roadmap to a Resource Efficient Europe COM (2011) 571 final.

2. The right to protection from danger to life, health and property;
3. The right to legal protection of consumers;
4. The right to consumer information and education;
5. The right of association of consumers to protect their interests;
6. The right to consumer representation and participation of representatives of consumers in the work of dealing with the issues of their interest. (CPL, Art. 1)

Connected to the digital agenda, it is important to protect also the consumer's personal data since the privacy of individuals presents the constitutional category of Republic of Croatia. (*Constitution of the Republic of Croatia, "Official Gazette" no. 56/90, 135/97, 8/98-revised text, 113/2000, 124/2000 - consolidated text, 28/2001, 41/2001-consolidated text, 85 / 2010-consolidated text - hereinafter Constitution, Art. 37*). The Constitution of the Republic of Croatia Art. 37 explicitly states that „Everyone shall be guaranteed the security and confidentiality of personal data. Without consent, personal data may be collected, processed and used only under conditions specified by law. The law is governing the protection of data and supervision of the information systems in the country. The use of personal data contrary to the purpose of their collection is prohibited. “(*Constitution, Art. 37*) Also, it is clearly stated at the Article 11 of CPL that disposal of personal information of consumers which prohibits the seller from giving customer personal information to any third party without the prior consent of the consumer, in accordance with the law governing the protection of personal data (CPL, Art. 11).

Based on the Constitution, the legal framework of privacy and protection of personal data of consumers in Republic of Croatia is regulated also by the following legislative: *Law on Protection of Personal Data, Official Gazette of Republic of Croatia 103/03, 118/06, 41/08, 130/11, 106/12-revised text*); *Law on Right to Access Information, (Official Gazette no. 172/03,85/15)*; *Law on Information Security,( Official Gazette of Republic of Croatia 79/07)* and *Law on Personal Identification Number, (Official Gazette of Republic of Croatia, No. 60/08.)*(Boban, 2014, p 1689)

## 5. CONCLUSION

Intensive development and rapid formation and implementation of information technology have exceeded expectations, intentions and ideas even their creators. It is well known that this trend is actually the price of progress in the world where possibilities go together with the new challenges to the same phenomena and processes, and it is impossible to predict to prevent new scenarios even while following new consumer trends. New digital consumer trends are developing with the continuous rise of the information technologies while new information tools for making purchasing decisions become available 24/7. Even though the European Union as well as Republic of Croatia have developed legislation and policies, presented in this paper, in order to increase the consumer protection the new digital economy is growing with new challenges almost daily. Unfortunately, all the numerous abuses in practice of protection of consumer rights that come out of these frameworks while supporting negative consequences become inevitable companion of modern development. From this perspective, contribution to the reflection on future policy actions that would improve consumer protection on EU level and the empowerment of consumers rights becomes crucial question in fast growing digital economy.

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## **SPECIFIC CHARACTERISTICS OF CONTRACT ON PURCHASE OF SECURITY UNDER CONDITIONS IN THE SLOVAK REPUBLIC**

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### **ABSTRACT**

*Capital market as a complex of institutions and transactions, mechanism of demand and offer for medium-term and long-term monetary capital represents the part of financial market, where the movement of securities takes place and it is the part of every functioning market economy. After 1989, securities have become substantial tool in companies' management, whose main goal was to store and evaluate free funds and invest them in securities. It is not possible to be successful without the knowledge of legal regulation of securities on the securities market. (Piškanin, 2006) The main goal of this paper is to examine the issue of contract of purchase of security in the conditions of the Slovak Republic. The essential legal enactments except the Constitution of the Slovak Republic are Act about securities and investment services, Commercial Code and Civil Code. (Drgonec, 2012) The content of the paper is anchored in the area of financial management, however it also offers the outstanding overlaps into the area of constitutional and commercial law. It has the effects of multidisciplinary and also international legal research of the issue, whose concept and legal regulation remains to a large extent, after years of professional and amateur discussions (not only) in the Slovak legal environment unfinished*

**Keywords:** *act, contract of purchase, financial management, securities*

### **1. INTRODUCTION**

Regulation of securities and contracts on securities in most European countries, with the exception of Switzerland, is not covered by one act. The same situation lasted also during the existence of Czechoslovakia. Due to excessive fragmentation of diverse regulations on securities as well as due to needs of financial markets, an intent to create a unified legal code in the form of a code arose, in order to eliminate such deficiency.

The first attempt of the common legislator – the Federal Assembly of the Czech and Slovak Federative Republic - was the adoption of the act No. 600/1992 Coll. on Securities, whereas its major part entered into force in the Slovak Republic on 31. 12. 2001. During the period in which the act was in force, it was amended 12 times. Due to the proposed scope of changes in regulation of activities and status of a stock brokerage firm, centre of securities and other subjects of the capital market in the Slovak Republic, as well as due to introduction of other institutes (Investment Guarantee Fund, State Supervision on Consolidated basis), the recodified

version of the act under the name Act on Securities and Investment Services was submitted. (Nováčková, Milošovičová, 2011)

### **Act on Securities and Investment Services**

Act. No. 566/2001 Coll. on Securities and Investment Services (Securities Act) as amended (hereinafter the „Act on Securities“) , which entered into force on 1. January 2002 and which constitutes „lex generalis“ of legal regulation on securities in the Slovak Republic, is the main source of legal regulation on securities. The Act on Securities is based on EU directives which are considered as a framework for regulation of activities of subjects of capital markets, as well as with respect to the requirement of information obligations and protection of investors. However, these directives do not regulate the field of contracts on securities in any way, as this field has been left for the EU member states to regulate internally. (Milošovičová, Nováčková, 2014)

The subject matter of regulation of the Slovak Act on Securities are securities, investment services, selected contractual relations related to securities, selected relations related to activities of persons providing investment services as defined in the § 5 of the Act such as stock brokerage firms and foreign stock brokerage firms, activity and operation of the central depository of securities, selected relations related to operations of other subjects such as issuers of securities and other persons gathering funds from public for business activities, guarantee fund or investors into securities and state supervision on individual as well as on consolidated basis. (Stoličná, 2012)

## **2. CONTRACTS ON SECURITIES IN GENERAL**

The Act on Securities regulates in its second part several types of contracts, subject matter of which are securities. This regulation has been included in the act as a reaction to the foreseen increase in legal relations that involve securities and in particular as a reaction to the expected growth of trade with securities. Until the Act on Securities entered into force, such types of contracts had been lacking in the Slovak legal order. Thus it was, at that time, necessary to apply general types of contracts regulated in the Civil Code or the Commercial Code, which comprised contractual types for disposition of things, rights or proprietary values. However, this situation has caused severe doubts in some cases. After the Act on Securities entered into force, specific contracts on securities became part of our legal order. In the second part of the act, contractual types are to be found, with the unifying common aspect – its subject matter – securities, but otherwise substantially different in its character. In addition, other common traits may be identified.

## **3. CONTRACT ON PURCHASE OF SECURITIES**

Change in the person of the owner of securities is usually based on a contract on purchase of securities, which is relatively briefly regulated in the provision of § 30 par. 1 to 3 of the Act on Securities with subsequent reference to subsidiary application of the provisions of the Commercial Code on purchase contract. Purchase contract, regulated in the provisions of § 409 to § 475 of the Commercial Code, is a type of a commercial contract, which is used between entrepreneurs conducting their business activities and as a relative commercial obligation relation. With reference to the dispositive principle of the Commercial Code, only provisions of § 444, § 458 and § 459 of the Commercial Code have been set as cogent by the legislator.

In contrast to a general purchase contract, the contract on purchase of security as a specific contractual type based on the provision of § 261 par. 6 of the Commercial Code is subsumed under the category of absolute commercial obligation relations. This means that rights and duties arising out of it are subsumed under the regime of the Commercial Code in full extent regardless of character of contractual parties. As the Act on Securities does not include a legal

definition of this contractual type, the contract on purchase of security may be defined as a contract, based on which the seller is obliged to deliver a security, determined individually or as to quantity and kind and to transfer his ownership right to it and the buyer is obliged to pay him a purchase price“

Substantial parts of the contract on purchase of security are:

1. determination of contractual parties, i.e.. who is the buyer and the seller,
2. determination of obligation of the seller to deliver the security,
3. determination of obligation of the seller to transfer the ownership right to the security to the buyer,
4. determination of subject matter of the contract, i.e. specification of security, including determination of class of security, number of transferred securities, purchase price and ISIN Number, if assigned,
5. determination of obligation of the buyer to pay the purchase price.

In order for the contract to be valid, it is required exact specification of the subject of the contract as well as of the purchase price. Non-fungible securities must be defined exactly, so that no doubt as to which security is being transferred, may arise. Fungible securities are usually defined as securities of a certain class, nominal value and number.

The issue of determination of the purchase price is left to an agreement of contractual parties. The second option is to determine the way of calculating the purchase price (e.g. based on a stock exchange rate on a certain day). The contract on purchase of securities is valid without determination of a purchase price only under condition that contractual parties agreed to conclude it without determination of purchase price. In such case, this deficiency is borne by the seller as the buyer is obliged to pay to the seller only such purchase price that corresponds to the lowest price at which a fungible security was traded on the day when the contract was concluded on a stock exchange. If the purchased fungible security was not traded on a stock exchange on this day, the buyer is obliged to pay the purchase price at which the security was previously traded on a stock exchange. If the purchase price may not be determined even in this way, the buyer is obliged to pay such purchase price that could be achieved with due professional care.

In contrast to the provision of § 409 of the Commercial Code, which does not require a written form of the purchase contract, the Act on Securities strictly insists on the written form of the contract on purchase of a registered paper security, which if not followed, results in invalidity of the contract. A contract on purchase of a paper security must be concluded in writing only if stated by a specific regulation. Informal character of the contract has been maintained with respect to the contract on purchase of a book-entry security.

A contract on purchase of securities usually contains other than substantial provisions, governing rights and duties of contractual parties for the purpose of their cooperation by performance of the contract and consequences and sanctions in case of default or violation of obligations. These parts of the contract are non-substantial and may or may not be part of the contract. If such provisions are not included by contractual parties, their contractual rights and obligations in this regard are governed by applicable provisions of the Commercial Code.

Main obligations of a buyer include – to deliver the subject of the contract (in this case the security) in a due and timely manner, i.e. within the time period agreed by contractual parties and without legal and factual defects (e.g. lien right to the security). Furthermore, he is obliged to provide all documents pertaining to the subject of purchase and last, but not least and to provide a possibility to acquire ownership right to the purchased securities in an agreed or in the legal seven-day period from conclusion of the contract.

With respect to paper securities, handing-over of securities to the buyer is required in order for the obligation to be fulfilled. With respect to paper bearer securities, the handing over of securities is a sufficient legal act for the buyer to acquire the security, the ownership and other

rights to the security. Special situation occurs with respect to paper order securities, where an endorsement by the seller must be made. An endorsement means the marking of the ownership right to the security on the backside of the security. Only under cumulative fulfillment of these two conditions, the buyer becomes the owner of the security as well as the person authorized to exercise rights connected to it. If only one of both circumstances occurred, the obligation of the seller could not be considered as fulfilled. If the record on the endorsement was missing, the buyer would have the security at his disposal, however, he would not have the possibility to exercise the rights connected to the security, which would, eventually, be in conflict with the purpose of the contract on purchase of security. Similarly, if the endorsement was made but the security was not handed over to the buyer, the buyer would not be able to exercise the rights to the security.

As already mentioned, if a registered security is transferred, the Act on Securities requires obligatory written form of the contract. By such regulation, the legislator wanted to express the possibility of integration of two contractual types into one contract. It is the option to integrate the agreement on assignment of a claim, which is legally regulated in provisions of § 524 to § 530 of the Civil Code together with a contract on transfer of securities. (Círák et al., 2008)

If the subject of the contract is transfer of ownership right to book-entry securities, the obligation to hand them over to the buyer is excluded. In this case, the obligation of the seller to transfer the security to the buyer is fulfilled in the moment of registration of the transfer. The person authorized to carry out this act is the Central Depository of Securities, which shall do so after receiving two orders for registration with the same content, i.e. the order of the buyer and the order of the seller.

Among basic duties of the buyer is the duty to pay the purchase price, the amount of which is determined in the purchase contract. The contract should also regulate the issue of maturity of the purchase price, whereas the maturity may be bound to fulfilment of a certain condition, e.g. to transfer the security into the assets of the buyer. One of the safest ways of securing payment of the purchase price is vinculation of the purchase price by a third person – such as notary or a bank, which provides security to both contractual parties. The buyer does not have to be worried that he pays the purchase price without acquiring the ownership right to the security and vice versa, the seller may be assured that the payment of the purchase price is made. One of deficiencies of the Act in Securities is that it lacks legal regulation of such situation when the maturity of the purchase price is not agreed by the contractual parties. In this case it is necessary to apply the provision of § 450 of the Commercial Code, according to which the buyer is obliged to pay the purchase price when the seller, pursuant to the contract and the Commercial Code, enables him to dispose of the security. The legislator also enables the seller to make the handing over of the security dependent on the payment of the purchase price.

With respect to paper securities, also the issue of transition of danger with respect to damages on securities from the seller to the buyer must be considered. These may be cases of potential damage, loss or destruction of the security. As the Act on Securities does not deal with this question, it is necessary to determine this issue in the contract, otherwise, the provisions of § 455 to § 461 of the Commercial Code apply. From this general legal regulation results that the danger of damages to security is transferred to the buyer in the moment, when it is handed over to him or, if it is not taken over in a timely manner, in the moment, when the seller enables him to dispose of the security, whereas the buyer is in breach of the contract by not taking over the security.

The major part of obligations resulting from the contract on the purchase of securities becomes extinct upon its fulfillment that is - by transfer of the ownership right to security in favor of the seller and by payment of the purchase price. Thus the purpose that gave rise to these legal relations is fulfilled. In practice, such situations may arise, that some of the obligations are violated, either by the seller or by the buyer. In contrast to Czech legal regulation, default or



non-performance of an obligation is not specifically regulated by the Act on Securities. Thus it is necessary to carry out the provisions of § 365 to § 385 of the Commercial Code.

The seller is in default with fulfilment of his obligation not only by violating his obligation to deliver the security in the time period as agreed, but also by defective fulfilment of his obligations, e.g. by delivering a different security or by delivering a security which is encumbered by a right of a third person. The Commercial Code by the cogent provision of § 324 par 1 declares, that an obligation is extinct by its fulfilment in a due and timely manner. This means, that as a violation of contractual duties may be considered such situation that even though the time of fulfilment was met, the performance was not provided in a due manner, i.e. the sold security was encumbered by a lien of a third person, which was in contrary to declaration of the seller in the purchase contract and this status prevents registration of change in ownership. (Saxunová, 2014)

Knowledge of the buyer of existence of defects of the security in time of conclusion of the contract on purchase or a reasonable presumption of such knowledge constitutes a specific reason for exclusion of liability of the seller for this defect of the security. However, liability of the seller for defects is not excluded when the security was supposed to have certain characteristics and, in fact, it did not have them. In this case, knowledge of the buyer is not examined with respect to professional care, only with respect to such care that is adequate under the circumstances. The legal order of the Slovak Republic enables that the contract on purchase of securities contains the clause „tel quel“ (as it is), or „taken-over and approved“. This constitutes a contractual agreement which excludes liability of the seller for defects of a purchased and delivered security, in a similar way as it is when the clause „under condition as it stands and lies“ according to the provision of § 501 of the Civil Code. When the security is bought using the „tel quel“ clause, the buyer in principle may not object to non-corresponding quality of the security.

If any contractual party is in default with fulfilment of its obligations arising out of the purchase contract, the damaged party may use general provision of § 346 par. 1 and 2 of the Commercial Code and withdraw from the contract. Another possibility as to compensation of defective performance is the requirement for a discount from the purchase price, for elimination of defects of the subject of purchase or delivery of a substitute subject of purchase if defects may not be eliminated.

Potential claims from defective performance under the contract on purchase of securities must be enforced first towards the seller without undue delay after they were identified. If the seller's attitude towards solution of the problem is negative, it is necessary to enforce the claim before courts by filing an action no later than in four years following enforcement of the claim against the seller, otherwise the right of the buyer from defective performance becomes statute-barred. (Ficová, 2010)

#### 4. DISCUSSION

At first sight, it is possible to come to the conclusion that contracts on purchase of securities are not completely specific as they, in a substantial extent, represent certain subtypes of general contracts regulated by codes of commercial and civil law. In this regard, we may mention especially contracts concerning transfer of securities, contracts on procurement of trade with securities or contracts on securing obligations by securities. As it results from the Act on Securities, with regard to contractual types regulated by this law, the Act on Securities itself refers to the Commercial Code or Civil Code.

Contracts on transfer of securities are characterized by change in the owner of the security. Contract on purchase of security, contract on donation of securities and contract on loan of a security are regulated by the Act on Securities only to a minimum extent or only their specific traits as the Act on Securities refers to regulation of contract types in the Civil Code or the

Commercial Code. The contract on purchase of securities is perceived as a subtype of the purchase contract regulated in provisions of § 409 to 476 of the Commercial Code. The contract on donation of securities is subsumed under the regime of the Civil Code regardless of the nature of contractual parties. The third contract – contract on loan of a security - is subsidiarily governed by both codes, depending if the contract is with or without payment. (Strážovská, 2016)

## 5. CONCLUSION

The Act on Securities as well as its predecessor in its second part regulates the area of contract on securities. Based on the results of analysis, it may be stated that legal regulation of the contract on purchase of securities is, regardless of attempts of the legislator, still insufficiently regulated, as it does not conform to last trends of European law. The greatest deficiency from a legal point of view is considered to be the incompleteness of legal regulation. The Ministry of Finance of the Slovak Republic, which submitted the governmental draft of the act on securities and investment services, has, in several cases, been satisfied with indications of regulation of selected contractual types. The same may be stated with respect to the contract on purchase of securities.

This fragmentation may, in case of unclarities, result in substantial number of disputes with more than unclear results. Within critical view on our regulation, the scholarly literature always refers to the more elaborated and more adequate diction of Czech legal regulation, which is currently represented by the Czech Civil Code. It is a code of private law with the status of *lex generalis* which has been in force since 2014. It attempts, in its more than three thousand articles, to unify the Czech private law, which includes also the law of securities. After two years of its effectiveness, it may be conclude by both, Czech theoreticians as well as legal professionals, that the way, which has been chosen by the Czech legislator, is not absolutely correct. The attempts to incorporate the branch of law of securities into private law, as a typical public law branch, may, eventually, result in disarray and unclearness of this legal branch. (Sulíková, Strážovská, 2016)

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## **Enterprise in Turbulent Environment**

## OPTIMAL MANUFACTURING QUANTITY FOR SCREENING EQUIPMENT POLICY WITH IMPERFECT PRODUCTION PROCESS

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### ABSTRACT

*The trading-off between quality requirements and quality costs are an important issue. This study derives an optimal order quantity and the optimal number of screening equipment such that the total profit per manufactured batch is maximized. Illustrative case studies, numerical examples, and sensitivity analysis are presented to demonstrate the proposed model.*

**Keywords:** Screening equipment, Imperfect production process, Quality costs

### 1. INTRODUCTION

In striving to manufacture quality products, manufacturers not only have to consider manufacturing costs, but also must maintain the quality requirements to remain competitive. However, to improve upon the product's quality it is necessary to reduce defective items within the design, production and screening process. The manufacturing process of Hi-tech products usually requires the need for many workstations. Each semi-finished product in the workstation is the raw material of the next workstation. If the semi-finished product is defective and is not repaired on the workstation, then it is rendered a defective item after moving to the next station. As a result, the screening process of workstations plays an important role in maintaining quality control. However, the screening process requires relevant equipment and trained professionals. For the sake of maintaining good quality, the related cost is needed. Therefore, the trade-off between the quality and cost is an important factor for managers. In practice, managers must first count the percentage of defective products in each workstation and subsequently determines the necessity for investing in screening equipment. The objective of the trade-off between gains from good items and losses from defective items to maximize profit.

Rosenblatt and Lee (1986) were early researchers who considered defective items and imperfect quality production processes. Salameh and Jaber (2000) displayed an inventory model which accounted for imperfect items using the EPQ/EOQ formulae. Eroglu and Ozdemir (2007) developed an economic order quantity model with defective items and shortages. Sana (2011) presented an integrated production-inventory model for supplier, manufacturer and retailer supply chain, considering perfect and imperfect quality items. Hsu and Hsu (2013) developed an integrated inventory model for vendor-buyer coordination under an imperfect production process. Many companies promote quality as the central customer value and consider it to be a critical success factor for achieving competitiveness. Any serious attempt to improve quality must take into account the costs associated with achieving quality since the objective is to meet customer requirements at the lowest cost (Schiffauerova and Thomson, 2006). Quality costs are the costs incurred in the design, implementation, operation and maintenance of a quality management system, the cost of resources committed to continuous improvement, the costs of system, product and service failures, and all other necessary costs and non-value added activities required to achieve a quality product or service (Dale and Plunkett, 1995). Chiu and Su (2010) considered the quality cost, the time-value of money, and the exponential process quality improvement function in constructing a new total cost model to optimize the production

period, and initial investment in process improvement so as to minimize total cost. Most of the past research have discussed the inventory problems of imperfect items. However, to the best of our knowledge, little research had been found on improving the imperfect rate of items. This study considers an inventory model of ordering raw material one-time for the production to meet the quantity and quality of the orders. An algorithm is presented to derive an optimal order quantity for the raw material and the number of screening equipment required such that the total profit per manufactured batch is maximized.

## 2. ASSUMPTIONS AND NOTATION

- (1). Defective units are directly returned for re-manufacturing in the same workstation as the screening equipment is set.
- (2). Shortage is not allowed.
- (3). Single manufacturer and single retailer are considered.
- (4). The capacity of the warehouse is unlimited.

The following notations are used:

|          |                                                                                               |
|----------|-----------------------------------------------------------------------------------------------|
| $p$      | defective percentage in per manufactured workstation                                          |
| $\delta$ | unit manufacture's compensation cost for less achieve percentage of retailer's order quantity |
| $N$      | total number of workstation, integer                                                          |
| $s$      | salvage per imperfect manufactured unit                                                       |
| $r$      | revenue per perfect manufactured unit ( $0 < r < 1$ )                                         |
| $\beta$  | manufacturer 's delivery percentage                                                           |
| $Q$      | manufacture's order quantity for the raw material                                             |
| $k$      | number of workstation with the screening equipment, integer, variable                         |
| $C_s$    | screening cost containing the equipment, ( \$ / screening equipment )                         |
| $C_m$    | manufacturing cost per unit containing material ( \$ / unit )                                 |
| $C_o$    | ordering cost ( \$ / order)                                                                   |
| $Q_o$    | retailer's ordering quantity for the manufactured unit                                        |
| $TP$     | total profit per manufacturing batch                                                          |

## 3. MODEL DEVELOPMENT

In this study, a supply chain with a manufacturer and a retailer is assumed. The retailer obtains the products from the manufacturer for sale to the customers.

Assume that the manufacturer producing the items from raw material into a finished product needs  $n$  workstations, and the semi-finished products outputs from each workstation with defective percentage of  $p$ . Assume that every screened imperfect item can be served as a good item after being repaired in the same workstation, and passed through to the next workstation. If the workstation is not set up with the screening equipment, the imperfect items in the workstation are still regarded as defective after passing out of the next station, and cannot be returned for repair. The imperfect items can be let out for recovery with salvage value  $s$ . Assume that the manufacturing cost per unit containing material is  $C_m$ . Assume that the total number of workstation is  $N$ , while there are only  $k$  of the screening equipment are set in the workstation for the sake of reducing the screening costs ( $K < n - 1$ ). Although, less screening equipments can lead to lowered costs, more defective products are produced. Based on maximizing the total profit per manufacturing batch,  $TP$ , how to decide the order quantity for the raw material,  $Q$ , by the manufacturer when the retailer's ordering quantity for the manufactured unit is  $Q_o$ ?

From the statement above, one has

The total profit per manufacturing batch,  $TP$  is as follows:

$$\begin{aligned} TP = & \text{Revenue of perfect items from per manufactured batch} \\ & + \text{Salvage of imperfect items from per manufactured batch} \\ & - \text{Total manufacturing cost - Ordering cost - Total screening cost} \end{aligned}$$

The constraint is that the quantity of the perfect items from per manufactured batch is the retailer's ordering quantity,  $Q_o$ . One has

$$TP(k, Q) = rQ(1-p)^{N-k} + sQ[1-(1-p)^{N-k}] - Qc_m - c_o - kc_s. \quad (1)$$

The following two cases consider the systems with the constant defective percentage and variable defective percentage.

**Case 1: When the achieve percentage of the retailer's ordering quantity is 100%.**

Our problem can be formulated as:

Maximize:  $TP(k, Q)$

$$\text{Subject to: } Q(1-p)^{N-k} = Q_o, k \leq N. \quad (2)$$

From (2),

$$Q = \frac{Q_o}{(1-p)^{N-k}}. \quad (3)$$

Substitute Eq. (3) into (1),  $TP(k, Q)$  can be transformed as

$$TPx(k) = rQ_o + \frac{sQ_o[1-(1-p)^{N-k}]}{(1-p)^{N-k}} - \frac{c_m Q_o}{(1-p)^{N-k}} - c_o - c_s k. \quad (4)$$

That is, our problem can be formulated as:

Maximize:  $TPx(k), k \leq N$ .

(5)

Since

$$TPx'(k) = \frac{sQ_o[1-(1-p)^{N-k}]\ln(1-p)}{(1-p)^{N-k}} + sQ_o \ln(1-p) - \frac{c_m Q_o \ln(1-p)}{(1-p)^{N-k}} - c_s. \quad (6)$$

$$TPx''(k) = \frac{sQ_o[1-(1-p)^{N-k}]\ln^2(1-p)}{(1-p)^{N-k}} + sQ_o \ln^2(1-p) - \frac{c_m Q_o \ln^2(1-p)}{(1-p)^{N-k}}. \quad (7)$$

Simplify (7), one has

$$TPx''(k) = Q_o \ln^2(1-p)(1-p)^{-(N-k)}(s - c_m) < 0. \quad (8)$$

(Note:  $s < c_m$ ) Therefore, which leads to the function  $TPx(k)$  being strictly concave.

Set  $TPx'(k) = 0$ , one has

$$k = \frac{N \ln(1-p) - \ln\left(\frac{Q_o \ln(1-p)(s - c_m)}{c_s}\right)}{\ln(1-p)}. \quad (9)$$

Since the number of screening equipment,  $k$ , is an integer variable, the necessary condition of optimal solution for  $TP$  at  $k = k^*$ ,  $Q = Q^*$  is

$$\Delta TP(k^*, Q^*) > 0 > \Delta TP(k^* - 1, Q^*),$$

(10)

where

$$\Delta TP(k^*, Q^*) = \Delta TP(k^* + 1, Q^*) - \Delta TP(k^*, Q^*),$$

(11)

**Example 1.** Assuming  $N=30$ ,  $p=0.01$ ,  $r=25$ ,  $s=5$ ,  $c_m=10$ ,  $c_o=300$ ,  $c_s=550$ , and  $Q_o=10000$ . Then from (9 and 10),  $k=21.016$ , because  $TP(21, Q)=133416$  and  $TP(22, Q)=133414$ , therefore  $k^*=21$ , with  $Q^*=10947$ , and  $TP(k^*, Q^*)=133416$ .

**Case 2: When the achieve percentage of the retailer's ordering quantity is less than 100%.**

In practice, short delivery always happen. Compensation mechanism came into being. In this case, the manufacturer can only set the delivery  $\beta\%$  in the last resort. Then the retailer needs to make compensation  $0.01\beta\delta$  for the manufacturer. When the achieve percentage of the retailer's ordering quantity is  $\beta\%$ , the total profit per manufacturing batch is

$$TP_1(k, Q) = rQ(1-p)^{N-k} + sQ[1-(1-p)^{N-k}] - Qc_m - c_o - kc_s - 0.01(100-\beta)\delta. \quad (12)$$

Our problem can be formulated as:

Maximize:  $TP_1(k, Q)$

Subject to:  $Q(1-p)^{N-k} = 0.01\beta Q_o, k \leq N$ .

(13)

From (3),  $TP_1(k, Q)$  can be transformed as

$$TP_1x(k) = r0.01\beta Q_o + \frac{s0.01\beta Q_o[1-(1-p)^{N-k}]}{(1-p)^{N-k}} - \frac{c_m 0.01\beta Q_o}{(1-p)^{N-k}} - c_o - c_s k - 0.01(100-\beta)\delta. \quad (14)$$

That is, our problem can be formulated as:

Maximize:  $TP_1x(k), k \leq N$ .

(15)

Since

$$TP_1x'(k) = \frac{s0.01\beta Q_o[1-(1-p)^{N-k}]\ln(1-p)}{(1-p)^{N-k}} + s0.01\beta Q_o \ln(1-p) - \frac{c_m 0.01\beta Q_o \ln(1-p)}{(1-p)^{N-k}} - c_s. \quad (16)$$

$$TP_1x''(k) = \frac{s0.01\beta Q_o[1-(1-p)^{N-k}]\ln^2(1-p)}{(1-p)^{N-k}} + s0.01\beta Q_o \ln^2(1-p) - \frac{c_m 0.01\beta Q_o \ln^2(1-p)}{(1-p)^{N-k}}. \quad (17)$$

Simplify (17), one has

$$TP_1 x''(k) = 0.01\beta Q_o \ln^2(1-p)(1-p)^{-(N-k)}(s-c_m) < 0. \quad (18)$$

(Note:  $s < c_m$ ) Therefore, which leads to the function  $TP_1 x(k)$  being strictly concave.

Set  $TP_1 x'(k) = 0$ , one has

$$k = \frac{N \ln(1-p) - \ln\left(\frac{0.01\beta Q_o \ln(1-p)(s-c_m)}{c_s}\right)}{\ln(1-p)} \quad (19)$$

Since the number of screening equipment,  $k$ , is an integer variable, the necessary condition of optimal solution for  $TP_1 x$  at  $k=k^*$ ,  $Q=Q^*$  is

$$\Delta TP_1(k^*, Q^*) > 0 > \Delta TP_1(k^* - 1, Q^*) \quad (20)$$

Example 2. Assuming  $N=30$ ,  $p=0.01$ ,  $r=25$ ,  $s=5$ ,  $c_m=10$ ,  $c_o=300$ ,  $c_s=550$ ,  $Q_o=10000$ ,  $\delta=2000$ , and  $\beta=98$ .

Then from (19 and 20),  $k^*=19$ , with  $Q^*=10946$ , and  $TP(k^*, Q^*)=\$128562$ .

#### 4. CONSLUSION

Nowadays, quality requirement is the core competition in business. For the sake of maintaining good quality, the related cost is needed. However, it is important for managers to determine the trade-off between quality and cost. In this study, we derive an optimal order quantity for the raw material and number of screening equipment such that the total profit per manufactured batch is maximized. In analyzing the system, we provide managerial insights to decision makers for planning the optimal number of screening equipment for reducing the quality cost. Illustrative case studies, numerical examples, and sensitivity analysis are presented to demonstrate the proposed model.

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## ACCEPTANCE OF CLOUD ERP SYSTEMS IN CROATIAN COMPANIES: ANALYSIS OF KEY DRIVERS AND BARRIERS

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### ABSTRACT

*In previous research, we determined an actual state of application of business information systems in Croatian companies. With regard to technological developments in Cloud Computing and Software as a service (SaaS) licensing models, a Cloud ERP systems are imposed as possible solution for raising the level of using information systems in businesses. So, the focus of this research was shifted to identify the level of readiness of accepting Cloud ERP systems in Croatian companies. The study is based on the literature review, where key drivers and barriers were systematized. Next, the online survey was designed and conducted among Croatian companies, with responses from total of 74 companies. Survey results gives the perception of the importance of certain key drivers and barriers for accepting Cloud ERP system in Croatian companies. The most important key drivers, according to this research are: ubiquity and availability; easier upgrade; low initial investment and faster and easier implementation. Our research recognized following barriers as the most important: problems related to security; privacy and confidentiality; and problem of compatibility and integration with other existing systems.*

**Keywords:** *Acceptance of cloud ERP systems, ERP, cloud ERP systems, key drivers, barriers*

### 1. INTRODUCTION

As technology has grown and developed, the usage of business information systems as an essential piece of the successful operation of every organization has been increased. Integrated view of organizations' business processes implemented as information system is nowadays known by the acronym ERP systems. Furthermore, thanks to the development of technologies (Cloud Computing and communication technologies), today we can talk about business solutions known as Cloud ERP systems. Due to number of advantages Cloud ERP systems are becoming more and more accepted. The recent *Beyond ERP* report [1] from Price Waterhouse Cooper claims that investments in cloud based (Software as a Service) ERP solutions will double, while traditional ERP implementations will fall by 30%. While companies worldwide eagerly accept emerging technologies and concepts, the question that arises is: what is the situation in Croatian companies? Our previous research [2] has shown that Cloud ERP systems did not manage to significantly penetrate into Croatian companies, so traditional on-premises solutions maintain their ongoing dominance. In this paper, we investigate the reasons for poor acceptance of Cloud ERPs in Croatia. The rest of the paper proceeds as follows. In Section 2, the related work is listed. In Section 3 we describe the used research method. Section 4 shows results of the online questionnaire, together with its discussion. Our conclusions are provided in the final section.

## 2. RELATED WORK

Traditional on-premise ERP systems have long been out of reach for SME's due to large upfront investments, long and risky implementation process, inflexible licensing models and other issues which naturally follow implementation of the largest and most complex business software. However, the advent of Cloud technologies and associated business models is closing the gap between ERP systems and SME's. Although Cloud solutions do mitigate a number of issues which previously have made it difficult for SME's to acquire and use ERP systems, Cloud ERP systems bring both good and bad things to the table. Salleh et al. [3] in their 2012 literature review on adoption of Cloud ERP systems list following advantages of Cloud ERP systems: reduction of hardware and license costs, lower total cost of ownership, lower upfront costs, reduced costs and efforts for upgrades, ease of implementation, opportunity to transfer internal resources (such as IT) to other tasks and place focus on core business function, scalability and manageability. The same authors also warn that a number of challenges should also be kept in mind, such as: security, flexibility and customization issues, ownership of data, integrity of provider, inability to move to other Cloud ERP providers (vendor lock-in), possible issues with integration of Cloud ERP and existing IT services, abandoning existing in-house solutions, interoperability between different cloud vendors, possible performance issues due to bandwidth or other technical limitations. The respondents of survey on ERP systems conducted by McCrea [4] stated their reasons for going with SaaS ERP solution which include: desire to run leaner operation, greater utilization of resources, scalability, better communication with customers and vendors, and the cost structure. On the other hand, respondents share their concern with security, reliability and performance of Cloud-based ERP systems. Hofmann and Woods [5] admit cloud technology can offer many benefits especially for smaller enterprises such as: eliminating the need for upfront capital expense, license models where you pay only for what you use, shifting the IT burden to Cloud vendors, and rapidly scaling resources up or down. However, the focus of their paper is on the limits of public Clouds for business applications. They claim that enterprises can expect many trade-offs if they move their business into cloud, including: security, interoperability issues and vendor lock-in, absence of Service-Level Agreements, performance instability, latency and network limits, no scalable storage and innovation impairment. Saeed et al. [6] conducted systematic literature review and series of interviews with experienced ERP users, providers and consultants in order to build a unified framework of motives and barriers for Cloud ERP adoption. The *adoption motives* dimension of their framework consists of three *strategic motives* (flexibility for business innovation, faster time to market, and opportunity to concentrate on core business); three *operational motives* (reduced IT costs, scalability, low capital expenditure); and two *technical motives* (high technical reliability, and automatic upgrades). The *adoption barriers* dimension holds two *strategic barriers* (already invested into on-premises system, and lack of early adopters); three *operational barriers* (government security regulations, current system fits business strategy, performance and availability issues); three *technical barriers* (security and privacy risks, difficult customization, and difficult integration). Mijač et al. [7] in their literature review reported a number of challenges regarding customization and configuration of Cloud ERP systems. Lewandowski et al. [8] used interviews and questionnaire to gather data from 5 companies in order to identify key success factors and challenges in adopting SaaS ERP systems. They recognized SaaS ERP advantages in terms of transferring total costs of ownership and maintenance to the service providers. However, their respondents stated several major concerns when adopting SaaS ERP, namely: vendor lock-in, loss of control over changes made to system, inability to customize system, government or industry compliance requirement, integration with other systems, data and application security, and performance. Johansson and Ruivo [9] interviewed 20 ERP experts on factors for SaaS ERP adoption, with top 10 factors being: costs, security, availability, usability, implementation, ubiquity, flexibility,

compatibility, analytics, and best practices. Guo Chao Alex and Chirag [10] also interviewed 16 ERP and Cloud consultants in order to identify Cloud ERP benefits and barriers. Their ontology reports four high level *benefits* (cost and support, speed and performance, upgrade and enhancement, and mobility) and five barriers to Cloud ERP adoption (transparency and data privacy, data security, vendor lock-in, integration difficulties, organizational challenges). Johansson et al. [11] investigated opportunities and concerns of Cloud ERP adoption taking into account the size of the company. The results from interviewed experts showed that opportunities were in favor of SME's, while most concerns were in relation to large companies. Opportunities regarded as significant in SME's were: lower upfront investment, operating costs and TCO, access to cutting-edge IT resources, advanced security measures, business continuity, mobility, scalability, deployment speed, and business focus. On the other hand, only jurisdiction compliance has been regarded as significant, and cloud insecurity and performance as moderate concerns in SME's.

Reported factors affecting adoption of Cloud ERP systems may be considered globally important for enterprises around the world. However, individual countries or regions still may take a different view on these factors, due to their economic, social, legal or even cultural specifics. Still, only few of the papers explicitly deal with Cloud ERP from the perspective of individual countries or regions. For example, Boateng and Essandoh [12], Kuliya et al. [13] and Lechesa et al. [14] are investigating Cloud computing adoption in SME's African countries (Ghana, Nigeria and South Africa respectively), while Sharma et al. [15] and Mahara [16] are scoping their research on Indian SME's. Key drivers and barriers reported in these country-scoped studies are similar to other related studies. However, since these are the countries which can be considered as developing economies, they are also putting an emphasis on some specific factors. For example, there is a lot of concern over lack of internal expertise, poor quality or unavailability of internet access, other infrastructural problems, lack of information about cloud computing, and trust issues. At the same time, availability of external expertise, modernization and cost reduction makes cloud computing offerings attractive.

### 3. RESEARCH METHOD

The goal of this research is to evaluate acceptance level of Cloud ERP systems in Croatian companies. This will be achieved by answering to the following research questions:

1. What are the *key drivers* and *barriers* for accepting ERP solutions implemented in the cloud for Croatian companies?
2. What *changes* or preconditions company is aware of which need to be carried out to move to Cloud ERP systems?
3. In which business segments respondents believe that cloud ERP can add more value?

In order to obtain relevant data, Croatian companies were contacted by email and asked to participate in an online questionnaire. Contact details of companies have been extracted from BizNet – the register of Croatian business entities. Only companies from register which were characterized as medium in size were taken into consideration. In order to cover different types of companies, with different business activities and in different administrative and geographical parts of Croatia, no other constraints were specified. The search resulted in total of 1277 companies extracted from register. We also promoted our survey on Dignet Days 2015<sup>1</sup> technical conference and encouraged visitors to participate. The companies were then asked by email to participate in an online questionnaire, and have been given 10 days to fill in their

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<sup>1</sup> DignetDays2015: Cloud ERP and Retail, 23.10.2015., Cinestar Arena Center, Zagreb, Croatia

responses. In this phase, we had received responses from 40 companies. After that all companies were again sent an email with a reminder, and this resulted in additional 34 responses. Total of 74 responses were received for a response rate of 5,8%.

The questionnaire was divided into two sections. The first section contained questions for profiling organization and the respondents (company's primary business activity, number of employees, and the respondent position in company). The second section contained questions aimed to reveal the attitude of respondents that work in Croatian companies about ERP systems in Cloud.

#### 4. RESULTS

This section presents the results of conducted research and answers to three main research questions mentioned in the previous section. Results can be seen through 6 perspectives.

##### **Profile of organization and respondent:**

Respondent companies represented a diverse sample of industries and sizes. Most responses, approximately 25%, were obtained by companies which core business is *manufacturing*. Of the remaining respondents 21,6% choose *Other*, 18,9% are in *Service* sector, 13,5% are dealing with *Sales*, 12,2% are in *State and public* sectors, 4,2% are in *Finance* business, 2,8% are in *Telecommunication* and finally 1,4% are in *Non-profit* sector.

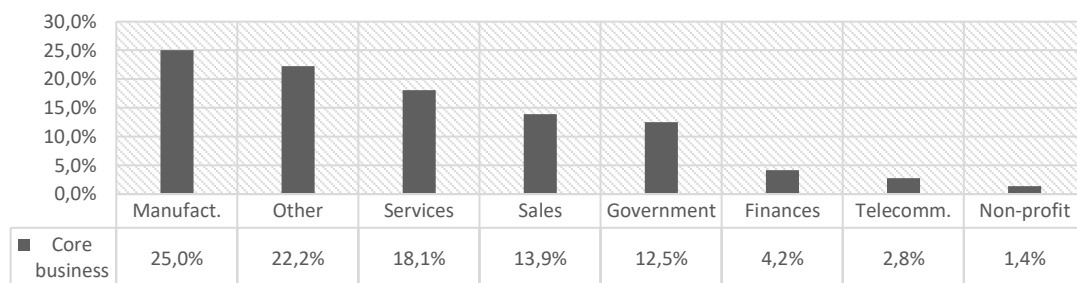


Figure 1 Companies distributed according to core business

According to size of organization, 50% of answers were from middle size companies with 50 to 250 employees, 27% small companies up to 50 employees and 23% from big companies with more than 250 employees. Our focus are small and medium companies because more than two-thirds (77%) responses were from them.

When looking at the position of respondents in the organization who participated in the survey, three roles are dominant: *Head of department* 44,6%, *Employee* (end user) 25,7% and *Director* 24,3%. Answer *Project Manager* has the smallest percentage 5,4%. Large portion of respondents (68,9%) are decision makers and that fact makes our results more valuable.

##### **Current state of business information system types**

This group of questions aims at finding out which types of business information system were used by Croatian companies, which ones are the most common and how they were obtained.

Among the respondents, 59,5% (58,1+1,4%) have ERP system (one respondent have cloud ERP) which is a good indication that the companies recognized the importance of the applying integrated and comprehensive business information system as a base of doing business successfully in the current conditions on the market. This answer corresponds to the World 2015 ERP report [17] where it is reported that 56% of companies implemented on-premises information system. So the Croatian companies are similar to the world average. When analyzing the other two answers, the picture is a little different. Very large number of surveyed

companies (40,5%) still have separate information subsystems for their business functions. Even more surprising is the fact that only small percentage of them (1,4%) have Cloud ERP.

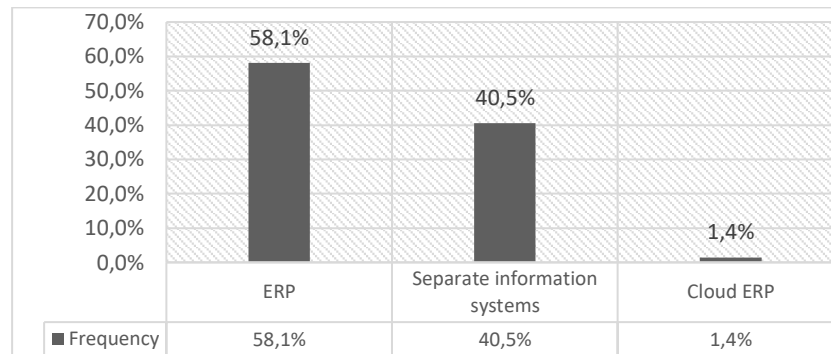


Figure 2 Types of business information systems in companies

This shows that while the world market is focusing on Cloud ERP systems, Croatian companies are lagging behind. Some reasons for this can be found in results of this research.

### Key drivers for accepting cloud ERP solutions

One of goals of this research was to find importance (rank) of the key drivers identified in the literature review for Croatian Companies. For each key driver average mark and standard deviation was calculated and then all of them were ranked. Results are shown in Table 3.

| rank | key drivers                                                              | average mark | st dev |
|------|--------------------------------------------------------------------------|--------------|--------|
| 1    | Ubiquity and availability                                                | 4,00         | 1,09   |
| 2    | Easier upgrade                                                           | 3,84         | 1,15   |
| 3    | Low initial investment                                                   | 3,82         | 1,15   |
| 4    | Faster and easier implementation                                         | 3,82         | 1,05   |
| 5    | Business processes designed to best practice                             | 3,70         | 1,06   |
| 6    | Better utilization of computing resources                                | 3,65         | 1,07   |
| 7    | Scalability                                                              | 3,61         | 1,02   |
| 8    | Improved relations with business partners                                | 3,45         | 1,22   |
| 9    | Less need for IT staff                                                   | 3,28         | 1,18   |
| 10   | Providers with ERP as a service offers a platform for own upgrade (PaaS) | 3,26         | 1,01   |

Table 7 Rank of key drivers for accepting cloud ERP solutions

We have used the SAS JMP tool to statistically analyze the results. Marks were fitted by key drivers, and one way Anova method was used. Table 4 shows the results of the analysis. Prob > F (0,0001) is less than 0,05, so we can conclude that there is a difference in perception of the relevance between different key drivers. The most important key drivers by average marks are: *Ubiquity and availability*, *Easier upgrade*, *Low initial investment*, and *Faster and easier implementation*. Respondents ranked the key drivers: *Less need for IT staff* and *Providers with ERP as a service offers a platform for own upgrade (SaaS)* as less important.

Table following on the next page

### Summary of Fit

|                            |          |
|----------------------------|----------|
| Rsquare                    | 0,044299 |
| Adj Rsquare                | 0,032517 |
| Root Mean Square Error     | 1,099746 |
| Mean of Response           | 3,643243 |
| Observations (or Sum Wgts) | 740      |

### Analysis of Variance

| Source     | DF  | Sum of Squares | Mean Square | F Ratio | Prob > F |
|------------|-----|----------------|-------------|---------|----------|
| Key Driver | 9   | 40,92432       | 4,54715     | 3,7597  | 0,0001*  |
| Error      | 730 | 882,89189      | 1,20944     |         |          |
| C. Total   | 739 | 923,81622      |             |         |          |

Table 8 One way Anova analysis of key drivers

### Barriers for accepting cloud ERP solutions

Second goal of this research was to find importance between barriers identified in the literature review - how respondents in Croatian Companies rank these barriers. For each key barrier average mark and standard deviation was calculated and then all of them were ranked. Results are shown in Table 4.

| rang | barriers                                                                         | average mark | st dev |
|------|----------------------------------------------------------------------------------|--------------|--------|
| 1    | Problems related to security, privacy and confidentiality                        | 3,85         | 1,15   |
| 2    | Problem of compatibility and integration with other existing systems             | 3,80         | 1,05   |
| 3    | Problem of reliability and availability ERP system in cloud                      | 3,74         | 1,10   |
| 4    | Limited ability to adapt the ERP system to processes of the organization         | 3,72         | 1,01   |
| 5    | Previously large investments in existing systems                                 | 3,70         | 1,08   |
| 6    | ERP system performance                                                           | 3,62         | 1,07   |
| 7    | Vendor lock-in (high dependence on provider and hard achieving interoperability) | 3,59         | 1,01   |
| 8    | Subscription expenses                                                            | 3,51         | 1,10   |
| 9    | Limited functionality (only core functionality)                                  | 3,49         | 0,93   |
| 10   | Organizational resistance                                                        | 3,20         | 1,20   |

Table 9 Rank of barriers for accepting cloud ERP solutions

Similarly as with key drivers, we have used the SAS JMP tool to statistically analyze the results. Marks were fitted by barriers, and one way Anova method was used. Table 6 shows the results of the analysis. Prob > F (<0,0001) is less than 0,05, so we can conclude that there is a difference in perception of the relevance between different barriers for accepting cloud ERP solutions. The most important barriers by average marks are: *Problems related to security, privacy and confidentiality* and *Problem of compatibility and integration with other existing systems*. Respondents ranked the barriers: *Subscription expenses*, *Limited functionality (only core functionality)*, and *Organizational resistance* as less important.

### Summary of Fit

|                            |          |
|----------------------------|----------|
| Rsquare                    | 0,060944 |
| Adj Rsquare                | 0,049366 |
| Root Mean Square Error     | 1,024551 |
| Mean of Response           | 3,563514 |
| Observations (or Sum Wgts) | 740      |

### Analysis of Variance

| Source   | DF  | Sum of Squares | Mean Square | F Ratio | Prob > F |
|----------|-----|----------------|-------------|---------|----------|
| Barrier  | 9   | 49,73108       | 5,52568     | 5,2640  | 0,0001*  |
| Error    | 730 | 766,28378      | 1,04970     |         |          |
| C. Total | 739 | 816,01486      |             |         |          |

Table 10 One way Anova analysis of barriers

### Awareness of changes or preconditions

Since moving on the cloud ERP is a big decision, we tried to get picture of changes companies think they should make or preconditions to fulfill in order to be ready or to be better prepared for Cloud ERP. Results are presented in Figure 5. The result shows high positive perception of factors, where dominant factor is: *Make a cost-benefit analysis of migrating to a cloud ERP system (81,1%)*. That is expected, because *financial profitability / reducing costs* is the main motivation to adopt cloud technologies.

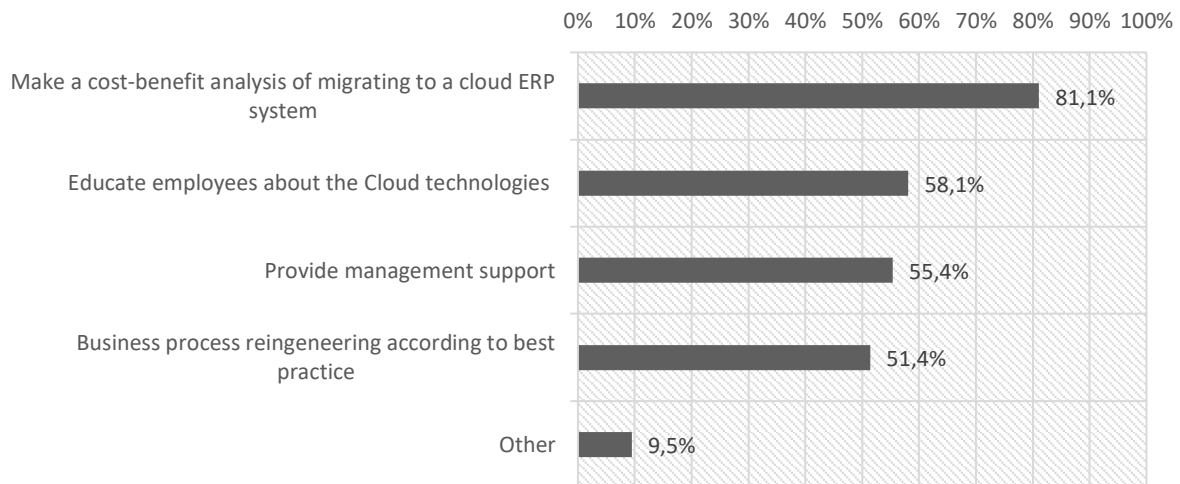


Figure 3 Awareness of changes or preconditions

When respondents have chosen “Other” option, we allow them to type custom factor/s. Some of the entries were interested:

- check the cloud ERP functionality in detail
- 7/24/365 availability must be provided
- change corporate rules that deny storing of business information out of organization
- reduce the resistance of employees to new technologies
- complete migration of existing data into cloud ERP
- difficult to find investments funds for the development of our own ERP solution based on Cloud

### **Thinking about moving to Cloud ERP**

The most surprisingly result of this research is about our respondents' plans to move or not to cloud ERP in near future. Results shows that about 60% of surveyed Croatian companies are not particularly interested to move to Cloud ERP, while the other research in this area indicate global trends to be just opposite. Although this is a relatively high percentage, research shows that something is moving, because almost 40% are considering or has already made a decision towards adopting cloud ERP solutions, which of course is encouraging.

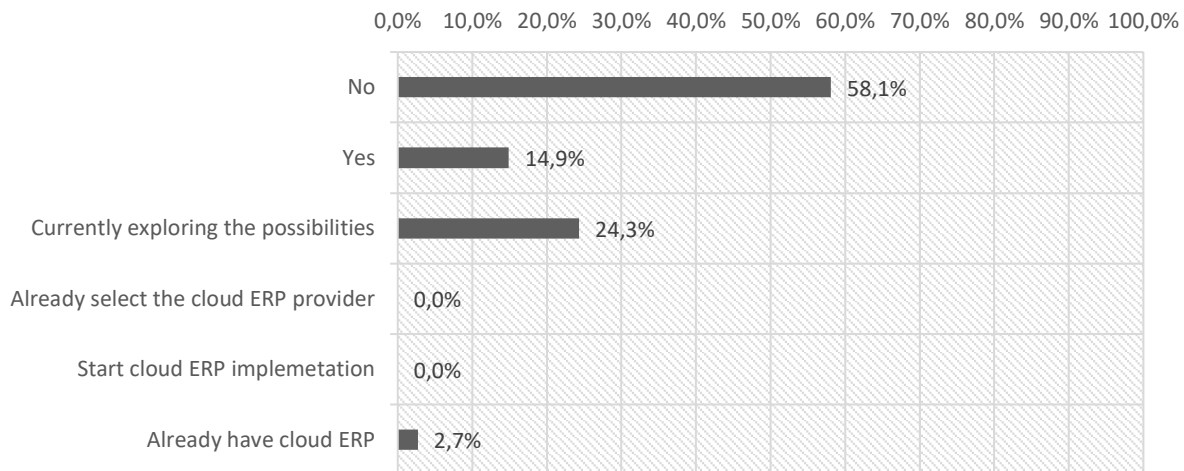


Figure 4 Moving to Cloud ERP

According to our respondents, the three most potential segments for Cloud ERP are: Customer relationship management (CRM), Sales and Finance. Other responses include: Human resource management (HRM), Production, Loyalty programs and different Reporting segments.

## **5. DISCUSSION AND CONCLUSION**

The results presented in our research show that Croatian companies in some parts do align well with global perceptions of Cloud ERP, while in other parts significantly differ. As can be seen in Figure 2, Croatian companies struggle to follow global trends in adopting ERP solutions. While they managed to overcome separate information system implementations with integrated ERP solutions, they seriously lag behind in adopting Cloud ERP solutions.

Our *first research question* aims at understanding the reasons for such a poor acceptance of Cloud ERP solutions in Croatia. The key drivers and barriers for accepting Cloud ERP regarded as most important for Croatian companies are listed in

Table 7 and Table 9 respectively.

From these results we can see that respondents acknowledge the benefits of Cloud ERP's as, in average, none of the provided key drivers has been marked as not important. Being able to access Cloud ERP systems from anywhere in the world, easier implementation and upgrade compared to traditional ERP, and Cloud ERP license models assuring low initial investments seem to struck as most important. However, it also seems that our respondents are not especially thrilled with benefits brought by Cloud ERP since none of the key drivers in average scored even close to very important.

Along with the key drivers, our respondents share the similar views about Cloud ERP barriers with users worldwide. The issues related to security, privacy and confidentiality in Croatia also present a major concern when thinking about transferring your business and data to Cloud ERP. Obviously, vendors should put more effort into assuring their infrastructure to be secure, and to prove their users and potential users that their data will be secure and safe. We also saw that large number of Croatian companies still have legacy, individual information systems so the



questions of integration and compatibility of these systems with Cloud ERP solutions naturally arise. Those companies which recently purchased traditional on premise ERP solution or just finalized the painstaking process of ERP implementation are unlikely to abandon their large investment and transfer to Cloud ERP system any time soon. Although the technology and communication infrastructure in Croatia is constantly improving, and Cloud ERP providers advertise their services as reliable, our respondent still express the concern of availability and reliability of Cloud ERPs.

Our *second research question* aims to see whether the Croatian companies are aware of changes and preconditions which should be made and fulfilled in order to be better prepared to move to Cloud ERP. As can be seen from Figure 3, over 80% of our respondents would first perform the analysis of costs and benefits which moving to Cloud ERP would bring. This indicates a mature view on a large undertaking such is the process of moving to Cloud ERP. By acknowledging the need to educate employees about cloud technologies and the need for proper management support shows that our respondents are aware of the problems of organizational resistance towards new solutions and that any strategic undertaking is about to fail without support of management.

While answering our *third research question* the respondents stated that Cloud ERP can add value the most to business segments such as CRM, Sales and Finance. These segments form the backbone of interaction with customers and business partners, and Cloud ERP can surely contribute to achieving real-time communication and data exchange between the company and its environment.

One of the possible interesting topics and future research is to extend the scope of the research by sending the questionnaire to companies from different countries (EU and non EU countries) and compare the results with the results obtained from Croatian companies.

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## THE IMPACT OF ENTERPRISE SOCIAL NETWORKS ON MANAGEMENT PROCESS IN THE CZECH REPUBLIC

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### **ABSTRACT**

*The process of globalization affects economic consequences in business and management. Due to globalization, there are various key changes, especially the rapid development of information technology. Effective management and leadership involve creative problem solving, motivating employees and making sure the organization accomplishes goals. Managers addresses the issue of the significance and financial and non-financial benefits of information technology to business management. For manager thinking about investing in IT for the first time, picking the right technical tool for organization is not easy. Different platforms can cater for the needs of different kinds of businesses. Enterprise Social Network is one of many information tools. The aim of this paper is to provide an answer to the research question of the impact of Enterprise Social Networks on the management process. Research methodology is based on questionnaire survey in the Czech Republic. The research includes both sequential and parallel managerial functions. The determined hypothesis focuses managers' decision-making process. Whether corporate social network has an impact on the decision-making process managers is explored. The research results presented influence of the Enterprise Social Networks on the managerial functions. Research results show that Enterprise Social Networks are an increasingly common part of the modern workplace, and in cases, replacing intranets. The emergence of consumerized IT has lead employees to expect user-friendly systems that offer functionality. This paper discusses whether Enterprise Social Networks are becoming increasingly popular worldwide in enterprise / business.*

**Keywords:** *Information Systems, Enterprise Social Networks, Functions of Management, Organizations*

### **1. INTRODUCTION**

Modern business is highly competitive and needs efficient and capable management for survival and growth. Data processing work should be easy and quick. Systems management should be enable a manager to work more efficiently because of easy availability of information in different aspects of business.

The entrepreneurial environment is currently changing at a very fast pace. These changes are primarily caused by global competition, quickly developing information and communication technologies, decreasing product development time, and rapidly changing consumer needs. Therefore, if managers would also like to ensure the success of their company in the future, they must know how to make good decisions. In order to make good decisions, they must have access to relevant information on company performance and use this as the basis for managing the company. (Neumaierová & Neumaier, 2002, p. 15). Management is needed as it occupies a unique position in the smooth functioning of a business unit. This suggests the need of efficient management of business enterprises. Successful business may not be possible without efficient management. The management process suggests functions to be performed by the managers.

#### **1.1. Management process**

Management processes are the methods that aid the structuring, investigation, analysis, decision-making and communication of business issues. Examples include the strategic planning process, talent planning, expense and capital budgeting, performance management

systems, product planning and management cost accounting. The purpose of a management process is to ensure a disciplined and consistent approach to analysis and decision making. Management process is defined as the process, composed of interrelated social and technical functions and activities, occurring in a formal organizational setting for the purpose of accomplishing predetermined objectives through the utilization of human and other resources. (Mohanta, 2015) According to D. E. McFarland, "Management process is the distinct process by which the managers create, direct, maintain and operate purposive organisation through systematic, co-coordinated and cooperative human efforts" (McFarland, 1970) According to Gemp R. Terry, "Management process is a distinct process consisting of planning, organising, actuating and controlling, performed to determine and accomplish objectives by the use of people and other resources" (Terry, 1994). The essential elements/components of management process are four: planning, organising, directing and controlling. we may add some more elements in the management process. such elements are: motivating, co-coordinating, staffing and communicating. The elements in the management process are actually the basic functions of management these functions constitute the management process in practice. Management process is in fact, management in practice. Luther Gullic suggested the elements of management process i.e. basic functions of management, in a 1937. According to author, management process may be indicated by the word "PODSCORB". The following is an explanation of acronym, 'P' states for planning. "O" for organising, "D" for directing, "S" for Staffing, "CO" for Coordinating, "R" for Reporting and "B" for Budgeting. Gullick coined the word "PODSCORB" to suggest seven functions of management. (Gulick, 1937; Akrani, 2010; Chalekian, 2016)



Figure 1: Management Process and Elements of Management Process (Akrani, 2010)

## 2.1. Enterprise Social Networks

Enterprise Social Networks are increasing in popularity across the world of business as many companies embrace the social revolution (Ellison, Gibbs, Weber, 2014). Most of the conversations and studies, to date, regarding Enterprise Social Networks focus on how companies can enhance business results such as reducing costs, easing communication and increasing product quality. An enterprise collaboration platform offers these benefits and also

facilitates the creative process, which ultimately improves business outcomes. Enterprise Social Networks share many of the same technical features as online social networks, such as an articulated list of connections, they are designed for work-related use among organizational members and stakeholders, and are often customized to meet the specific needs of an organization (Weber & Monge, 2011). Although organizational intranets usually include work-related information, such as office locations or project histories, profiles on Enterprise Social Networks can be richer depositories of personal information (DiMicco & Millen, 2008). Generally Enterprise Social Networks profiles might include fields that describe one's current project, technical skills, or management chain, and the Enterprise Social Networks itself may pull in or push out content to other organizational tools, such as an intranet or a proprietary messaging system (Ellison, 2015). Future work should consider these tools with more specificity, acknowledging that social media are not monolithic and encompass a range of technologies (Kane, Alavi, Labianca, & Borgatti, 2014), and that various applications (e.g., wikis, social tagging, and rater or recommender tools) may provide different tools for knowledge sharing (Ellison, 2015). Large multinational organizations are increasingly adopting Enterprise Social Networks applications such as Yammer, Jive, IBM Connection and other types of Enterprise Social Networks. Enterprise social media tools like these may benefit organizational processes because they provide access to new people and expertise (Steinfeld, DiMicco, Ellison, & Lampe, 2009) and increase awareness and contact among virtual employees (DiMicco & Millen, 2007). Authors Wu et al. analyzed the behavior on a company-internal social network site to determine which interaction patterns signal closeness between colleagues. Regression analysis suggested that employee behavior on social network sites reveals information about both professional and personal closeness. While some factors were predictive of general closeness, other factors signaled that employees felt personal closeness towards their colleagues, but not professional closeness (Wu et al., 2010). Others authors DiMicco et al. in their paper described a social network site designed to support employees within an enterprise in connecting and learning about each other through personal and professional sharing. They suggested that employees find the site particularly useful as a way to perform people sensemaking of individuals and to connect and maintain relationships with others on the site. (DiMicco, 2009) Generally Enterprise Social Networks profiles might include fields that describe one's current project, technical skills, or management chain, and the Enterprise Social Networks itself may pull in or push out content to other organizational tools, such as an intranet or a proprietary messaging system (Ellison, Gibbs, Weber, 2014).

## **2. RESEARCH METHODOLOGY**

The aim of this paper is to provide an answer to the research question of the impact of Enterprise Social Networks on the management process. The research includes both selected sequential and parallel managerial functions. The determined hypothesis focuses managers' decision-making process. The methodology of this paper is based on comparative qualitative research on the basis of a survey conducted in the Czech Republic across business sectors. The following criteria were established for selecting a sample of respondents:

- a corporation;
- all sectors according to CZ NACE categorization;
- all locations in the Czech Republic;
- actively engaged in business.

In order to increase the validity of the data and guarantee the general confirmation, the following were not specified: the number of employees, turnover, sector or location of the organization. Next, specific organizations were determined with the selected criteria listed above with the help of the MagnusWeb database information system. After exporting the file with the search results into an excel spreadsheet, the total number of firms amounted to 193,908

organizations. Multistage probability sampling was used (Kubanová, 2008). The basic sample is very extensive (193,908 organizations), which eliminates recording and studying all of its components. It was advisable to move on to the second step and begin selection of the so-called secondary selection units within these selected primary groups (sectors). On the basis of filtering out empty cells, organizations with unlisted email addresses and the number of messages undelivered to their recipients, the final sample for questioning included 47,772 organizations. On the basis of the calculation of the formula presented below (1), the minimum number of respondents is set at 272 (Kozel, Mynářová, Svobodová, 2011). The calculation of the minimum number of respondents is as follows:

$$n \geq (z^2 \times p \times q) / \Delta^2 \quad (1)$$

where:

n is the minimum number of respondents

z is the reliability coefficient 2 (95.4% reliability)

p and q are the number of respondents aware and unaware of the problematic in percentages

Δ is the set maximum permissible error (6 %)

$$n = (2^2 \times 0.43 \times 0.57) / 0.06^2$$

$$n = 272$$

The rate of return for the questionnaires reached an absolute representation of 842, which is sufficient with regards to the calculated minimum number of respondents.

### 3. RESULTS OF THE RESEARCH

The aim of primary research was to determine the number of organizations using the internal social network. The first research question concerned how many organizations are using the Enterprise Social Network. From the research results and Fig. 2, it can be seen that 114 respondents answered that an Enterprise Social Network is used in their organization, i.e. 14 %. And 75 organizations expressed interest in using them in the future, i.e. 9 %.

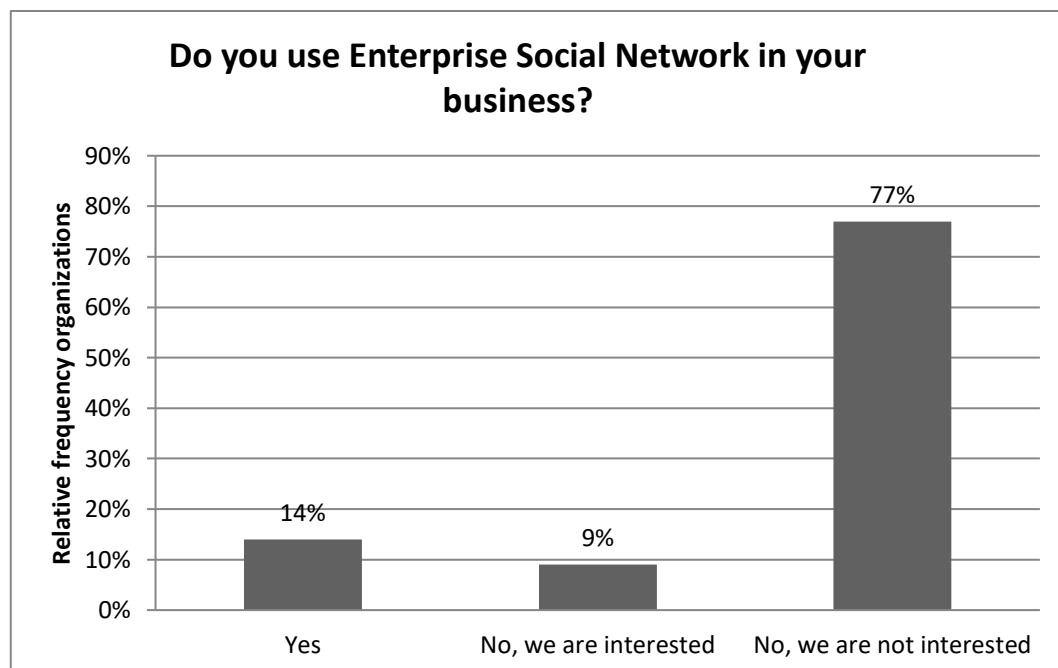


Figure 2: The number of organizations using the Enterprise Social Network (Own calculation)

The second research question is focused on determining the influence of Enterprise Social Network on the decision-making process. The hypothesis was determined as follows:

$H_0$ : Enterprise Social Network does not affect decision-making process.

$H_1$ : Enterprise Social Network affects decision-making process.

For statistical evaluation was used program Statistica. The reference constant was determined 3 (no change). The level of significance of the test was determined  $\alpha = 0.05$ . Results were calculated by T-test, based on the composition of the data matrix, the selected test, defined variables and constants reference. The following Tab. 1 comprehensively represents the results of the test performed. Fig. 3 graphically shows a polygon frequency.

Table 1: The Results of the T-Test in the Program STATISTICA (Own calculation)

| Variable | Test averages against the reference constant (value) |         |     |        |                    |       |     |      |
|----------|------------------------------------------------------|---------|-----|--------|--------------------|-------|-----|------|
|          | Average                                              | St.dev. | N   | St.er. | Constant reference | T     | SV  | p    |
| $x_1$    | 3.81                                                 | 0.82    | 114 | 0.08   | 3.00               | 10.11 | 104 | 0.00 |

Tab. 1 shows that p-value was less than the significance level  $\alpha$  and the average value of the variable  $x_1$  is greater than the reference constant. We admit that the Enterprise Social Network positively influences the decision-making process.

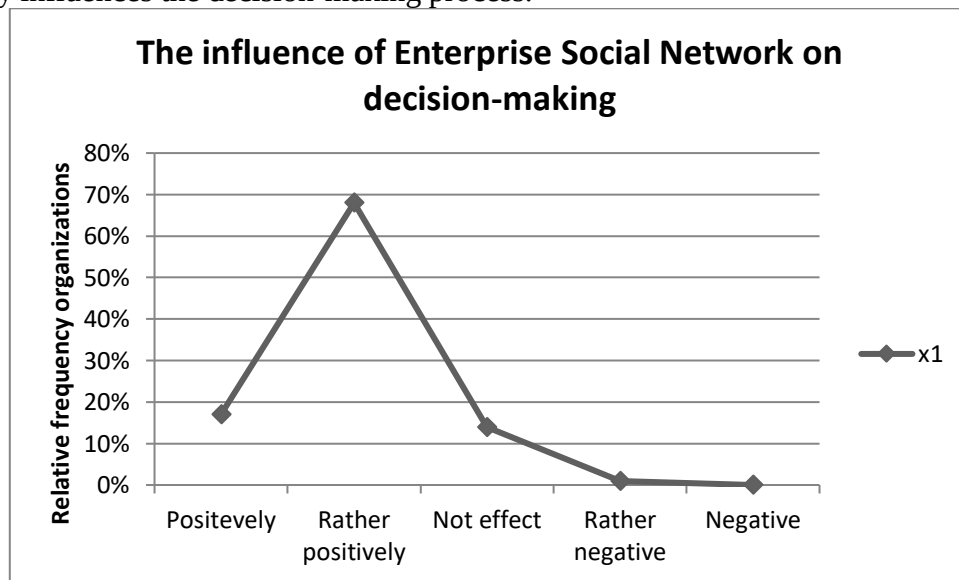


Figure 3: Polygon frequency: influence of Enterprise Social Networks on the decision-making process (Own calculation)

The third research question concerned functions of management. The research includes both sequential and parallel managerial functions, i.e. planning, organizing, staffing, leading, controlling, analyzing and desicion making. From the research results and Fig. 4, it can be seen that Enterprise Social Network influences all of selected managerial functions.

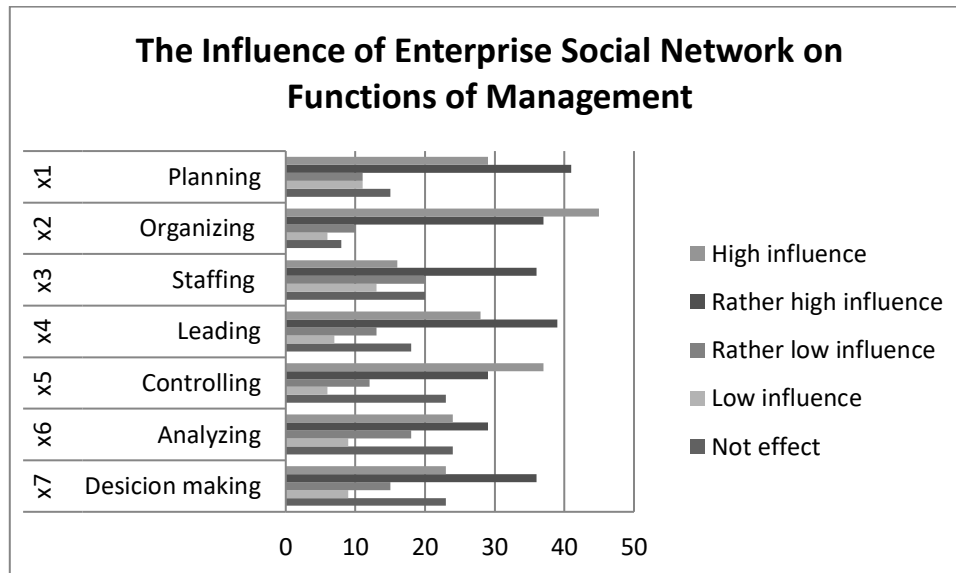


Figure 4: The influence of Enterprise Social Network on selected functions of management  
(Own calculation)

#### 4. CONSLUSION AND DISCUSSION

Management is explained with reference to its basic functions which include planning, organising, coordinating and controlling. Similarly, management is described as a process which involves various elements. Management process is a continuous one and is run by the managers functioning at different levels. Management is now recognised as a distinct process in which managers plan, organise, lead, motivate and control human efforts in order to achieve well defined goals. Survival of a business unit in the present competitive world is possible only through efficient and competent management. The economic progress of western countries is not merely due to abundant material resources but because they are efficiently managed and utilised. In other countries, resources are not utilised fully and properly due to lack of managerial skills. This suggests that management is a key factor in the working of business enterprises. There is no substitute to efficient management. An inefficiently managed business enterprise has no place in the present complex and competitive business world groups. (Akrani, 2010) The growth in multinational and transnational operations, fast changing technology, increasing complexity of decision making, dynamic social and economic environment, globalisation of business and elastic project organisations and task groups will significantly influence the future managerial world and managerial tasks. The future must be considered as an opportunity and not a problem. One of the possible modern IT tools is an internal social network. Enterprise Social Networking tools incorporate the characteristics of social media networking into business processes, providing stronger internal collaboration and understanding of internal and external customers. An opportunity for businesses to be on the cutting edge and fully implement social results ahead of the competition is relevant.

The aim of this paper was to provide an answer to the research question of the impact of Enterprise Social Networks on the management process. Research was divided into several sub-objectives. The purpose of primary research was to determine the number of organizations using the Enterprise Social Network. From the research results, of the 842 respondents, a total of 114 respondents answered that an Enterprise Social Network is used in their organization. And 75 organizations expressed interest in using Enterprise Social Network in the future, i.e. 9 %. This is a positive outcome for the future use of the internal network in companies. The second research question is focused on determining the influence of Enterprise Social Network on the



decision-making process. T-test results present a positive influence on the decision-making process, refers to the Tab. 1 and Fig. 3. The third research question focused on elements of management. The research includes both sequential and parallel managerial functions, i.e. planning, organizing, staffing, leading, controlling, analyzing and decision making. From the research results and Fig. 4, it can be seen that Enterprise Social Network influences all of selected managerial functions. Organizing and controlling have the greatest influence over the company after the implementation of Enterprise Social Network. In comparison Fig. 3 and Fig. 4, it is obvious consensus of impact of Enterprise Social Network on decision-making process.

The question is whether Enterprise Social Networks are becoming increasingly popular worldwide in enterprise / business. In the opinion author of a paper, Enterprise Social Networks offer many advantages and according to the research indicates the positive impact of the internal network to a management process. Several organizations have expressed interest in using the Enterprise Social Network into their enterprise. Which is a positive view on the future of these networks. In order to support these internal networks could help appropriate marketing support. In summary, modern management theory depends upon system approach and contingency approach. Management is influenced by internal and external environment. Appropriate techniques are determined by situation and environmental factors of an organization.

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## AN ANALYSIS OF LEVEL OF NET WORKING CAPITAL IN COMPANIES OPERATING IN PURCHASING GROUPS

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### ABSTRACT

*Management of net working capital is a very complex process since it concerns assets as well as the very important parts of liabilities, i.e. current liabilities. Working capital is a buffer that protects the company against the loss of liquidity. It should be positive for the safety of the operation of businesses. However, its too high the level means unnecessary costs that are incurred by the company. Therefore, the determination of the optimal level of net working capital has a large impact on the profitability of the company and its capabilities of current liabilities regulation. Bankruptcies of large enterprises, payment backlogs and increasing competition in the markets makes it difficult to define a strategy of working capital which will let managers determine the optimal level of safety in order to keep safety in the market. In addition, the management process of net working capital hinders the operation of enterprises in the purchasing groups. The specificity of the functioning of purchasing groups is based on joint purchasing. Therefore, common operation has a large impact on the management of various elements which shape the level of net working capital, i.e. inventories, receivables and short-term and long-term liabilities. The aim of this paper is to analyze the level of net working capital in 32 commercial companies operating in the Polish purchasing organizations. To perform the analysis the financial data derived from financial statements for 2013-2015 were analyzed. For the research the selected financial indices were applied and a preliminary financial analysis of the selected items was conducted. The analysis is expected to provide information if the units tested have an excess or deficiency of the optimal size of net working capital. Research also aims to answer what management strategies of working capital the commercial enterprises pursue, and in which areas of management of net working capital the managers of enterprises should introduce measures leading to optimize the level of working capital.*

**Keywords:** net working capital, purchasing groups, strategies

### 1. INTRODUCTION

Working capital management is a big problem for company managers. Its level depends on an impact the policy of current assets and current liabilities management has. Incorrect decisions taken in one of these two areas have a negative impact on liquidity, asset management efficiency or profitability. Working capital management aims at keeping an economic entity during its daily functioning in a good, healthy financial condition - "*financial health*" (Bhalla, 2005, p.77). To meet this goal managers need to decide what strategies of working capital management they will choose. They have a choice of safe or risky management. Generally, they put on moderate, conservative policy which does not bring high profits but also does not expose a company to the risk of bankruptcy.

Companies that work together, e.g. within the group purchasing organizations obtain a lot of opportunities in the area of working capital management. Joint action results in a modification of the popular strategy of working capital management.

This is caused by new opportunities or limitations resulting from belonging to a group purchasing organization that modify various classical strategies for all elements making up the working capital.

## 2. MANAGEMENT STRATEGIES OF WORKING CAPITAL

Net working capital is defined as current assets decreased by current liabilities (Bringham, Houston, 2005, p.122). It is the arithmetic difference between current assets and current liabilities (Sagner, 2014, p.112). The term "working capital" is a direct translation from the English language.

Management of working capital has a big impact on the current financial situation of companies. It should be noted that in an everyday operation of a company the majority of decision refers to (Kusak , 2006, p. 62):

- Enforcement of receivables,
- Regulation of current liabilities,
- Control of supply processes and warehouse management,
- Control of production,
- Control of sales process,
- Management of cash resources.

These decisions relate to the most important areas related to the management of working capital. Working capital and problems with its management appear in any of the companies regardless of their size (Shanahan, 2012, p.171). To limit the problems, one needs to select an appropriate management strategy. Managers can use the following inventory management strategies:

- Conservative strategy is a safe strategy. Its aim is to secure financial liquidity in a company. It consists in keeping the assets at a high level and short-term liabilities at a relatively low level. In the structure of current assets the advantage of inventories over receivables is noticeable. Companies implementing this way of management keep a high cash position. Conservative management of working capital is due to the conservative policy of inventory management, account receivables and safety management policy commitments that are timely adjusted. It is a safe but expensive strategy which adversely affects profitability.

- Aggressive strategy is a risky method of working capital management. It aims to keep current assets at a low level. Current liabilities are at a very high level. Very often this way of management means bankruptcy for a company in a long period of time. To rescue the company managers will try all the time to keep a faint edge of current assets over current liabilities. In this way, the company will have the capacity to pay current liabilities. This strategy minimizes the most liquid assets, or cash, also seeks to minimize inventories and receivables are maintained at a high level. This is due to aggressive management of receivables, inventories and liabilities. The high level of receivables is a result of the sales of goods, products to each customer even unreliable ones. It is a risky strategy that rarely bring benefits for a company.

- Moderate strategy aims to minimize the weaknesses of the previous strategies and maximize their advantages (Szczęsny, 2007, p.213). Company keeps inventories at a moderate level, in terms of cash it keeps liquid securities, also runs a mild policy towards consumers (Czekaj, Dresler 2005, p.133).

Moderate strategy should be divided into two distinct strategies: moderate-conservative and moderate-aggressive as the source of their creation are basic conservative and aggressive strategies. The introduction of appropriate methods to optimize the level of the individual elements affecting the level of working capital changes basic strategies into moderate ones. Therefore, the choice of the right strategy of inventory management is an important step towards building a competitive advantage.

## 3. GROUP PURCHASING ORGANIZATIONS

First Group Purchasing Organizations (GPOs) appeared in the US in 1950. Their maximum development was in the 80s and 90s (Weinstein, 2006, p.790). A GPO is a group of companies of the same or different branch which combine to make joint purchases (Zimon, 2015, pp.284-

290). Another broader definition defines the GPO as co-operating companies that collectively control and improve the property, information and cash flow in the manufacturer-central unit-company line. Another simple definition defines it as a group of cooperating companies managed by a specially created central unit. Its primary objective is the realization of tasks commissioned by the companies making up the group, which are to ensure better financial performance and security of companies creating a GPO (Zimon, 2014, pp.319-327). The most important task of the central unit is negotiating with suppliers. An outcome of these negotiations is a favorable price of purchased goods, materials and favorable terms of trade credit. The central unit can also negotiate an additional discount for early payment, which has a positive effect on costs and financial results of a company.

An organizational chart of a GPO is presented in fig. 1.

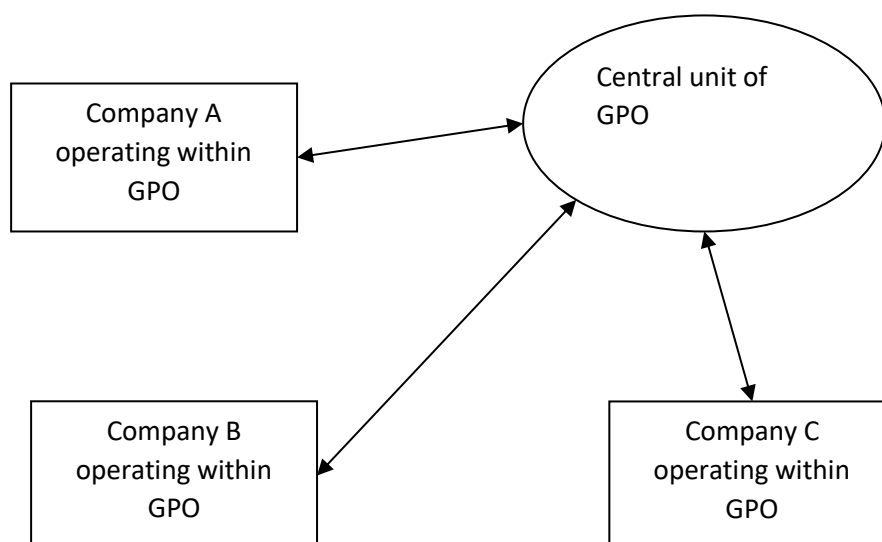


*Fig. 1 Organization chart of GPO*

Working together gives great possibilities of exchange of experience and cooperation, which improves company finances. In GPO, in addition to information exchange, there is also an exchange of goods and cash in the central unit-company line, and mutual relations among companies appear. They can affect the flow of information, money resources but the most often they relate to sales. Common functioning and sales, offering favorable trade credits for each other very often is a form of support for companies which have financial problems. Such actions allow to build a positive working capital and protect a company against the loss of liquidity. It is the cheapest source of improvement of the financial situation of a company and also another benefit for companies which operate within GPOs.

The purpose of GPOs is to protect the individual companies against strong competition and increase the bargaining power (Praksth, 2009, p ).GPOs will accept a definite attitude towards suppliers in order to force them to meet the necessary requirements (Leenders, Johnson, Flynn, Pearson, 2006). When analyzing the operation of GPOs one should apply a division due to the coordinator. The central unit can be an external company, not personally or financially connected with individual participants of a group or an internal unit. The central internal unit is formed by all members of the GPO. Each participant has their own participation in such a unit.

A lot of GPOs are organized by the Internet. Therefore, it is worth dividing the purchasing groups due to the integrating unit into traditional and Internet groups (Zimon, 2013, pp321-329).

Another important division in terms of efficiency analysis of GPOs is a division due to the selection of participants into the branch and multi-branch groups. This division is important because of the intensity of the most important feature the groups are set up for, i.e. the economies of scale. Because of participants GPOs can be also divided into national and international.

In the branch GPOs there are companies operating within only a single branch, which has a positive effect on the economies of scale. There is a greater bargaining power. Companies operating in this type of group order the same type of goods. This limits the range of suppliers to the minimum. Companies integration within the supply chain is essential to fight the competition, joint actions and not continuous rivalry to avoid self-destruction (Christopher, 2011, p.16). This type of organization needs to be taken into account by a producer. Operation within GPOs means a number of advantages. They can be divided into three groups:

- Low price of goods purchased,
- Attractive trade credit ,
- Other benefits.

In group purchasing organizations one can observe a strong influence of the central unit on most elements constituting the working capital (fig. 2).

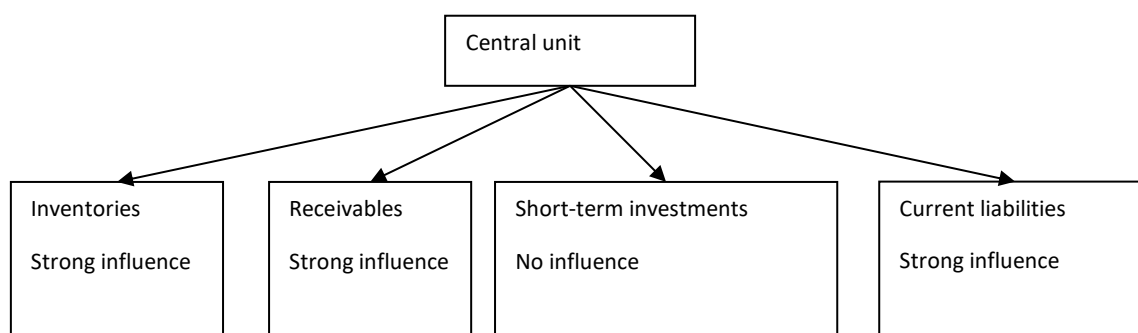


*Figure 2: The influence of central unit on elements creating working capital*

Joint purchases allow to get an attractive price and a long period for liabilities payment. A long-term payment gives an opportunity to acquire new customers by offering favorable trade credits to its customers, which increases the level of debt. The level of commitments depends on whether there are possibilities to pay obligations sooner or if companies use the credit period till the end. The inventories level is kept at the average level with some safety margin. This is often due to the procurement of goods above the actual need to obtain an additional discount. Manufacturers often offer discounts for realization of the bigger size of purchases. The impact of purchasing groups on the level of cash is little. Companies operating in the group can grant a loan to each other to improve their financial situation or, in case of common transactions, extend the payment deadline. These activities have a positive effect on the level of cash.

#### **4. WORKING CAPITAL IN GROUP PURCHASING ORGANIZATIONS**

The analysis of working capital management was carried out on a group of 32 companies operating in two branch group purchasing organizations. The companies surveyed are business units operating in the construction industry. The analysis was carried out on the basis of the financial statements for the years 2013-2015.

The first ratio used for the analysis was the cash conversion cycle known as net working capital cycle. It can be defined as the period corresponding to the time from the cash outflow associated with a payment for delivered materials to the impact of the cash for the products sold (Neale, Pike, 2006, p.375). It provides information about the number of days a company needs its own money to conduct operations. It informs about the need for net working capital. Therefore, it is a period in which a business operates, makes the operating expenses from the equity or long-term liabilities (Wędzki, 2006, p.332). It is a period of freezing one PLN in current assets. Companies are seeking to ensure that the time from the moment of an inflow of money connected with a purchase and the inflow of money from sales was as short as possible. This period is also known as the Cash Gap (Boer, 1999, pp. 27-32). Another name for the cash conversion cycle which appears in the literature is net trade cycle (Eljeljy, 2004, pp. 983-1023).

The next ratio which was used for the analysis informed about the size of net working capital in a company. The details are presented in table 1.

*Table 1. The level and the need for net working capital in the years 2015-2013*

| Company 1  | 2015<br>Working<br>capital in<br>turnover days | The need for<br>working capital<br>(in days) 2015 | 2014<br>Working<br>capital in<br>turnover days | The need for<br>working<br>capital (in<br>days) 2014 | 2013<br>Working<br>capital in<br>turnover days | The need for<br>working<br>capital (in<br>days) 2013 |
|------------|------------------------------------------------|---------------------------------------------------|------------------------------------------------|------------------------------------------------------|------------------------------------------------|------------------------------------------------------|
| Company 1  | 234                                            | 142                                               | 218                                            | 132                                                  |                                                |                                                      |
| Company 2  | 127                                            | 122                                               | 122                                            | 117                                                  | 106                                            | 96                                                   |
| Company 3  | 54                                             | 53                                                | 62                                             | 61                                                   | 52                                             | 51                                                   |
| Company 4  | 31                                             | 16                                                | 26                                             | 24                                                   | 23                                             | 22                                                   |
| Company 5  | 99                                             | 92                                                | 94                                             | 83                                                   | 82                                             | 69                                                   |
| Company 6  | 132                                            | 112                                               | 128                                            | 97                                                   |                                                |                                                      |
| Company 7  | 53                                             | 55                                                | 58                                             | 59                                                   | 58                                             | 59                                                   |
| Company 8  | 55                                             | 55                                                | 69                                             | 70                                                   | 51                                             | 51                                                   |
| Company 9  | 136                                            | 125                                               | 139                                            | 131                                                  | -4                                             | -39                                                  |
| Company 10 | 60                                             | 60                                                | 56                                             | 54                                                   | 51                                             | 48                                                   |
| Company 11 | 159                                            | 147                                               | 169                                            | 163                                                  | 155                                            | 142                                                  |
| Company 12 | 54                                             | 53                                                | 45                                             | 44                                                   | 47                                             | 46                                                   |
| Company 13 | 198                                            | 126                                               | 197                                            | 135                                                  | 164                                            | 118                                                  |
| Company 14 | 95                                             | 95                                                | 73                                             | 73                                                   | 68                                             | 66                                                   |
| Company 15 | 33                                             | 14                                                | 16                                             | 12                                                   | 19                                             | 3                                                    |
| Company 16 | 59                                             | 58                                                | 40                                             | 39                                                   | 32                                             | 30                                                   |
| Company 17 | 105                                            | 102                                               | 106                                            | 102                                                  | 96                                             | 93                                                   |
| Company 18 | 129                                            | 102                                               | 124                                            | 82                                                   | 111                                            | 85                                                   |
| Company 19 | 35                                             | 11                                                | 53                                             | 51                                                   | 46                                             | 43                                                   |
| Company 20 | 50                                             | 50                                                | 58                                             | 46                                                   | 58                                             | 47                                                   |
| Company 21 | 21                                             | 14                                                | 21                                             | 17                                                   | 25                                             | 22                                                   |
| Company 22 | 77                                             | 74                                                | 75                                             | 72                                                   | 62                                             | 60                                                   |
| Company 23 | 155                                            | 118                                               | 162                                            | 112                                                  |                                                |                                                      |
| Company 24 | 25                                             | 19                                                | 31                                             | 19                                                   | 31                                             | 21                                                   |
| Company 25 | 30                                             | 27                                                | 19                                             | 18                                                   | 20                                             | -2                                                   |
| Company 26 | 112                                            | 108                                               | 90                                             | 90                                                   | 108                                            | 106                                                  |
| Company 27 | 25                                             | 17                                                | 24                                             | 21                                                   | 23                                             | 18                                                   |
| Company 28 | 153                                            | 147                                               | 155                                            | 151                                                  | 130                                            | 128                                                  |
| Company 29 | 105                                            | 103                                               | 99                                             | 98                                                   | 99                                             | 98                                                   |
| Company 30 | 56                                             | 44                                                | 65                                             | 54                                                   | 67                                             | 58                                                   |
| Company 31 | 81                                             | 80                                                | 79                                             | 78                                                   | 57                                             | 55                                                   |
| Company 32 | 112                                            | 107                                               | 101                                            | 99                                                   | 91                                             | 88                                                   |

Source: own study

The analysis showed that all investigated companies in the period 2013-2015 had a positive working capital, which allowed them to finance current operations. Each company reported an

excess of working capital. This can be defined as a small reserve for the period from 2 to 10 days. In the case of 13 companies the conversion cycle of net working capital in each year was over 100 days. The freezing of money for such a long period is not a good solution. In 5 companies one can see big differences between the demand for working capital and its assets which exceed the demand by more than 20 days. Such strategies should be evaluated very negatively. Although they are safe but they generate the formation of unjustified costs and reduce the financial result of the company. In 5 companies the cash conversion cycle was 25 days. Theoretically it is very effective management but is subject to risk of losing financial liquidity. However, in each of these cases there is a surplus of working capital over the cash conversion cycle, which additionally protects the current liquidity.

When analyzing the structure of current assets one could notice an advantage in receivables over inventories. The study showed that in 23 companies analyzed a higher proportion of short-term receivables over inventories was recorded, which does not allow to assign a strategy implemented in the surveyed enterprises to the conservative strategy.

The analysis based on ratios of inventories turnover and a share of inventories in the structure of current assets excludes an aggressive, risky approach to inventory management. For 3 companies a high share of inventories in current assets ranging from 51% to 66% was recorded. In addition, in these 3 units the ratio of inventory turnover in days ranges from 71 to 91 days, which allows determining their strategies for inventory management as conservative. In other companies, the share ratio of inventories is in the range of 40%, and the turnover of 59 days.

When assessing the management of liabilities, it is difficult to determine what strategy companies use. It depends on the benefits they can achieve, and if there are additional discounts, companies use them and then the rotation of liabilities achieves low scores. If companies give long terms payment periods for their contractors, then they also extend to the end of the period for liabilities payment. There were no companies with a very long period of liabilities turnover, which precludes aggressive management of working capital.

#### 4. CONSLUSION

The conducted analysis of the working capital level showed that in the companies surveyed the average cash conversion cycle in each year was:

- Year 2015 -76 days,
- Year 2014 -75 days,
- Year 2013: 65 days.

These results should be defined as high; they point at the safe strategy of working capital management. These results, however, require to assess the efficiency of working capital management negatively. It is a long period influenced by a long inventory turnover and receivables. In the analyzed companies receivables outweighed inventories, which excludes the conservative strategy. The policy of working capital management in these companies should be defined as moderately-conservative. None of the analyzed companies applied aggressive strategies. The companies surveyed should try to reduce the length of the cash conversion cycle as keeping high inventory balances and receivables is expensive for a company. However, if an outcome of such a strategy is to acquire new customers, keep the existing ones and substantial drop in prices of purchased goods, then the use of moderate-conservative strategy is justified.

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## IDENTIFICATION OF STAGE PHASE GROWTH IN THE CHECKLIST METHOD USING DIFFERENT STATISTICAL PARAMETERS

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### ABSTRACT

*Check-list method is one of the method which can be applied to analysis of phase stage in analysis of growth. The application of this method means obtaining answers to a list of statements describing a status of development of a company. The method corresponds with the basis four-phase model of development of an organization including the following phases: establishment, growth, maturity and decline was accepted for analysis of a company. For each of the developmental phases a separate control list was prepared, each one includes 15 synthetic criteria and 42 analytical criteria. A total number of analytical criteria amounts to 168 and they are the identifiers of developmental phases. Statistical analysis of obtained research results of quantitative character is to support a process of identification of a phase of a company development. Various estimators may be taken into account for statistical analyses. The article discusses the interpretation of research results obtained for a company, bearing in mind various estimators of central tendency and variability.*

**Keywords:** *Check-list, Management, Phase growth, Statistical analysis*

### 1. INTRODUCTION

Models employed to describe development of an organization simplify the actual process of its development. They suggest the gradual passage from one to another phase of development. As an example, these are models described by I.Adizes (Adizes, 1979), crisis models by L.E.Greiner (Greiner, 1972), K.Bleicher (Bleicher, 1979; Pumpin, Prange, 1991). Only R.E.Quinn and K.Cameron (Quinn, Cameron, 1983) have described a development of an organization using a „circular” model, which reflects best the actual process of development of an organization in practice. Development of an organization is a process of introducing changes, however these changes do not occur parallelly and simultaneously in all its functional areas. Models of development of an organization described by researchers differ with a range of elements and behaviors subject to analysis and a number of phases. Despite the differentiation of models a basic four-phase model of development of an organization may be accepted, including the following phases (see Fig.1 for graphical visualization) (Kozien, 2002):

- Phase of establishment,
- Phase of growth,
- Phase of maturity,
- Phase of decline.

Particular phases characterize with specific characteristic features (identifiers) distinguishing an organization in a phase of establishment from an organization from a phase of maturity. This means that having certain characteristics in mind an organization is in one phase, and from a point of view of other characteristics - it is in other phases. Passages between subsequent phases may occur through an evolution or as a result of a crisis (Bleicher, 1979; Grainer, 1972). Organizations may, in selected functional areas, reach subsequent phases remaining, however, in some of them at the current level of development, and even indicating regress of its development.

Such a varied development process of an organization arises from the diversity of the organizations themselves as well of sectors in which they function and conditions provided by the surrounding environment, which is of a turbulent character.

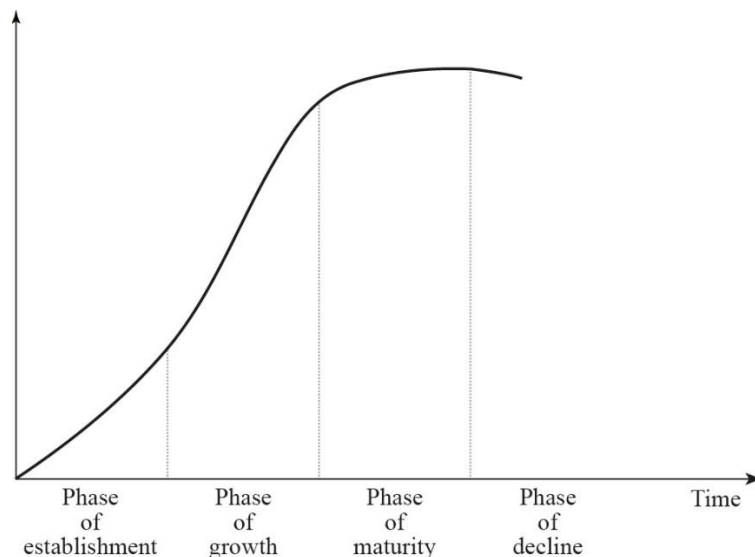


*Fig. 1. Graphical visualization of phases*

Models of development described in literature supply information on the characteristics of the development of an organization in its particular phases, which are partially used to obtain methods specifying a level of development of an organization. Currently new expanding methods of diagnosing development of an organization are being developed. These methods are important due to the specification of developmental potential of an organization. Based on this specification it may be possible to determine the directions of development of an organization. In order to be able to do so, one must answer the following question – what is the current level of development of an organization in its various areas? One of the methods is the Lepard sheet, which makes it possible to diagnose developmental phases and crises. This method has been developed according to the growth model described by L.E.Greiner (Greiner, 1972). However, C.Pumpin and J.Prange (Pumpin, Prange, 1991), proposed a more universal method of checklists for diagnosis of development of an organization. This method corresponds with the basis four-phase model of development of an organization. The method consists of four checklists containing identifiers characteristic for particular phases of development of an organization. Analysis of results is solely of qualitative character. Identification of phases of development occurs following completion of a test, which comprises of properly formed questions within the so-called checklists, formed separately for each developmental phase. C.Pupin and J.Prange (Pumpin, Prange, 1991) proposed 18 questions for each of the phases, each identifier of a phase was developed in a 5-degree scale pursuant to the proposal of the Likert scale (Likert, 1932; Lorkowski, Kreinovich, 2014). Qualitative analyses of development may be supplemented with presentation of graphs.

The checklist attempt is not popular method applied in management. Recent the European Commission formulated support for voluntary initiatives promoting diversity management at the workplace across the EU (European Commission, 2012). W.Martz (Martz, 2014) proposed 12 general criteria against which to access organizational performance. The criteria are grouped into four dimensions connected with organizational effectiveness (purposeful, adaptable,

sustainable, harm minimization). The analysis done by W.Martz (Martz, 2014) has rather quantitative character. As result it is obtained the organizational performance profile.

Since several years the Author apply mathematical models to describe the organizational development - e.g. the chaotic one (Kozien E., Kozien M.S., 2005), the entropy measure (Kozien E., Kozien M.S., 2016).

E.Kozien (Kozien, 1999) expanded the checklist method of C.Pumpin and J.Prange (Pumpin, Prange, 1991) by proposing the new 15 synthetic criteria e.g. strategy, purpose, capital, people and the original 42 analytical criteria, which describe the characteristics in each of the phases of development of an organization. The developed expanded original method of checklists makes it possible to conduct qualitative and quantitative analysis of the process of development of an organization. The notions of mathematical statistics was proposed for quantitative interpretation of obtained results leading to the identification of phases of development, bearing in mind various estimators of central tendency and variability.

This article analyzes the obtained results using quantitative interpretation on the basis of a company functioning for more than twenty years in the reality of the Polish market economy.

## 2. FORMULATION OF THE METHOD

A check-list method constitutes a tool for diagnosing the development phases of a company. Application of a method means receiving answers to a set of statements describing a status of a development of a company. A four-phase model was approved for analysis of a company, including the following phases: establishment, growth, maturity and decline. For each of the phases a checklist was developed, the method was described in detail in (Kozien, 1999). Each list pertains to another phase of development of a company and includes 15 synthetic criteria (the same for all phases) described by 42 analytical criteria (different for each phase). A total number of analytical criteria amounts to 168 and they are identifiers of phases of development.

The synthetic criteria are:

- objective,
- strategy,
- capital and cash flow,
- human resources: managers, employees,
- style of management,
- organizational structure (decision-making process),
- planning,
- supply,
- product/service (technological process),
- turnover,
- innovations,
- marketing,
- advertising,
- age of the company,
- environment.

Analytical criteria are not constant but they change in each phase, as it was mentioned above, taking into account characteristics distinguishing an organization at particular stages of its development. A set of phases identifiers is grouped in a form of four questionnaires filled in by managers and employees of various levels of management in a company. Application of the method in practice runs in three stages. First stage of test is limited to specification, on the

basis of the collected information of a degree in which particular statements pertain to an examined organization.

The Likert scale (Likert, 1932) was applied to assess the degree of development, accepting the following degrees of the scale:

- 2 – concerns entirely,
- 1 – concerns partially,
- 0 – difficult to define,
- -1 – not applicable,
- -2 – does not apply in any way.

Second stage of test is a quantitative analysis of obtained replies to qualitative criteria for particular phases.

Third stage of test focuses on the assessment and analysis of obtained results. Value of the obtained measure of central tendency is connected with the assumed interpretation of value on the Likert scale for a phase being analyzed. This is obvious that the obtained values are not complete, therefore it is necessary to analyze the obtained results. In assessing the credibility of obtained answers it is helpful to analyze values of accepted measure of dispersion for particular phases.

For quantitative assessment of central tendencies of obtained results for each of check-lists connected with identification of each of the phases the following model of a probability character was approved. It was assumed that the research method of collection of data allows to prepare a sufficient number of questionnaires so that one may speak on a description pursuant to the theory of probability and mathematical statistics. Further it was approved that the values accepted as degrees of the scale are discreet random variables  $X_k$ , which assume values  $\{-2, -1, 0, 1, 2\}$  with the appropriate probability, where  $k$  means index of the examine phase ( $k=1$  for the phase of entrepreneurship,  $k=2$  for the phase of growth,  $k=3$  for the stage of maturity,  $k=4$  for the stage of decline). With a sufficiently large number of questionnaires the values of required probabilities, for each of identified phases of development, are defined from the quantitative definition of probability perceived as a quotient of a number of events conducive to achievement of a defined value (a number of all replies yielding a defined value of a random variable for a given phase) to a number of all events (numbers of achieved replies for a given phase). Such an interpretation allows for possible removal from the set of single criteria which are not clear for a hypothetical company of a unique character, since the sets of criteria are formed generally, bearing in mind the functioning of a wide specter of companies (of various values, from various branches, from various countries – economic systems). The sufficiently large number of questionnaires may be obtained in two ways. In the first approach, if it is possible, the questionnaire test is conducted on a suitably large population of persons, but such persons who have sufficient information on the functioning of a company to give credible answers. Another approach is the questionnaires test conducted by many persons on a limited, but credible number of persons from the company. Interviewers themselves ascribe answers on the basis of conversations held with employees of a tested company. It is worth noting that the analysis presented by the method, from the calculation aspect, may be performed even on the basis of a conducted one questionnaire but then one cannot refer to a statistical study. Identification of phases is possible, though, but it is made on a basis of replies of one person, what can be interpreted as an opinion of this person on a degree of development of a company. On the basis of completed questionnaires and their introductory analysis the probability function for the discrete random variable  $X_k$  in a form (1), where,  $p_{ki}$  ( $i=1,2,3,4,5$ ) are the referred probabilities of obtaining applicable values of random variable  $X_k$ .

$$X_k = \{(-2, p_{k1}), (-1, p_{k2}), (0, p_{k3}), (1, p_{k4}), (2, p_{k5})\} \quad (1)$$

Based on the accepted probabilistic model it is possible to define parameters describing the central tendency and dispersion of random variables connected with the description and identification of k-th phase of development of a company.

For the quantitative assessment of central tendency of achieved results for each of the checklists connected with identification of each of phases the defined below quantitative measures quoted below were accepted, where  $N$  means the sample size.

For the assessment of central tendency:

- Mean value (arithmetic value)

$$\bar{x}_k = \frac{1}{42} \sum_{i=1}^{42} x_{ki} \quad (2)$$

- Median (where:  $x_{k;0.5}$  – quantile of 0.5 of random variable  $X_k$ )

$$Me_k = x_{k;0.5} = \frac{1}{2} (x_{k;21} + x_{k;22}) \quad (3)$$

for ordered in growth values of series  $x_{k;i}$ .

- Mode

$$Mo_k = x_{k;L} : p_{kL} = \max(p_{k1}, p_{k2}, p_{k3}, p_{k4}, p_{k5}) \quad (4)$$

For the assessment of variability:

- Standard deviation

$$\sigma_k = \sqrt{\frac{1}{42} \sum_{i=1}^{42} (x_{ki} - \bar{x}_k)^2} \quad (5)$$

- Average deviation from the mean value

$$d_k = \frac{1}{42} \sum_{i=1}^{42} |x_{k;i} - \bar{x}_k| \quad (6)$$

- Average deviation from median

$$r_k = \frac{1}{42} \sum_{i=1}^{42} |x_{k;i} - Me_k| \quad (7)$$

- Difference between third quartile (where  $x_{k;0.75}$  – quantile of 0.75) and first quartile (where  $x_{k;0.25}$  – quantile of 0.25).

$$q_k = Q_3 - Q_1 = x_{0.75} - x_{0.25} \quad (8)$$

### 3. AN EXEMPLARY ANALYSIS

The objective of the test was the definition in which phases of development is one of the Polish company. The documentation of the company was analyzed and its employees interviewed. Subsequently, on the basis of gathered information, using the check-list method, the diagnosis of the company was made.

At the beginning diagnosis of the developmental phases as of the moment of testing was defined with the qualitative method by C.Pupin and J.Prange (Pumpin, Prange, 1991). The obtained result indicated the phase of growth and maturity and it seems correct due to the character of the company and the stable period of development the company is currently in.

Then the quantitative method of identification of phases proposed by E.Kozien (Kozien, 1999) was applied to, having in mind comparison of results obtained by application of different statistical parameters of central tendency and comparison with results of mentioned above qualitative analysis.

The numbers of obtained answers for all 168 identifiers grouped for four phases are given in Table 1. Hence for each phase 42 identifiers are considered. As it was discussed above, the answers build the random variable  $X_k$ , where  $k=1,2,3,4$  are indexes of the considered phase.

Probability function for discrete random variables  $X_k$  was gathered in Table 2.

Table 1: Numbers of events for considered values of random variables  $X_k$

| Random variable<br>$X_k$ | Phase                  |                 |                   |                  |
|--------------------------|------------------------|-----------------|-------------------|------------------|
|                          | Establishment<br>$k=1$ | Growth<br>$k=2$ | Maturity<br>$k=3$ | Decline<br>$k=4$ |
| -2                       | 23                     | 3               | 7                 | 23               |
| -1                       | 6                      | 0               | 2                 | 11               |
| 0                        | 8                      | 1               | 3                 | 4                |
| 1                        | 3                      | 11              | 11                | 2                |
| 2                        | 2                      | 27              | 21                | 2                |

Table 2: Probability function for random variables  $X_k$

| Probability function | Phase                  |                 |                   |                  |
|----------------------|------------------------|-----------------|-------------------|------------------|
|                      | Establishment<br>$k=1$ | Growth<br>$k=2$ | Maturity<br>$k=3$ | Decline<br>$k=4$ |
| $p_{k1}$             | 0.548                  | 0.072           | 0.118             | 0.547            |
| $p_{k2}$             | 0.142                  | 0               | 0.048             | 0.261            |
| $p_{k3}$             | 0.190                  | 0.024           | 0.072             | 0.096            |
| $p_{k4}$             | 0.072                  | 0.262           | 0.262             | 0.048            |
| $p_{k5}$             | 0.048                  | 0.642           | 0.5               | 0.048            |

Achieved values of estimators for considered measures of central tendencies and variability measures for random variables describing particular phases of development were placed in Table 3.

Estimators of central tendencies and variability which are the mean value and standard deviation, respectively, most frequently used in mathematical analyses are mainly dedicated to random variables with continuous distribution. Moreover, it is worth remembering that the mean value is the best estimator of central tendency for random variable with normal distribution. In the method analyzed in the article the random variable is of discrete character. Statistical measurements dedicated to random variables yield also better results bearing in mind the issue in question. The best measurement of central tendency is the median, and the measure of variability is the average deviation from the median. Suggested measure of variability more clearly specifies uncertainty connected with the replies obtained in the checklists. Estimator of central tendencies, which is the mode, is quoted here for informative purposes only and cannot serve for quantitative interpretation of phases of development of a company with the checklist method.

Table 3: Values of selected measures of central tendency and dispersion measures of random variables  $X_k$

| Estimator                           | Phase                  |                 |                   |                  |
|-------------------------------------|------------------------|-----------------|-------------------|------------------|
|                                     | Establishment<br>$k=1$ | Growth<br>$k=2$ | Maturity<br>$k=3$ | Decline<br>$k=4$ |
| <b>Measures of Central Tendency</b> |                        |                 |                   |                  |
| $\bar{x}_k$                         | -1.1                   | 1.4             | 0.98              | -1.2             |
| $Me_k$                              | -2                     | 2               | 0.5               | -2               |
| $Mo_k$                              | -2                     | 2               | 2                 | -2               |
| <b>Variability Measures</b>         |                        |                 |                   |                  |
| $\sigma_k$                          | 1.2                    | 1.08            | 1.37              | 1.12             |
| $d_k$                               | 1                      | 0.77            | 1.04              | 0.86             |
| $r_k$                               | 0.9                    | 0.55            | 1.29              | 0.79             |
| $q_k$                               | 2                      | 1               | 1                 | 1                |

Results of the analyses leads the following remarks:

- All measures of central tendency identify that the company is in the growth phase (as the result of application of the quantitative method).
- The second phase which is identified with lower intensity in the maturity one (as for application of the quantitative method).
- The establishment and decline phases are excluded (as for application of the quantitative method).
- The qualitative method better identify the separate phase.
- Median seems to be better parameter for identification then mean value. The mode parameter, however gives appropriate results, gives much quantitative character.
- It is important for the proposed method possibility of analysis the values of variability measurements. They give information about differences in obtained answers for checklists.
- Comparison of results of obtained values of measures of central tendency and combined with them measures of variability (mean value – standard deviation, average standard deviation from the mean value), (median - average deviation from median), (mode - difference between third quartile and first quartile) show that the best parameters for the considered case (company) is the mode for central tendency and average deviation from median for the variability.

#### 4. CONSLUSION

The checklist method is a helpful tool used in order to diagnose the development of an organization and to outline the possible directions of its development. The method has an universal character and the analysis of results using the measurements of statistical mathematics may be supplemented by qualitative analysis taking into consideration the specifics of functioning of a given organization and also may be supplemented by graphical visualization. Supplementation of analysis of quantitative method with qualitative analysis is sometimes significant in practical application, since it is connected with specifics of an examined company.

For the method to serve as a credible support of quantitative character it is important to draw the attention to the accurate performance of statistical data. A research sample should be



adequately numerous and representatively selected. The test results presented in the article based on a practical example of a company well-diagnosed with the application of various methods indicate that the best statistical measures for analysis of results using the checklist method are: the median for description of the central tendency, and for the description of variability – the average deviation from the median. As a support, due to the size of the discreet random variable (42 elements) the mean value and standard deviation may be considered. The proposed by the Author the original method of qualitative analysis (original checklist, possibility of application of different parameters of central tendency and variability) is a powerful method of identification of phase of growth for companies. The discussed practical case show the realistic results of qualitative analysis. The checklist method in practice confirms that the examined organizations display the characteristics of more than one phase of development.

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## RELATIVE EFFECTS OF TRUST AND SERVICE QUALITY ASSESSMENTS ON PERCEPTIONS OF RELATIONSHIP QUALITY IN INTERFIRM RELATIONS IN THE CONTEXT OF CONVENTIONAL DISTRIBUTION CHANNELS

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### ABSTRACT

*This paper attempts to shed light on the role of trust and service quality on relationship quality. Building long-term and high quality inter-firm relationships is imperative for efficient and effective management of distribution channels. The study focuses on the relative effects of two critical factors on assessments of relationship quality in conventional distribution channels, namely, perceived service quality of the exchange partner and degree of -affective and cognitive- trust placed in the exchange partner. Data were collected from a random sample of 458 firms operating in two big cities of Turkey through questionnaires. Findings of regressions indicate that cognitive trust, affective trust and service quality have a positive and strong impact on relationship quality, independently from each other.*

**Keywords:** Interfirm Relations, Trust, Service Quality, Relationship Quality

### 1. INTRODUCTION

Gaining a competitive advantage is a key factor for companies in their business. This make companies find which ways they have to use to gain these advantages. Especially in business-to-business markets, building long-term and quality relationships is very important step for efficient and effective business relations. Building trust and having quality service could bring success to companies. It has a power which effects the relationship quality among companies that leads to positive behavioral responses and long-term approach to the parts. In this frame, having to the inimitable values, solvig the disagreements (Sorce, 2002), handling conflicts (Ndubisi, 2007: 833) and living the comfort of minimum opportunism (Dwer et al., 1987) are the outcomes of perceived relationship quality.

### 2. MODEL DEVELOPMENT

#### 2.1. Conceptual model

As this conceptual model aims to find out about how firms build quality relations, we emphasize on the factors of trust and service quality which can affect the relation quality. The fact that existing customer retention is much higher than new customers' lead firms to develop strategies on creating and maintaining relations among parties. Taking into consideration that relationship quality is the best evaluation of relationship power (Palmatier, et al, 2006: 136) and because this evaluation determines the future of the relations; it is crucial to know which elements lead to quality relations. With that information; we assume that there is a relation between antecedents and relationship quality. The model in Figure 1 proposes that trust and service quality may influence relationship quality.

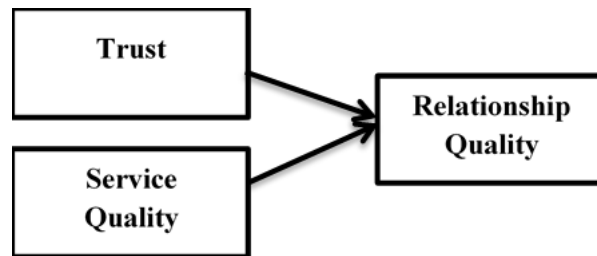


*Figure 1: Conceptual Model*

Taking into consideration that service quality is a measure of how well the level of service offered meets customer expectations, we make inference that the perception of relationship quality rise from like that assesments of service quality. The key research question in that study is whether trust placed to the exchange partner has any effect on perceptions of relationship quality, independently from the impact of service quality assesments. That is, is it possible that relationship quality might be deemed at superior levels even for a moderately or poorly performing channel partner -or vice versa- due to the high (low) level of trust placed on the partner? If yes, to what extend? And why should trust play such a role in interfirm relationships? Should that be considered some form of an evaluative bias?

The importance of trust arises by the fact that it is regarded as an important contributor to the strength of different relationships (Håkansson and Snehota, 1995; Morgan and Hunt, 1994). High levels of mutual trust facilitate the effective exchange and enhance relationship satisfaction and performance (Bianchi and Saleh, 2010; Payan et al., 2010).

How the role of relationship quality differs across dimensions of trust is another exploratory question. In the light of Mc Allister (1995: 26)'s study, which argue the basis distinction of trust is cognitive and affective, we made the same discrimination and investigate the effects of both. The other question we are concerned about is which kind of trust has more effect on the perceptions of relationship quality independently from the assesments of service quality.

## **2.2. Hypotheses**

### **a) Trust and Relationship Quality**

Relations, it doesn't matter how they begin, are dependent on the emergence of certain elements and their continuity. One of the main constituents of these sustainability is building ongoing (lasting) trust. Rapidly changing business environment force the firms to find more innovative and flexible tools to get involved in the competitive race. The fact that providing more flexible and collaborative business relationships is one of the ways to achieve this aim is verified by numerous researches (Davis ve Spekman, 2004; Dyer and Singh, 1998; Wilkinson, 2008). Adhering to prior research (Morgan and Hunt, 1994: 25; Kumar, 1996: 97; Narayandas ve Rangan, 2004: 68; Kingshott, 2006: 727), trust is defined as one of the main dimensions of commercial relations and accepted that it has played an important role in the development and maintenance of effective, long-term collaborative relationships.

Depending on the research made by Suh and Houston (2010: 746), it can be said that establishing closer relationships to improve the efficiency and efficiency of transactions especially in commercial relations is accepted as a critical factor. Take into consideration the research of Moorman et al. (1993: 83), the assertion that once the parties had become confident thanks to trust, the relationship would take longer by coming from the uncertainties and reducing the perceived risk will not be wrong.

Recently, trust has been conceptualised as two dimensions according to whether the level of trust is either rational or emotional (Zur, et al., 2012: 75). McAllister (1995) mentioned that Cognitive-based trust arises from available knowledge and good reasons (Luhmann, 1979) whereas Affective-based trust consists of the emotional bonds between individuals (Lewis and Weigert, 1985). According to Lu et al. (2010, p. 350), Cognition-based trust occurs due to

perceptions of competence, reliability, and dependability, when Affect-based trust occurs as a product of social exchange. That is, the positive emotions generated via perceptions of care and concern motivate one to continue reciprocating socioemotional benefits (Zur, et al., 2012: 74). Cognitive trust is the accumulation of knowledge that allows one to make estimates at a certain level of confidence about the likelihood that one's true partner will fulfill its obligations (Johnson and Grayson, 2005: 501). Contrary to that, many other researchers, this existing concept of trust has a cognitive/rationalist perspective and ignores the more meaningful emotional direction of human interaction (Anderson and Narus, 1990: 43). Business life has shown that the development of mutual cohesion and trust usually takes place without any account in mind (Wicks, et al., 1999, Laaksonen vd., 2008: 912). Because each affects business relationships in different ways, researchers have confirmed that cognitive-based trust and emotional-based trust must be handled separately (Mc Allister, 1995: 26; Johnson ve Grayson, 2005: 502).

Thus, under the light of this information, we propose that building each kind of trust is critical factor for building quality relations:

H1: Cognitive trust will generate higher relationship quality.

H2: Affective trust will generate higher relationship quality.

### **b) Service Quality and Relationship Quality**

Providing a quality service is one of the most important criteria to satisfy customers and a factor that companies consider when deciding whether or not they will continue their relationship. As the quality level of the service provided increases, it can be said that business performance, customer satisfaction, loyalty and consequently profitability of the enterprise will increase. A relationship in which such benefits are offered to customers can be described as high quality by the parties. Consequently, we posit that firms need to offer quality services provide relationship quality:

H3: Service quality will generate higher relationship quality.

## **3. METHOD**

### **a) Sample and data collection**

The Turkish food and beverage industry which has displayed a significant success figure especially in the last 10 years and which has approximately a share of 300 billion liras in Gross Domestic Product, reached forty-thousand businesses with over four hundred thousand employess (World Newspaper, 26.06.2015) is one of the most dynamic and productive sectors of the country. Taking this point into consideration, the sampling enclosed two biggest trading cities in Turkey which are Ankara and Istanbul. Executives of randomly chosen B2B firms were contacted and asked if they agree to participate in the study. A total of 450 questionnaires, 150 of which were in Ankara and the rest were in Istanbul were implemented. One respondent from each firm answered structured questionnaires through face-to-face interviews.

### **b) Measures**

The questionnaire was constructed using the measures that are explained in the next paragraph. Each measure has multiple-items with 5-point summated rating scales with anchors of 1 being strongly disagree and 5 being strongly agree, except for firm and respondent demographics. For each construct, we ran exploratory factor analyses with varimax rotation and averaged the mean scores of each dimension separately.

To measure affective trust, McAllister's (1995) 5-item scale was used. Cognitive trust was measured via the 7-item scale developed by McAllister's (1995). INDSERV which is Gounaris' (2005) 22-item scale was utilized to measure service quality.

After eliminating some items, 7-item were adopted to the study. Relationship quality was measured via the 7-item scale adopted from Kumar et al. (1995).

#### 4. RESULTS

The descriptive statistics of in terms of age, gender, marital status, educational status, income and duration of work participants are exhibited in Table 1 to provide a general information about respondents. Examining the sample in terms of age showed the highest participation was in the age group of 37-51 with 56.6 percentage. Having a look to range of gender showed the big difference among participants which can interpreted that men play a more active role in that area. % 84.4 of the sample is married and % 50.4 of is graduated from high school. Most of the participants are with high income and nearly half of them have been working for less than 20 years.

| Variables      |                              | Frequency (n)   | Percentage (%) |
|----------------|------------------------------|-----------------|----------------|
| Age            | 22-36                        | 124             | 27.9           |
|                | 37-51                        | 251             | 56.6           |
|                | 52 and more                  | 69              | 15.5           |
|                | <b>Total</b>                 | <b>444*</b>     | <b>100.0</b>   |
|                | *14 answers were missed.     |                 |                |
| Gender         | Female                       | 37              | 8.1            |
|                | Male                         | 419             | 91.9           |
|                | <b>Total</b>                 | <b>456**</b>    | <b>100.0</b>   |
|                | **2 answers were missed.     |                 |                |
| Marital Status | Single                       | 71              | 15.6           |
|                | Married                      | 385             | 84.4           |
|                | <b>Total</b>                 | <b>456***</b>   | <b>100.0</b>   |
|                | *** 2 answers were missed.   |                 |                |
| Education      | Primary education            | 111             | 24.7           |
|                | High school                  | 227             | 50.4           |
|                | University                   | 111             | 24.7           |
|                | Master's degree              | 1               | 0.2            |
|                | <b>Total</b>                 | <b>450****</b>  | <b>100.0</b>   |
|                | ****8 answers were missed.   |                 |                |
| Income         | 1.001 - 2.000 TL             | 28              | 6.2            |
|                | 2.001 - 3.000 TL             | 116             | 25.8           |
|                | 3.001 - 4.000 TL             | 160             | 35.6           |
|                | 4.001 TL and more            | 146             | 32.4           |
|                | <b>Total</b>                 | <b>450*****</b> | <b>100.0</b>   |
|                | *****8 answers were missed.  |                 |                |
| Working Time   | 1 – less than 10 years       | 123             | 29.4           |
|                | 10 – less than 20 years      | 199             | 47.6           |
|                | 20 – less than 30 years      | 68              | 16.3           |
|                | 30 years and more            | 28              | 6.7            |
|                | <b>Total</b>                 | <b>418*****</b> | <b>100.0</b>   |
|                | *****40 answers were missed. |                 |                |

Table 1: Information on Demographics of Participants

Table 2 showed the characteristics of the firms which owner's are the participants of that study. The majority of the firms are with high endorsement and their number of employees are less than 11. Examining the working time with their suppliers showed that the %35.2 of the firms have been working with their suppliers among 6-10 years, %34.9 of them with 1-5 years and %29.9 of them have been working with their suppliers more than 11 years.

| Variables                         |                                | Frequency (n) | Percentage (%) |
|-----------------------------------|--------------------------------|---------------|----------------|
| <b>Endorsement</b>                | Less than 250.000 TL           | 32            | 8.4            |
|                                   | 250.000 – Less than 500.000 TL | 164           | 43.3           |
|                                   | 500.000 – Less than 750.000 TL | 98            | 25.9           |
|                                   | 750.000 TL and more            | 85            | 22.4           |
|                                   | <b>Total</b>                   | <b>379*</b>   | <b>100.0</b>   |
| * 79 answers were missed.         |                                |               |                |
| <b>Number of Employees</b>        | 1 - 10                         | 392           | 86.2           |
|                                   | 11 - 20                        | 41            | 9.0            |
|                                   | 21 and more                    | 22            | 4.8            |
|                                   | <b>Total</b>                   | <b>455**</b>  | <b>100.0</b>   |
| **3 answers were missed.          |                                |               |                |
| <b>Working Time with Supplier</b> | 1- 5 years                     | 159           | 34.9           |
|                                   | 6- 10 years                    | 160           | 35.2           |
|                                   | 11 years and more              | 136           | 29.9           |
|                                   | <b>Total</b>                   | <b>455***</b> | <b>100.0</b>   |
| ***3 answers were missed.         |                                |               |                |

Table 2: Information About Participants' Firms Characteristics

Table 3 reports the means, standart deviations, Cronbach's Alpha and bivariate Pearson Correlations of the constructs. We found positive and strong correlations between the variables.

| N                           | Cognitive Trust | Affective Trust | Service Quality | Relationship Quality | Cronbach's Alpha | Mean   | SD      |
|-----------------------------|-----------------|-----------------|-----------------|----------------------|------------------|--------|---------|
| <b>Cognitive Trust</b>      | 1               |                 |                 |                      | 0.85             | 3.8849 | 0.65495 |
| <b>Affective Trust</b>      | 0.845**         | 1               |                 |                      | 0.92             | 4.1603 | 0.92535 |
| <b>Service Quality</b>      | 0.841**         | 0.868**         | 1               |                      | 0.96             | 4.3210 | 0.84895 |
| <b>Relationship Quality</b> | 0.770**         | 0.769**         | 0.796**         | 1                    | 0.64             | 3.7982 | 0.50003 |

\*\*Correlation is significant at the 0.01 level (2-tailed).

Table 3: Pearson Correlation Results

To test the hypothesis, we used Regression Analyses in which the relationship quality was entered as dependent variable. Cognitive trust, affective trust and service quality was treated as independent variables. Tablo 4 summarized the results of the regression analyses. Multiple regression coefficients showed that there is a strong relation between cognitive trust, affective trust, service quality and relationship quality ( $R=0.822$ ). The Coefficient of determination ( $R^2=0.675$ ) showed that % 67.5 of the change in relationship quality is due to variables of cognitive trust, affective trust and service quality.

We could see a significant relationship between cognitive trust and relationship quality ( $p<0.01$ ). Affective trust also has an impact on relationship quality ( $p<0.01$ ). Analyzing the effect of service quality on the relationship quality showed that there is a significant and meaningful impact of service quality on the relationship quality ( $p<0.01$ ). In summary, H1 and H2 is supported, because cognitive trust and affective trust is significant for relationship quality. For H3, the results also indicate service quality has an effect on relationship quality. So, the results exhibited that all the hypotsesis in that study are supported and also indicated precious outcomes for whom it may concern.

| ANOVA                                    |                             |            |                                   |         |       | R              |
|------------------------------------------|-----------------------------|------------|-----------------------------------|---------|-------|----------------|
|                                          | Sum of Squares              | df         | Mean Square                       | F       | Sig.  |                |
| <b>Regression</b>                        | 77.116                      | 3          | 25.705                            | 314.138 | 0.000 | 0.822          |
| <b>Residual</b>                          | 37.150                      | 454        | 0.082                             |         |       |                |
| <b>Total</b>                             | 114.265                     | 457        |                                   |         |       |                |
| COEFFICIENTS                             |                             |            |                                   |         |       | R <sup>2</sup> |
| Model                                    | Unstandardized Coefficients |            | Standardized Coefficients<br>Beta | t       | Sig.  |                |
|                                          | B                           | Std. Error |                                   |         |       |                |
| <b>(Constant)</b>                        | 1.544                       | 0.082      |                                   | 18.761  | 0.000 |                |
| <b>Cognitive Trust</b>                   | 0.205                       | 0.042      | 0.269                             | 4.909   | 0.000 | 0.675          |
| <b>Affective Trust</b>                   | 0.103                       | 0.032      | 0.191                             | 3.193   | 0.002 |                |
| <b>Service Quality</b>                   | 0.238                       | 0.035      | 0.404                             | 6.849   | 0.000 |                |
| Dependent Variable: Relationship Quality |                             |            |                                   |         |       |                |

Table 4: Regression Analyses

## 5. DISCUSSIONS AND IMPLICATIONS

As this study is conducted in an environment in such area that affectiv factors are usually ignored, we believe that study will contribute to the field. The results indicate a positive relationship with degree of -affective and cognitive- trust and the relationship quality independently from the effects of service quality, as we predicted. The study revealed that trust-based evaluations, independent from rational, objective assessments, exist in interfirm relationships in the distribution channels context. Because future expectations of firms can be strongly positive, trust could play a crucial role in perceiving relationship quality. However, because evaluation process of a firm by its exchange partners is under the influence of many other factors, such bias which is purified from rational and objective assessments, the perception of relationship quality can be affected by that bias. Future research is needed to clarify that aspect of the subject. Regarding with H3, which has a proof about the strong and positive effect of service quality on the assessment of relationship quality, we can say that the perceived service quality of the exchange partner which is the rational side of that study is the one of the main mechanism improving relationship quality perceptions.

## 6. CONCLUSION

Facing with fierce competitive area make firms mandatory to find ways that rescue them from the challenging of the environment. This research explores the effects of level of trust which are cognitive and affective, and the service quality on the relationship quality through literature and tested methods. The results reveal that type of trust and service quality are strongly associated with perceived relationship quality. That means perceiving relationship quality can be due to high level of trust placed on the partner. Having nearly the same level of effect of cognitive and affective trust on the relationship quality gives some clues about assessment process of firms which means that rational and emotional dimensions have close impact in assesment process. Thus, managers who are willing to perform in such a milieu must be aware of these conditions.

## 7. LIMITATIONS AND FUTURE DIRECTIONS

Implementing the study in just two cities is the first limitation and thus, the study needs to be replicated with more heterogeneous samples in other cities in order to generalize the findings. Sampling method is the second limitation of that study. Because of applying the study in just one sector as third limitation of the study, it can be repeated with more than one sector.

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## THE EFFECT OF FAIR VALUE AND HISTORICAL COST ON FINANCIAL PERFORMANCE – A COMPARATIVE OUTLOOK

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### **ABSTRACT**

*The changes taking place in today's economy have led to the reconsideration and the redefinition of the goals for business activities and the ways in which these might be conducted. Therefore, a need has arisen to have another look at the reasonability of financial reporting as well. In many cases traditional financial statements proved to be inadequate. That is why efforts were initiated in order to implement an integrated system for combining financial reporting with CSR (Corporate Social Responsibility) reporting [Maćkowiak E. 2014: 183]. As a result, an integrated reporting approach was developed to present financial and non-financial data. The problem of how to ensure the disclosure of non-financial information was addressed by Directive No. 2013/34/EU on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC.*

**Keywords:** *historical cost, fair value, value, financial statements*

### **1. INTRODUCTION**

At the turn of the twenty-first century management by value was the prevailing concept in corporate finance. Such management focused on maximizing a company's value and, as a consequence, its value for stakeholders including, in particular, business owners. The overriding aim of business - generating the highest possible profits i.e. maximizing the financial result - was replaced by maximizing of a company's value. The reason behind that change of perspective was the fact that healthy financial performance was not necessarily translated into maximized shareholder value, therefore a better measure of a company's performance was sought after. The accounting model based on historical cost was not sufficient to meet that objective. What was needed was the type of valuation which could reflect the present value of an entity's assets [Wójtowicz P. 2009: 664]. The search led to the development of a fair value concept, which was to become the best measure of value. Fair value has been used in the Polish balance-sheet law since 2002. However, it continues to be controversial. The critics of that approach claim that fair value based valuation provides another argument for the uselessness of valuation in volatile market conditions, instead of showing a clear view of business reality [Hońko, 2012:83]. All in all, the concept seems to have an equal number of followers and opponents. In practical terms, fair value tends to be used with reference to investments or some special events in course of business operations. As an example, the following list can be compiled for the applications of fair value: Dyduch A. 2010, Michalczyk, 2009: 35-41]:

- property, plant and equipment (IAS 16),
- intangible assets (IAS 38),
- adoption of the IFRS for the first time (IFRS 1),
- biological assets (IAS 41),
- impairment of assets (IAS 36),
- financial assets and liabilities (IAS 39, IAS 27),
- non-current assets held for sale (IFRS 5),
- employee benefits (IAS 19),

- mergers and acquisitions (IFRS 3),
- consolidation of financial statements (IAS 27),
- share-based payment (IFRS 2).

## 2. THE SCOPE OF FAIR VALUE APPLICATIONS

The need to improve the quality of the accounting system gave rise to the introduction of fair value measurement. The changes related to fair value resulted from the attempts to better tailor the information contained and presented in financial statements to its key recipients i.e. investors. P. Wójtowicz points out that stock exchange investors are more interested to obtain the data on the present value of assets than their historical value, as understood literally [Wójtowicz P. 2011: 50]. One of the reasons for that, for instance, may be the difference between book value and market value. In addition, A. Mazur writes that the data derived from the measurement based on initial value is likely to be used by these stakeholders in order to estimate the market value of an enterprise, i.e. the net present value of projected cash flows [Mazur A. 2011: 160]. The definition of fair value used to attract criticism due to a number of formal shortcomings and its ambiguity. Therefore, IFRS 13 Fair Value Measurement provided a coherent definition of fair value which appeared to be more consistently applicable. According to this standard fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date<sup>1</sup>. This definition comprises the following components [Barczyk K. 2012:]:

- exit price - as seen from the seller's perspective,
- orderly transactions – market transactions, an asset quoted on a market,
- market participants – the transaction the fair value comes from, between the seller and the buyer on the most advantageous market,
- transfer of a liability – when determining the fair value of a liability it is assumed that in case of an entity's failure to settle the liability, the fair value is the amount for which the market participant takes over the obligation to repay the debt.

Fair value is closely linked to the concept of active market, which involves the need to gain access to well-developed information systems which cover most of the transactions that are conducted. Fair value is a broader term than selling price, as selling price is limited to a transaction of sale while fair value may also refer to non-sale transactions [Sobolewski M., 2004]. At the same time, fair value extends beyond market value, as it is determined by the market price on an active market, where reliable exchange of goods takes place, but also on a hypothetical market if there is no active market for a given asset [Hasik W. 2007: 48-51].

The issue of fair value is also governed by US GAAP. The standard published by FASB shows that fair value should be understood as the amount that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. What can clearly be seen is that this definition overlaps with the definition set forth in IFRS 13. The International Accounting Standards for Small and Medium-Sized Entities, published in IASB in 2007, define fair value as the amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties in an arm's-length transaction.

In this case, fair value may apply to:

- investment property,
- property, plant and equipment,
- intangible assets,
- agricultural assets,
- financial assets and financial liabilities.

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<sup>1</sup> IFRS 13, published on 12 May 2011

Fair value may be used when there is an active market but also in the absence of such market. If there is no active market, other available methods should be employed (e.g. valuation by a surveyor). In this case, however, the obtained value might be subjective. The Accounting Act does not provide for any specific fair value framework, but by reference to IFRS 13 the following 3 levels of hierarchy may be distinguished when conducting fair value measurements. Level 1 are inputs from an active market, which may be looked upon as a source of most reliable data. Level 2 are observable inputs other than the ones from an active market. These inputs may comprise:

- quoted prices for similar assets or liabilities from an active market,
- quoted prices for identical or similar assets or liabilities in markets that are not active,
- inputs other than quoted prices (interest rates),
- other market-corroborated inputs.

Level 3 inputs are unobservable inputs, when inputs from the first two levels are not available. Under art. 44b par. 4 of the Accounting Act the following fair market measurement methods may be used in case of mergers [Głębocka M. 2012: 182]:

- market price - if there is an active market,
- a price which may be obtained from a sale minus transaction costs, liquidation value,
- comparison between market prices, market indicators for similar financial assets,
- current prices, costs, taking into account the degree of tear and wear,
- discounted value of cash flows.

IFRS 13 lists the categories of prices which are not considered fair value:

- net realizable value used when measuring inventories, in accordance with IAS 2 Inventories,
- recoverable amount when measuring impairment of assets under IAS 13 Impairment,
- value of long-term incentive plans established under IFRS 2.

### **3. THE APPLICATIONS OF HISTORICAL COSTS**

Traditional methods for measurement of assets are based on their historical costs. Consequently, assets are measured at the actual prices of their acquisition or manufacture. This method results from the accounting principle of prudence. When looking at a historical cost it should be noted that this cost comes from the past and stems from the price of acquisition on the day when a given asset was purchased.

The Accounting Act states that most assets tend to be measured based on their historical cost. The basis for such valuation is the price of acquisition or the cost of manufacture. For intangible assets and tangible fixed assets, excluding land, the initial value is adjusted to take into account depreciation charges as well as possible impairment losses. The principal feature of historical cost valuation is the fact that the value of assets cannot be re-estimated to be above the price of acquisition. Historical cost valuation allows for revaluation charges but only the ones which reflect a loss in value.

IAS 16, in turn, refers to historical cost as a price equivalent expressed in monetary terms. This equivalent is determined on a date when a given asset is recorded. Therefore, if the payment is delayed in time, then historical cost is not the value owed to the seller but its equivalent expressed in monetary terms.

Attention should be drawn to the fact that historical cost measurement does not take into account unrealized profits and no revaluation above the purchase price may be carried out.

The International Accounting Standards for Small and Medium-Sized Entities define historical cost as the amount of money paid or their equivalent or a fair value of the payment transferred in order to buy an asset on a day of its purchase.

#### 4. FAIR VALUE AND HISTORICAL COST – BENEFITS AND DRAWBACKS

Both historical cost and fair value demonstrate some advantages and disadvantages. The drawbacks of historical cost valuation include:

- a lack of connection with current market conditions,
- understated value of resources leading to hidden reserves,
- limited usefulness for decision-making.

The main arguments raised against fair value include [Mazur W. 2011:99]:

- its insufficient reliability,
- leading to high inconsistency in financial statements,
- subjective estimates of fair value in the absence of an active market and their inaccuracy,
- generating values in financial statements which are not useful from the enterprise's point of view,
- a lack of connection with how a measured resource is to be used,
- its failure to take into account:
  - \* a synergy effect between resources,
  - \* restrictions or specific rights assigned to the present owner only,
  - \* tax benefits or burden which are specific to the present owner only.

The advantages of historical cost, on the other hand, comprise:

- simplicity and objectivism,
- reliability of obtained results,
- verifiability of obtained results.

The benefits offered by fair value measurement include its connection with current market conditions and the reflection of an entity's income generating power.

#### 5. THE IMPACT OF HISTORICAL COST AND FAIR VALUE ON FINANCIAL PERFORMANCE

When analysing the valuation methods, a question may arise about the applicability of the fair value model to all the components of financial statements. Another issue is the impact of historical cost and fair value valuations on a company's bottom-line figures.

**Table 1**

Conceptual framework for the valuation methods

| <i>Historical cost principle</i>                                                                                                                                      | <i>Current purchase price principle</i>                                                                                                            | <i>Applicable value principle</i>                                                                                                         | <i>Present value principle</i>                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Assets are recorded on their purchase date at the value equal to a monetary amount paid for them or fair value of non-monetary payment made in order to acquire them. | Assets are valued at a value equal to an amount which should be paid for them in case identical or similar assets were to be purchased at present. | Assets are valued at a value equal to a monetary amount which may be obtained at present when selling an asset in an orderly transaction. | Assets are valued at a discounted present value of net future cash inflows predicted to be generated by a given asset in course of business. |
| <b>FAIR VALUE BASED MEASUREMENT</b>                                                                                                                                   |                                                                                                                                                    |                                                                                                                                           |                                                                                                                                              |

Source: the author's own elaboration

Both in fair value measurement and historical cost measurement impairment losses are determined. Impairment reflects a reduction in future economic benefits which may be generated. In this case, a new value in use needs to be estimated:

- future cash inflows and outflows from further use of an asset or from its ultimate disposal have to be estimated,
- an appropriate discounted rate should be used to estimate the value of such cash flows.

For example:

In January an entity purchased an investment property worth PLN 600,000, incurring, in addition, the costs of PLN 400,000, related to the purchase and adaptation of this property to its investment needs. In the year 200X+1, based on certain premises, the investment property

was found to generate impairment losses of PLN 200,000. Real properties of such type are subject to depreciation at the rate of 10% per year, to be charged starting from the month which follows the one when the property is entered into accounts.

#### Option 1

##### Historical cost valuation

The purchase price of the investment property is  $600,000 + 400,000 = 1,000,000$ ;

In historical cost valuation depreciation charges need to be taken into account

$$Am = (1,000,000 \times 10\% \times 11) / 12 = 91,666$$

Also, impairment losses of 200,000 have to be recognised

$$\text{Balance-sheet value: } 1,000,000 - 91,666 - 200,000 = 708,331$$

Under its assets the entity will present non-financial investments of PLN 708,331.

The profit and loss account will contain other operating costs of PLN 291,666 (a reduction in the financial result),

#### Option II

##### Fair value based valuation

$$\text{Balance-sheet value: } 1,000,000 - 200,000 = 800,000$$

Under its assets the entity will present non-financial investments of PLN 800,000. In the profit and loss account it will recognise other operating costs of PLN 200,000.

The consequence of fair value based measurement are periodical changes in the contents of financial statements. On one hand, revaluation upwards or downwards will affect assets, and on the other hand the effects of such revaluation will be recognised under owners' equity. The effects of revaluation may also be recognised in the financial result or the revaluation reserve, but the revaluation reserve will be presented in the balance-sheet only in case when the entity has this asset at its disposal. If it is sold, retired or donated, this reserve will have to be reversed. In historical cost valuation, an asset cannot be revaluated to be worth more than its price of acquisition. Only impairment losses and depreciation charges are permitted.

#### Example 2

When carrying out another revaluation, it was established that the impairment premises were no longer present. It was also reported that the market value of the investment property rose by PLN 150,000 above its purchase price.

#### Option 1

When carrying out historical cost valuation, a depreciation charge for the investment property should, first of all, be recorded and then the impairment loss should be reversed.

$$\text{Depreciation charge: } 1,000,000 \times 10\% = \text{PLN } 100,000$$

$$\text{Balance-sheet value: } 708,334 - 100,000 + 200,000 = \text{PLN } 808,334$$

In case of the historical cost measurement, the revaluation above the purchase price is not possible, therefore only the absence of impairment could be recognised.

As of the balance-sheet date, the value of the investment property is PLN 808,334, while the profit and loss account shows other operating costs of PLN 100,000 and other operating income of PLN 200,000. As a consequence, the financial result increased by PLN 100,000

#### Option 2

##### Fair value based valuation

Just like in year one, no depreciation charges are recognised but a rise in value is taken into account.

Balance-sheet value:  $800,000 + 200,000 + 150,000 = \text{PLN } 1,150,000$

Fair value based valuation led to a rise in assets by PLN 350,000 as well as an increase in the financial result.

Through the use of fair value assets may be re-measured to be above their price of acquisition or, in case of a loss in value, to be below their price of acquisition. The upwards revaluation will lead to a rise in the financial result as its effects are recognised under other operating income or financial income. An exception will be long-term financial assets, as a rise above their purchase price will be recognised under revaluation reserve.

### Example 3

The entity purchased long-term financial assets. The purchase price was PLN 80,000. The entity also paid commission on this transaction, at the rate of 2%.

When carrying out the balance-sheet valuation in the year 200X, the market value was determined to amount to PLN 100,000. In the balance-sheet valuation for the year 200X+1 a drop in share value to the level of PLN 60,000 was recorded.

#### Option 1

Historical cost valuation

Year 200X

$\text{PLN } 80,000 \times 2\% = 3,200$

Balance-sheet value: PLN 83,200

Year 200X+1

Balance-sheet value:  $83,200 - 23,200 = \text{PLN } 60,000$

#### Option 2

Fair value based valuation

Year 200X

The balance-sheet value amounts to PLN 100,000. A rise in the value of long-term financial assets led to an increase in the revaluation reserve.

Year 200X+1

In the first place, a drop in value below the purchase price led to the reversal of the revaluation reserve, and the decrease in value below the purchase price is recognised under financial costs. The balance sheet value of long-term financial assets:  $100,000 - 40,000 = \text{PLN } 60,000$ .

The financial result here is, of course, hypothetical as it is just a forecast of future cash flows and, as such, does not necessarily have to be come true in the future. The revaluation downwards will lead to a reduction in the financial result as its effects are going to be recognized under financial costs or other operating costs. Also in this case, the financial result will be hypothetical in its character.

When comparing the figures shown above attention should be drawn to the fact that the selection of a valuation method brings about different results. Therefore, it can be employed to manipulate financial performance.

## 6. FINAL REMARKS

The literature on the subject quotes a number of statements on the application of fair value in balance-sheet measurements, claiming that [Cozma I.D., 2009: 861]:

- it affects the comparability of data (consistent method of measurement),
- it provides information about gains or losses expected in the future,
- it reflects decisions made by management on maintenance of resources,
- it reflects the effects of changes in prices.

The main problem in accounting is the selection of valuation methods, i.e. the choice between historical cost and present cost. The historical cost approach favours profit measurement and the profit and loss account, while the fair value approach focuses on the balance-sheet and assets/liabilities.

Both methods - historical cost valuation and fair value based valuation - demonstrate certain advantages and disadvantages.

J. Gierusz writes about some unquestionable advantages offered by historical cost valuation, which include:

- verifiability of results,
- objectivism,
- simplicity of measurement,
- comprehensibility of achieved results,
- easy standardisation,
- once accepted, methods can be used on a continuous basis,
- relatively low costs of data collection,
- easy verification,
- convergence with tax regulations,
- reliability of results.

The main drawback of historical cost measurement is its focus on the past and the resulting implications. [Gierusz J.2011: 144].

The key advantage offered by fair value measurement is the fact that it provides information about current values of assets.

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## DEVELOPMENT OF AN INNOVATIVE MANAGEMENT MODEL USING METHOD ENGINEERING

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### ABSTRACT

*Organizational systems transform input to output, creating thereby added value. The use of different management methods ensures that the transformation process is focused on achieving long-term objectives that are defined in the strategic plan, so organizations can realize growth and development. Thereby, many methods can't be used in standard and exactly the same way every time and in every development challenge and often it is not also enough to apply a single management method. It is necessary to find an appropriate way to customize generic methods to specific circumstances of the development project or undertaking. This paper will describe how to develop an innovative and unique management model by combining two management methods, one for performance measurement and one for quality management, using method engineering.*

**Keywords:** *transformation process, management methods, method engineering*

### 1. INTRODUCTION

The organizational system is a unit composed of its staff, capital equipment, technology of work and the environment which provides it conditions and reasons for existence. It is possible to describe the structure of an organizational system and the way how it works through basic factors of a business system. The basic factors of the business system include organizational units (meaning locations where units are physically located), business processes (or transformation functions which are specified through duration and scope), resources (such as material or data values, which the processes transform into new values), flows (for the exchange of resources), activities (or elementary steps of business processes) and goals (to be achieved). Each and every of these factors describes a part of an organizational system that is somehow important to the design of the entire business technology and thus helps to create a complete picture of the organization. To achieve growth and development, a business system has to use different management methods, that will guide it from an as-is to a to-be state.

### 2. ENGINEERING OF MANAGEMENT METHODS

Development methods and processes used in an organization are considered to be their valuable property. Optimization and efficient re-use of different methods and processes can greatly increase the productivity and quality of the development of an organization. However, many methods can't be used in standard and exactly the same way for every development challenge. It is necessary to find an appropriate way to customize generic methods to specific

circumstances of the development project or undertaking. Method engineering is a „continuous, evolutionary process that supports the adaptation of methods to changing technical and organizational contingencies and new development needs“. (Rossi, Balasubramaniam, Kalle, Tolvanen, 2004, p. 358)

Fundamental strategies of method engineering are:

- re-use methods – which should be used whenever possible
- adjust method - which includes minor changes to the method that will then satisfy its application- this option is appropriate when the modification of the method does not require fundamental changes in the basic concepts and objectives of the design method
- develop new methods - used when the previous two strategies are not appropriate. (Mayer, Crump, Fernandes, Keen, Painter, 1995, p. 8).

In order to develop a procedure of management method innovation through method engineering, two management methods were selected in this paper: measuring organizational performance and quality management.

### **2.1. Measuring organizational performance**

The modern concepts of managing complex organizations in a dynamic environment imply three principles:

- Better use of the intellectual capital of the organization in such a way that the vision of its development is clarified to the employees at all organizational levels and thus enables their participation in the creation and implementation of that vision
- Organizational management in a way that strategic ideas are converted into actions suitable for the operative organizational levels
- Introduction of a multi-dimensional performance measurement system, while not measuring only its financial achievements (Tomičić, Dobrović, 2006, p. 13).

According to Poister (Poister, 2003, p. 28), measuring success in an organization enables it to track the progress of the development of strategic initiatives and assists in the evaluation of achieving the desired results, through a series of management activities, for example, monitoring and reporting, budget management and financial management programs, performances management, improving the quality of business processes, communication with the public, etc. According to Marr (Marr, 2009, p. 137) there are many reasons why organizations measure effectiveness, but they all can be classified into one of three categories shown in Figure 1.

*Figure following on the next page*

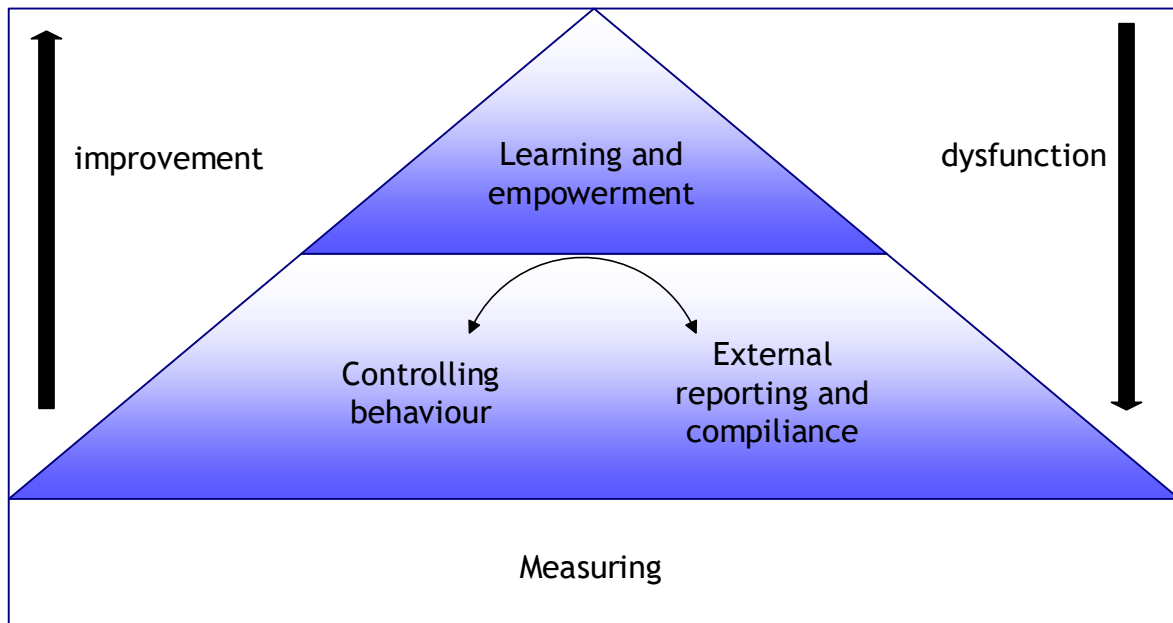


Figure 1.: Reasons for performance measurement (Marr, 2009, p. 137)

The first reason, control of behavior, includes performance measurement for control of staff, usually done by a superior for a subordinate. The measures include definition of rules in order to achieve the objectives and to identify places where the objectives are not achieved.

The second reason, external reporting and harmonization, includes notifying owners and other participants about the work progress and harmonization of presentation format of the same work progress with regulations for reporting and providing information. Measures usually include financial statements.

If an organization measures its effects to control the behavior or due to external elements, there is a great potential for dysfunction to occur in business. Employees can see the measuring system as a means of compulsion and control that in doesn't stimulate their work in any way, and the system itself can bring a negative impact on increase of profitability and success.

The third reason, learning and strengthening, is the rationale for which the measurement system should be created. All employees should receive information relevant to their work and comply their capacities with this information in order to work better.

## 2.2. Quality management

In business development, it is important to establish and maintain a high intensity level of quality. It is relevant that products, services, processes and activities are unified and accepted by the users by optimally fulfilling its purpose.

According to Lazibat (Lazibat, 2009, p. 42), quality is a degree of fulfilling defined requirements by any set of inherent characteristics (definition of quality according to ISO 9000: 2000).

Oslić states that the first indication of the use of quality management occurred in Japanese companies by applying various methods of quality management in management departments. Later, quality management activities were performed by new independent departments followed by specific large organizations with the primary role of quality management. (Oslić,

2008, p. 70). Due to maintenance of quality in large numbers of processes and activities, it is necessary to continuously and comprehensively manage quality in accordance with the operations of the organization and adjust on both sides. In order to do that business should include quality management in all segments of the organization. Deming claims that improving quality is not a one-time job, but should be seen as continuous way for finding new ways to reduce costs and improve quality. (Lazibat, 2009, p. 88). One of quality management methods is total quality management (TQM), which should include and provide high quality products and services, and also the satisfaction of all stakeholders - customers, employees, owners of capital, suppliers and other partners in the environment close to the business. (Oslić, 2008, p. 128). All these participants expect optimal level of operations that can be achieved using the methods of TQM control processes which are related to the maintenance and improvement of the level of quality.

According to Lazibat (Lazibat, 2009, pp. 215-218), TQM represents management approach where long term success is driven by customer satisfaction. TQM is carried out according to the basic principles covered by the following points:

- Focus on customer satisfaction and quality products and services
- A request for a permanent improvement of quality
- All employees must be included in the activities of implementation of TQM

Table 1 shows the difference between the traditional view of the quality and the modern, TQM view.

*Table 1. The difference between the traditional and the modern view of quality (TQM)  
(Lazibat, 2009, p. 220)*

|                                  | <b>The traditional view of quality</b>                                                        | <b>The modern view of quality management (TQM)</b>                                                          |
|----------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Productivity and Quality</b>  | Increased conflict between quality and productivity                                           | The objective is to achieve productivity growth through continuous improvement                              |
| <b>Definition of quality</b>     | Fulfill the customer's specifications                                                         | Satisfy the customer needs and exceed their desirable expectations                                          |
| <b>Measurement of quality</b>    | Accept the non-conforming product:<br>Constantly measured quality                             | A measure of customer satisfaction higher level is established with continually improving performance       |
| <b>Achieving quality</b>         | Control after production                                                                      | The design of products, processes and effective control and quality techniques                              |
| <b>Relationship with defects</b> | Unavoidable and expected aspect of production (a measure of defective parts per 100 products) | Effective control systems for the prevention of defects (a measure of defective parts per million products) |
| <b>The quality as a function</b> | A separate, single function                                                                   | Permeated through the entire organization, all employees are responsible                                    |
| <b>Responsibility of quality</b> | Employees responsible for poor quality                                                        | For the 85% of quality problems is management fault                                                         |
| <b>Relations with suppliers</b>  | Short-term relations guided by expenses                                                       | Long-term relations oriented to quality                                                                     |

### 3. CONCEPTUAL MODEL OF MANAGEMENT METHOD ENGINEERING

Whatever strategy for method engineering is applied, activities that are performed should be documented. If the strategy is an extension of one method using other methods, then the methods can be linked through conceptual models.

Modeling is the process of creating an abstract view of a system. The model is a result of a process abstraction, which reflects the characteristics of a system and represents the formal specification of functionality, structure and behavior of the system (Raffai, 2008, p. 811).

The two selected management methods are connected in an innovative management model through a process model in Figure 2. Process model of integration of TQM and performance measurement. The process model includes activities that describe the use of performance measurement method (in blue color) and activities that describe the use of quality management (in purple color).

The activities that describe the use of performance measurement method are adjusted from previous work of the authors (Dobrović, Tomicic, Vrcek, 2008, p. 12) and they show how to develop specific objectives and measures from the organizations vision. The activities that describe the use of quality management give input or use the results of the performance measurement procedure in order to connect these two management methods in an innovative management model that can be used for organizational development.

The application of quality management techniques, represented in the model as activities, in accordance with the performance measurement activities is shown in Table 2. Every technique is described in means of its purpose in quality management use, and then it is connected to a specific activity in means of how it gives input or use outputs of performance measurement.

*Figure following on the next page*

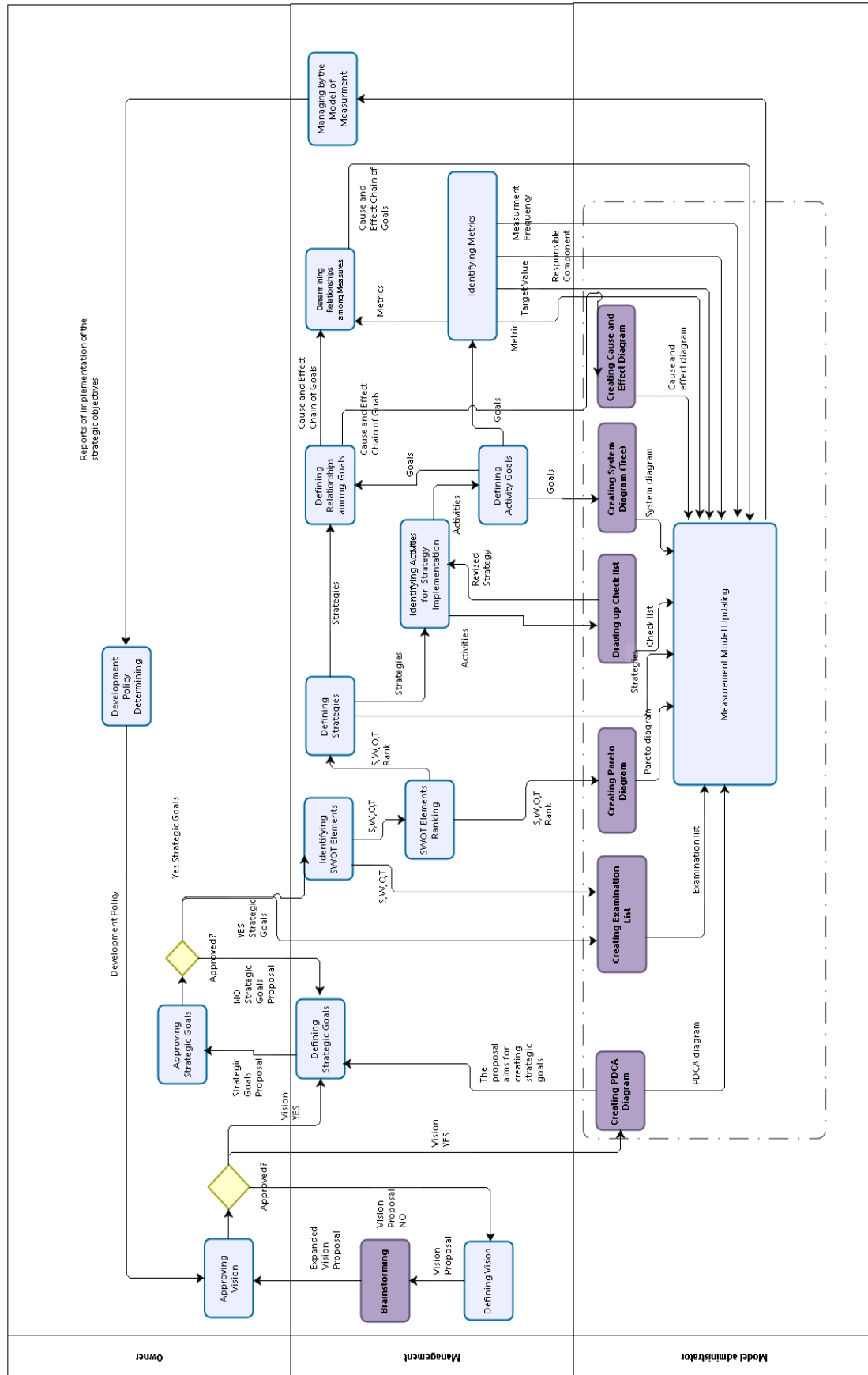


Figure 2. Process model of integration of TQM and performance measurement  
Table 2. Application of quality management techniques

| Technique                       | Description                                                                                                                     | Application                                                                                                                                                                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Brainstorming</i>            | Tool for generating a lot of ideas in a group or individually                                                                   | Generate as many suggestions for the vision of the organization                                                                                                                       |
| <i>PDCA diagram</i>             | Plan-Do-Check-Act → basic systematic approach to improve the cyclically repeating stages                                        | Divide defined vision into smaller sections to create suggestions of strategic goals                                                                                                  |
| <i>Examination list</i>         | List which allows the collection and selection of the most important data                                                       | Select S,W,O,T elements for easier ranking by default categories                                                                                                                      |
| <i>Pareto diagram</i>           | Tool for defining a small number of factors which create the largest number of effects                                          | Rank S, W, O, T elements so you can reveal those activities which can contribute most to the vision and strategy of the organization                                                  |
| <i>Check list</i>               | List with the necessary tasks that must be performed during the implementation process and for particularly important processes | Divide activities for the implementation into smaller steps (tasks) that have to be executed in chronological order to implement them in the organization.                            |
| <i>System diagram (Tree)</i>    | Graphic view towards the goal with a sequence of activities that must be respected                                              | Create graphical representation of all activities and goals, in their given order and hierarchy with respect to the defined strategy                                                  |
| <i>Cause and effect diagram</i> | A logical analysis of the problem with linking process and activities, suggests the main reason for problem occurrence          | Create a chain of cause and effect in which potential problems can be detected and sanctioned at the same time or act proactively to the problem so it would not have appeared at all |

Table 2. - Application of quality management techniques

#### 4. CONCLUSION

Organizations that want to realize growth and development have noticed that there is a need for replacing the classic, simple management methods with more complex methods or with their combination. Trends in the development show the need to connect different methods and complement the theoretical foundations of the method with guidelines for their practical application and adaptation for the organization in which they are going to be used. Modern methods include defining of objectives in the scope of the businesses strategic framework and monitoring the achievement of these objectives. Methods for the determination of the level of achievement are among other performance measurement and quality management. In this paper, we have shown one way of connecting two management methods into one innovative model that can be implemented and used in organizations.

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## FACTORS AFFECTING BANKRUPTCY RISK: AN APPLICATION ON BORSA ISTANBUL

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### ABSTRACT

*The aim of this paper is to reveal the factors affecting bankruptcy risk. In the paper, the factors affecting capital structure is examined by testing 79 Turkish manufacturing firms traded on Borsa Istanbul, with 474 observations from 2010 to 2015. Using Modified Altman's Z-score as proxy for bankruptcy risk on panel data analysis, the significant relationships are found between independent variables and bankruptcy risk. Profitability, leverage, size, liquidity, growth, age, firm value, dividend payments, derivative usage dummy, and ownership structure are used as the firm's specific variables that affect financial distress. In addition, Ante Pulic's (1998) Value Added Intellectual Coefficient (VAIC) is employed as proxy for intellectual capital. According to results of the study, intellectual capital is positively related with Z-score.*

**Keywords:** *Altman's Z-score, Intellectual Capital, Panel Data Analysis.*

### 1. INTRODUCTION

Rapid changes in economic terms, especially since the 1990s, have increased uncertainties and future risks for firms. Therefore the determination of firms' financial risks has become essential for long-term success.

Financial distress is defined as "the likelihood of bankruptcy, which depends on the level of liquid assets as well as on credit availability" (Hendel, 1996, 310). The problem of financial distress is gaining importance in view of the number of firm failures, following the market failure of the early 1990s.

The presence in the highly competitive environment in recent years complicates the activities of firms. The risk of mild financial failure resulting from loss of firm and/or liquidity problem may go up to the bankruptcy of the company. Financially distressed firms have problems paying off their due or overdue financial obligations to their creditors. In parallel with this situation, understanding financial distress and bankruptcy risks is getting important to managers, creditors, auditors and financial analysts.

Numerous studies attempt to predict financial distress based on firm specific characteristics. Studies in the literature often focus on the comparison and effectiveness of financial failure prediction models. However, while trying to predict which model will lead to bankruptcy risk, it is neglected which variables are directly related to failure. Therefore the firm-specific factors which may be the determinants of the bankruptcy risk, have been examined within the scope of this study.

The aim of this study is to determine the firm-specific factors affecting bankruptcy risk. Another aim is to contribute to the finance literature. In the model of study, modified Altman Z score was used as a proxy of bankruptcy risk. The study attempts to test the effects of as many factors as possible to financial distress.

In this study, the firm-specific factors assumed to affect bankruptcy risk were analyzed by applying panel data analysis method. It is expected that the results obtained will be evaluated by both financial managers and investors and will guide future financial decisions.

## 2. LITERATURE

Numerous studies have been carried out to develop a suitable model for estimating financial distress of firms and for classifying firms according to their financial status. Discriminant analysis, logistic regression and artificial neural networks were generally applied in the studies in the scope of bankruptcy prediction models.

Altman (1968) used multiple discriminant analysis after Beaver's (1966) univariate study in using financial ratios to predict bankruptcy. Altman's analysis includes knowledge of several financial ratios in a single forecasting model. The Altman Z-Score model is a result of multiple discriminant analysis. This model has been popular for many years because it is easy to use and the results are highly accurate.

Deakin (1977) and Chung, Tan and Holdsworth (2008) can be considered among the researchers who predicted financial distress using multiple discriminant analysis such as Altman. In addition, there are studies using regression analysis (Meyer and Pifer, 1970), logit regression analysis (Ohlson, 1980, West, 1985) and artificial neural networks (Shin and Leen, 2002). In the study of Aziz and Dar (2006), it was found that the most used models were multivariate discriminant model (Z score) and logit regression analysis in 89 studies conducted from 1968 to 2003. Some of these studies are mentioned below.

In the study of Meyer and Pifer (1970), they matched 39 banks that were bankrupt in the US from 1948 to 1965 with 39 successful banks with similar characteristics. They applied 0-1 regression technique to indicate the risk of bankruptcy on matched banks. As a result of the study, it was seen that 80% of the banks could be divided into the right groups for 1 and 2 years before bankruptcy date.

In the study of Sinkey (1975), it is attempted to identify differences between successful and unsuccessful banks. In the survey conducted on 69 banks, 4 different rate groups were determined. There were significant differences between distressed and undistressed banks.

Ohlson (1980) used logistic regression to predict bankruptcy in his study. Between 1970 and 1976, 105 bankrupt and 2058 not bankrupt firms were examined. It was 96.12% successful for one year, 95.55% for two years before bankruptcy.

Canbaş and Erol (1985) adapted Altman's (1968) and Sinkey's (1975) studies to the Turkish sample. Using univariate variance analysis in the study, it was stated that risky and risk free bank groups in the sample can be differentiated from each other.

İçerli and Akkaya (2006) compared the financial ratios of 80 industrial firms in Borsa Istanbul sample. In the study, 10 different financial ratios of the firms in the study were calculated and the Z test was applied. According to the results of the study, it was determined that there were significant differences in the financial ratios of distressed and undistressed firms.

Muzır ve Çağlar (2009) aimed to test eight widely used financial distress models in Turkey and compare their forecast performance for the first year before bankruptcy. According to results of the study, it was seen that none of the existing model proposals could have a high correct classification rate. The O-Score model proposed by Ohlson was found to be more successful than the other models with 81% correct classification rate.

Zeytinoğlu and Akarım (2013) examined the application of Altman's financially distressed and undistressed discrimination in the sample of Borsa Istanbul. According to findings, it is concluded that the method applied is explanatory over 88% in predicting financial distress of the firms.

In the majority of previous studies, it was researched whether there is a significant difference between the financial ratios of successful and unsuccessful firms. It has been widely studied to estimate the financial failure using logit regression analysis and discriminant analysis.

However, in some recent studies, the Altman Z score, debt service coverage ratio and distance to default risk are used directly as dependent variables.

Zhang et al. (2016) investigated the determinants of financial distress in the sample of bank holding companies in the United States. As a dependent variable, "default risk" developed by Black & Scholes (1973) and Merton (1974) was used as a financial failure indicator. According to the findings obtained, the macro economic variables such as the real estate price index and the specific variables such as the bank borrowing ratios were found to be significantly correlated with financial distress.

It can be assumed from the results of previous studies in Turkey that Altman's Z score in Borsa Istanbul sample gives effective results. In accordance with this assumption, the Z score is used as the proxy of bankruptcy risk in this study and it is aimed to determine the factors affecting bankruptcy risk.

### 3. METHODOLOGY

The aim of this paper is to reveal the factors affecting bankruptcy risk. In the paper, the factors affecting bankruptcy risk is examined by testing 79 listed Turkish manufacturing firms traded on Borsa Istanbul, with 474 observations from 2010 to 2015.

The situation often arises in financial modeling where the data comprising both time series and cross-sectional elements, and such a data set is known as "panel data" or "longitudinal data". A panel of data will embody information across both time and space. Importantly a panel keeps the same individuals or objects and measures some quantity about them over time. (Brooks, 2008: p.487).

This study included all the possible alternatives of the variables (bankruptcy risk, value, profitability, size, liquidity, efficiency, growth, maturity, dividend paying, free float ratio and intellectual capital) and considered the most explanatory ones.

The data for the variables in the models were obtained using the financial tables and audit reports of the firms taken into consideration for the study. The financial tables of the firms were accessed through the official web site of the "**Public Disclosure Platform**" ([www.kap.gov.tr](http://www.kap.gov.tr)). Explanations for all the variables are presented in Table 1.

*Table 1. Variables - Proxies*

| VARNAME | VARIABLES        | PROXIES                                                       |
|---------|------------------|---------------------------------------------------------------|
| (Z')    | Bankruptcy Risk  | Modified Altman Z Score (Z')                                  |
| (VALUE) | Firm Value       | Natural Logarithm of Tobin's Q                                |
| /DER)   | Derivative Dummy | Using Derivatives (1-0)                                       |
| (ROE)   | Profitability    | Net Profit / Total Equity                                     |
| (LEV)   | Leverage         | Long Term Debt / Total Assets                                 |
| (SIZE)  | Size             | Natural logarithm of Total Assets                             |
| (LIQ)   | Liquidity        | Current Assets/Short Term Debt                                |
| (ATO)   | Efficiency       | Assets Turnover                                               |
| (GROW)  | Growth           | (Total Assets <sub>t</sub> / Total Assets <sub>t-1</sub> ) -1 |
| (AGE)   | Maturity         | Firm Age                                                      |
| (DIV)   | Dividend Payment | Dividend Payment / Equity Value                               |
| (FFR)   | Free Float Ratio | Publicly Traded Shares / Total Equity                         |
| (VAIC)  | VAIC             | Value Added Intellectual Capital                              |

Modified Altman Z score was used as dependent variable representing bankruptcy risk for the model. The following model was composed for the study.

**Model:**

$$(1) \quad Z'_i = \alpha + \beta_1 VALUE_{1it} + \beta_2 DER_{2it} + \beta_3 ROE_{3it} + \beta_4 LEV_{4it} + \beta_5 SIZE_{5it} + \beta_6 LIQ_{6it} + \beta_7 ATO_{7it} + \beta_8 GROW_{8it} + \beta_9 AGE_{9it} + \beta_{10} DIV_{10it} + \beta_{11} FFR_{11it} + \beta_{12} VAIC_{12it} + \varepsilon_i$$

It is expected that the variables of profitability, firm value and intellectual capital will determine the effect of reducing bankruptcy risk (increasing the Z score).

Leverage and size are expected to determine the effect of increasing bankruptcy risk (reducing the Z score). Nevertheless, there is no clear forecast for the effects of growth, age, derivative use, dividend payment and free float ratio.

#### 4. RESULTS

Two different estimators for the parameters of a panel data regression model as treated by Hausmann. Specifically, it is well known that both the “random effects” and the “fixed effects” panel estimators are consistent under the assumption that the model is correctly specified and that the regressors are independent of the “individual-specific effects”.

It is often said that the random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population (for instance, when the sample comprises all of the stocks traded on particular Exchange). However the random effects approach has a major drawback which arises from the fact that it is valid only when the composite error term is uncorrelated with all of the explanatory variables. If they are uncorrelated, a random effects approach can be used; otherwise the fixed model preferable (Brooks, 2008: p.500).

The Hausmann test was performed on the models to determine appropriate model. The test results are presented in Table 2.

*Table 2. The Results of Hausmann Test*

| Models  | Hausmann Test          |
|---------|------------------------|
| Model 1 | 196.767766 (0.0000)*** |

\*\*\*, \*\* and \* are statistical significant at %1 level, %5 level and %10 level.

The *p*-value for the tests are less than 1%, indicating that the random effects model is not appropriate and that the fixed effects specification is to be preferred. The panel data analysis was performed according to the fixed effect model.

A common assumption in many time series models is that the data are stationary. A stationary process has the property that the mean, variance and autocorrelation structure do not change over time. Stationarity tests allow verifying whether a series is stationary or not. According to Augmented Dickey-Fuller test (ADF), the null hypothesis is that the series possesses a unit root and hence is not stationary. In the study, ADF unit root test was performed on the final series and it was concluded that the series were stationary.

The results of panel data analysis are presented in Table 3.

Table 3. The Results of Panel Data Analysis

| Independent Variables     | Dependent Variables                |
|---------------------------|------------------------------------|
|                           | Bankruptcy Risk                    |
|                           | Model                              |
| C                         | <b>0.154532</b><br>(0.053490)      |
| Firm Value                | <b>0,256241</b><br>(1.294725)      |
| Derivative Dummy          | <b>0.074878</b><br>(0.695307)      |
| Profitability             | <b>0.027802*</b><br>(1.672800)     |
| Leverage                  | <b>-0.835587***</b><br>(-10.47568) |
| Size                      | <b>0.032909</b><br>(0.265812)      |
| Liquidity                 | <b>-1.361606***</b><br>(11.64633)  |
| Efficiency                | <b>1.627226***</b><br>(12.45221)   |
| Growth                    | <b>0.231426</b><br>(1.288601)      |
| Maturity                  | <b>-0.300706</b><br>(-0.647482)    |
| Dividend Payment          | <b>0.466806</b><br>(-0.414325)     |
| Free Float Ratio          | <b>-0.012355</b><br>(-0.114325)    |
| VAIC                      | <b>0.000630**</b><br>(2.341494)    |
| Observation               | <b>474</b>                         |
| R <sup>2</sup>            | <b>0.875250</b>                    |
| Adjusted R <sup>2</sup>   | <b>0.845804</b>                    |
| F -statistics             | <b>29.72387</b>                    |
| P-value                   | <b>0.000000</b>                    |
| Durbin Watson -statistics | <b>1.611463</b>                    |

\*\*\*, \*\* and \* are statistical significant at %1 level, %5 level and %10 level.

The coefficient of determinant also called R-squared shows the percentage of the effects on the dependent variables explained by the independent variables. The adjusted R-squared is considered a more effective result in terms of statistics. The adjusted R-squared value of the model was determined to be 84%. The Durbin Watson test examines the auto-correlation probability among the series

According to Table 3, neither of the models have an auto-correlation issue. Additionally, the F statistic shows the overall significance of the model. The model is statistically significant at 1%

level. According to the results, there is a significant relationship at the level of 1% between leverage, liquidity, efficiency and bankruptcy risk.

While intellectual capital is significant at the level of 5%, profitability is significant at the level of 10%. And there is no significant relationship for the other variables.

## 5. CONCLUSION

Numerous studies have been carried out to develop a suitable model for estimating financial distress of firms and for classifying firms according to their financial status. However, studies directly identified by the determinants of the financial failure risk remain in the minority. In this study, unlike the general literature, it was aimed to determine firm-specific factors that affect bankruptcy risk.

Within the scope of the research, a total of 79 manufacturing firms in Borsa İstanbul between the years of 2010 and 2014 were examined by applying multivariate model. Modified Altman's Z score which is the dependent variable of the model, developed by Edward I. Altman in 1983 by considering publicly traded manufacturing firms. It is assumed that the discriminant function of the relevant test is also effective in the Turkish sample. In this regard, the research sample is limited to the manufacturing industry in Borsa İstanbul.

When the results of the research are evaluated in general, the leverage increases bankruptcy risk (decreases the Z score); the variables of profitability, liquidity, efficiency and intellectual capital decrease bankruptcy risk (increase the Z score). Significant findings were not obtained for other variables.

As predicted, sustainable profitability positively affects financial success. In parallel, it has been found that profitability increases firm value and financial performance in many studies in the literature.

As might be expected, strong evidence is found that the leverage increases bankruptcy risk. This implies that firms using foreign resources are exposed to the negative financial leverage effect.

Intellectual capital represents the experience and knowledge of the firms. According to findings, it can be stated that intellectual capital reduces bankruptcy risk. Firms with high intellectual capital have a more advantageous position than their competitors.

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## BUSINESS COMMUNICATION IN AN ORGANISATION

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### ABSTRACT

*The paper deals with business communication in an organisation, stressing its importance for any type of organisation. What is meant by organisation is the association of people, i.e. employees whose goal is to fulfil certain tasks. This simple definition implies the need for business communication, which involves transmitting the message from the sender to the receiver. Organisational success depends largely on the quality of communication. The latter is built up by employees with their communication skills, which are crucial in all segments of company operations. It is important to develop these skills as they can have a significant impact on company performance. Disagreement between two or more participants can escalate into conflict. In organisations with large number of employees disagreement is to be expected. It is important to recognize conflict in time, deal with it and possibly resolve it, thus preventing negative action by participants. Proper business communication is of utmost importance also in resolving conflicts.*

**Keywords:** *organisation, communication, business communication, formal and informal communication, conflict*

### 1. INTRODUCTION

Organisation is regarded as a means to achieve company objectives, wherein employees and their goals play an important role. However, organisation is present not only in companies but also in everyday private life, although people are often not aware of it and its importance. In today's business world, effective communication is vital to organisational success. Without it, organisations would not be able to achieve any of their objectives. In general, communication is an exchange of information, ideas and feelings through verbal and non-verbal means. Thus, communication provides the basis for successful private and business relationships.

For the purpose of this paper, a survey was conducted on business communication in an organisation. The questionnaire was completed by 74 participants. The survey results are displayed in graphs and explained.

### 2. ORGANISATION

The word organisation is derived from the Greek word *organon*, which means a tool, an instrument, or a device. The term organism appeared later and means a living system consisting of mutually interdependent elements, each of which performs a specific function. It may be said that mutually interdependent elements constitute an organisation. The term organisation is a broad term that has been defined in many different ways and has taken on different meanings over time. However, there is a common thread that ties them together and that is that efficient organisation is a prerequisite for task accomplishment.



Hence, an organisation is a purposeful association of people in any area of business or private life, with an aim to fulfil certain tasks with the least possible effort and at the lowest possible cost

(<http://web.efzg.hr/dok/OIM/inacinovic/1%20i%202%20Organizacija%20i%20teorije%20organizacije.pdf>).

### **3. COMMUNICATION**

Communication is the process of exchanging information between the sender and the receiver. The word communication means to share something, and its primary goal is to lead to understanding. In general, communication is an exchange of information, ideas and feelings through verbal and non-verbal means. It is essential for all elements of our lives. Both personal and professional success often depend on effective communication, i.e. on how well we understand each other. Communication is effective when the sender of the message fully and accurately transmits his/her ideas and feelings, and the receiver interprets the message as the sender has intended. Communication can sometimes be ineffective, which depends on a number of factors. Words can be misinterpreted, i.e. interpreted differently from what the sender intended (Reardon, 1998, p. 13).

### **4. BUSINESS COMMUNICATION IN AN ORGANISATION**

Communication is an important part of any type of organisation, operations and management system. The communication system includes transmitting messages, sharing information, issuing and receiving orders, contacts between business partners, and the like.

Specifically, business communication is the exchange of information between participants in a business process, the purpose of which is to improve performance. In order for a society, a community, an organisation or a company to function, relationships and rules need to be established and followed. The quality and effectiveness of relationships in a specific context depend on many factors, the most important of which is good communication within a specific context. Communication is a reflection of an organisation and can lead to its success or failure (Hunjet, Kozina, 2014, p. 83). Effective communication between people within as well as outside an organisation improves performance, and thus increases profit which is the goal of all organisations. Courtesy, accuracy and timeliness are some of the qualities that contribute to a positive experience, while a sloppy business letter or incorrect information leave a negative impression. Effective communication is essential at different levels of an organisation and in all of its aspects, including supervisor - employee relationship, employee motivation and morale, employee performance, etc

(<https://zeljkaa.files.wordpress.com/2010/06/poslovno-komuniciranje1.doc>).

#### **4.1. Formal and informal communication**

Formal communication is pre-determined and planned by the organisation itself and takes place according to pre-defined rules. It implies consistent communication in a precisely defined way, which every employee must accept and follow. Formal communication can be divided into vertical and horizontal communication (Rouse, M. J., Rouse, S., 2005, p. 27).

Horizontal communication refers to communication in an organisation that takes place between members of equal standing in a work group, for example, between employees. Vertical communication refers to communication between the leaders and their superiors and subordinates, and includes orders and instructions, information and explanations related to work assignments (Fox, 2006, p. 42).

Informal communication in an organisation is not formalized. It occurs between the members of an organisation belonging to different groups. One of the characteristics of informal communication is its great speed.

Informal communication also takes place between socializing employees, or a group of employees sharing common interests. This type of communication is wide-reaching, but its downside is that the information can get distorted and may become a rumour.

#### **4.2. Types of business communication**

Business communication primarily refers to verbal and written communication. However, a big part of business communication is non-verbal. Verbal and non-verbal communication are often combined in a business setting. Business communication can be divided into:

- verbal business communications,
- written business communication,
- non-verbal business communication,
- electronic business communication (Lamza-Maronić, Glavaš, 2008, p. 22).

##### **4.2.1. Verbal business communication**

Verbal communication is a type of communication in which the main code is the spoken word. It is the most common method of transmitting information or messages in an organisation. This form of communication is used to transmit ideas, thoughts, attitudes, and the like through language, which is the most important means of communication. The effectiveness of verbal communication depends on the recipient and the sender of the message, i.e. a correct interpretation of the message. The most important advantage of verbal communication is its great speed. In a conversation, the interlocutors exchange messages quickly, and the message sender receives feedback almost instantly. The main disadvantage of verbal communication is that it does not leave a permanent record, and therefore the message generally has to be confirmed in writing. One of the negative sides of verbal communication is the fact that people often do not think the message through before they send it. Verbal communication is susceptible to noise, i.e. interference that may occur during communication (Rouse, M. J., Rouse, S., 2005, p. 46).

##### **4.2.2. Written business communication**

Written communication is planned in advance and requires a certain effort. The downside of written communication is that it is slower than verbal communication. Its main advantage is that it leaves a permanent record. The choice between verbal and written communication depends on the importance of information, i.e. more important pieces of information need to be transmitted in writing. Given that writing enables one to plan the message as well as one wishes to ahead of transmitting it, this type of communication is used for sending high-quality messages. A business letter is the most frequently used form of written business communication. It is usually addressed to one business partner, but it can be addressed to several addressees

(<http://www.kvalis.com/o-portalu/item/118-pisano-poslovno-komuniciranje>).

##### **4.2.3. Non-verbal business communication**

Non-verbal communication is the intentional or unintentional communication without using words. This type of communication enhances verbal communication. In business, non-verbal communication is any form of communication that is not written or verbal. Decoding non-verbal signals requires knowing the source of communication and the context. In a business environment, non-verbal communication has considerable significance. It includes emotions, posture, facial expression and eye contact, vocal characteristics, physical appearance and space, all of which can affect a business decision

([http://marul.ffst.hr/~dhren/nastava/komunikacija/seminari\\_2012/Sem\\_5.pdf](http://marul.ffst.hr/~dhren/nastava/komunikacija/seminari_2012/Sem_5.pdf)).

#### **4.2.4. Electronic business communication**

Recent years have seen an increase in the use of electronic technology, which is based on the use of computers. As a result of technological development, the concept of time and space has changed. This type of communication is easy and inexpensive. Moreover, it enables long-distance communication and immediate feedback. Nowadays this method of communication is essential in most organisations. Some of the forms of electronic communication are the World Wide Web, e-mail, text messaging, video conferencing, and informal electronic communication using Web Notes. E-mail is the most-frequently used service in organisations. Its transmission is quick and easy, and the speed of transmission does not depend on the distance (Lamza-Maronić, Glavaš, 2008, p. 31).

#### **4.3. Principles of effective communication**

The outcome of a business activity depends largely on business communication skills, in particular in business negotiations. Hence, the success of a company depends largely on the quality of communication. However, if not done properly, business communication can also have negative effects. Good communication skills are profit drivers. In other words, business communication can make or break a company. The principles of effective business communication are as follows:

- The principle of clarity – clarity is achieved by using clear sentences, avoiding words others may not be familiar with, and conveying thoughts in their entirety;
- The principle of brevity – brevity is achieved by reducing the number of messages or pieces of information intended for the recipient;
- The principle of limited content – it is necessary to stick to the topic of conversation as your interlocutors expect you to do;
- The principle of accuracy - information needs to be checked before it is sent; information that has not been checked and is not safe must not be conveyed;
- The principle of design - it is important to choose the right form of communication for a business setting (Lamza-Maronić, Glavaš, 2008, p. 21).

#### **4.4. Conflicts and communication**

A conflict is a situation involving two or more parties that disagree about their goals, desires and interests. Bearing in mind that organisations consist of people with different personalities who may have different views about how to achieve the set goals. When different personalities and behaviours come in contact, there is a possibility of disagreement, tension and open conflict. It is very important to resolve conflicts, so as to prevent them from causing major problems in business which could lower employee motivation and negatively affect their satisfaction, and potentially also lead to poor communication and consequently a drop in employee productivity. The causes of conflicts can be a difference of opinion, conflicting interests, personality traits, lack of or poor communication, and structural problems (Lamza-Maronić, Glavaš, 2008, p. 59). Generally, nothing destroys communication as effectively as letting one's emotions govern your behaviour. Emotions distort reality and can cloud one's judgement (Miljković, Rijavec, 2002, p. 34-35).

### **5. SURVEY ON BUSINESS COMMUNICATION IN AN ORGANISATION**

The aim of the research is to determine which types of communication are used most frequently in an organisation, and whether they affect the success of a business. For the purpose of this research, a survey was conducted using Google Forms questionnaire which consisted of 17 questions about communication within and outside an organisation. The questionnaire contained a mixture of closed-ended and open-ended questions. The respondents were asked to choose one from several answers offered, or to rate their opinion on a 5-point Likert scale.

The first section of the questionnaire contains general questions about age, gender and education level; the second section pertains to business communication and its importance within an organisation, as well as communication outside an organisation. The third section of the survey contains questions regarding conflicts and conflict resolution in an organisation. The survey was conducted via social networks and e-mail. The collected data are presented below. The data are displayed graphically and explained (Sušec, 2017, p. 37-38).

### 5.1. Research hypotheses

Based on the set goals of the research and the sources of the data collected, as well as the data collection method, the following hypotheses are proposed.

H1: Proper communication affects the success of a business

H2: Communication between employees within an organisation is mainly verbal

H3: Non-verbal communication affects business success

### 5.2. Survey results

The questionnaire about business communication was completed by 74 respondents. The results of the survey are presented below.

#### 1. Sex

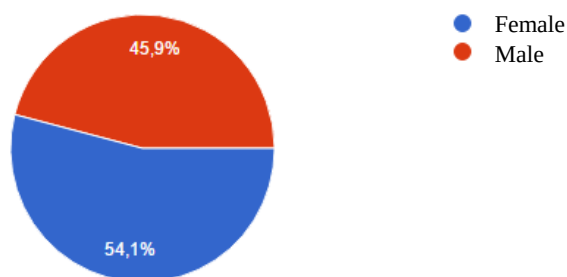


Figure 1: Sex distribution

Source: Authors' interpretation of the data

54.1% of the participants surveyed about business communication within an organisation are female and 45.9% are male.

#### 2. Age groups

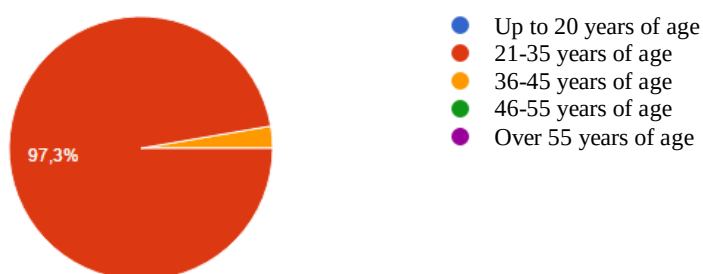


Figure 2: Age distribution

Source: Authors' interpretation of the data

The analysis of the age distribution has revealed that the majority of respondents are aged between 21 and 35 years (97.3%), while 2.7% are aged between 36 and 45 years.

### 3. Education level

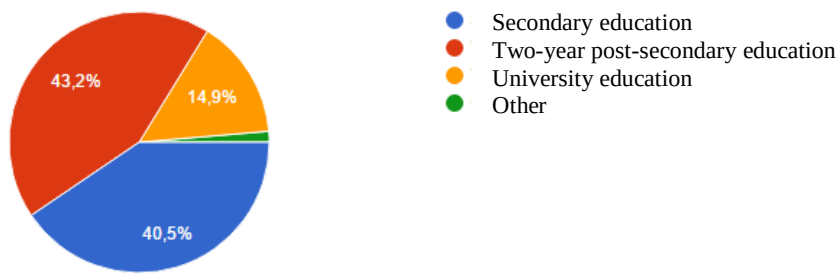


Figure 3: Education level distribution

Source: Authors' interpretation of the data

43.2% of the respondents have completed two-year post-secondary education; 40.5% have completed secondary education and 14.9% have a university degree.

### 4. Is communication important for business success?

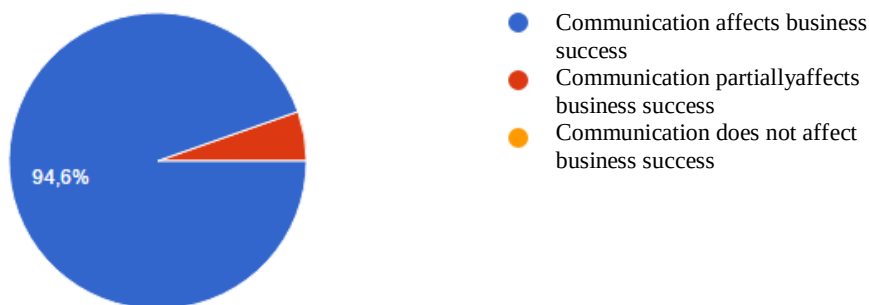


Figure 4: Distribution by the extent to which communication affects the success of a business

Source: Authors' interpretation of the data

When asked whether communication is important for business success, 94.6% of the respondents answered positively. Only 5.4% of the respondents find that communication partially affects business success.

### 5. Which type of communication do you use most often within your organisation?

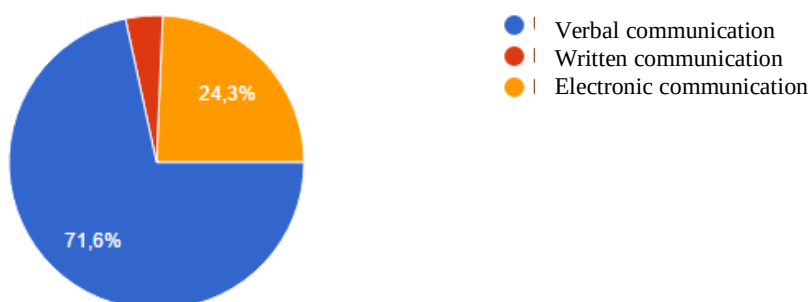


Figure 5: Distribution by the type of communication used within an organisation

Source: Authors' interpretation of the data

71.6% of the respondents mainly use verbal communication within their organisations. 24.3% of the respondents report that electronic communication is the most common form of communication within their organisations. Only 4.1% of respondents mainly use written communication in the workplace.

6. Which type of communication do you use most often for business communication outside your organisation?

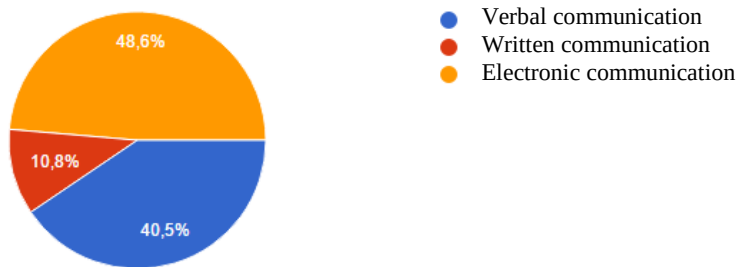


Figure 6: Distribution by the type of communication used outside an organisation  
Source: Authors' interpretation of the data

Electronic communication for business purposes outside their organisations is used by 48.6% of the respondents. Verbal communication for business outside their organisations is used by 40.5% of the respondents. Written communication for business outside their organisations is used by 10.8% of the respondents.

7. How often do you use electronic communication for business?

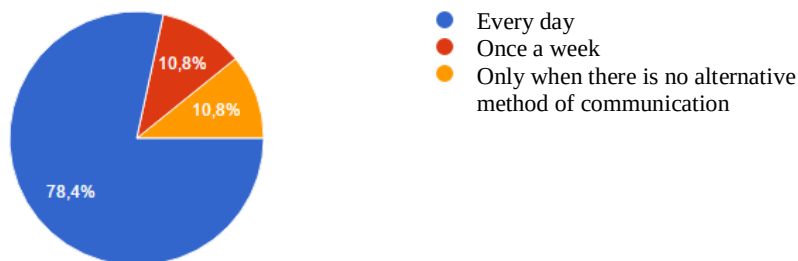


Figure 7: Distribution by frequency of use of electronic communication  
Source: Authors' interpretation of the data

When asked how often they used electronic communication for business purposes, 78.4% of the respondents reported using it every day. Electronic communication is used once a week by 10.8% of the respondents, while 10.8% of the respondents reported using it only when there was no alternative method of communication.

8. Do you use emoticons in electronic business communication?

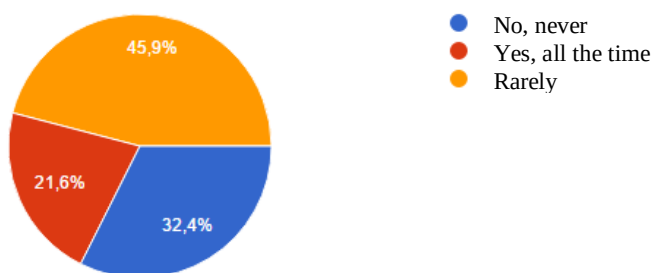


Figure 8: Distribution by frequency of use of emoticons in business communication  
Source: Authors' interpretation of the data

45.9% of the respondents rarely use emoticons in business communication; 32.4% report not using them, while 21.6% of the respondents use them all the time.

9. Does non-verbal communication affect business success?

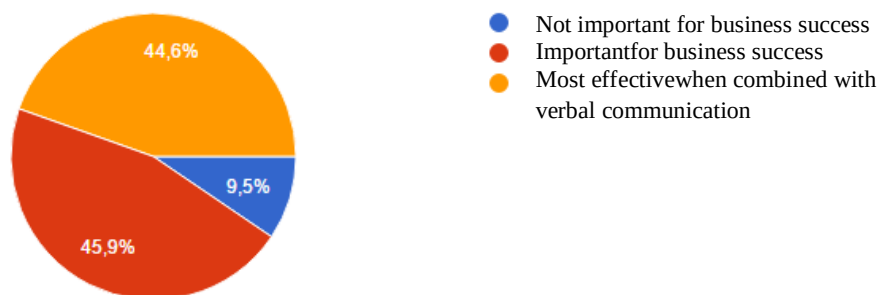


Figure 9: Distribution by the extent of impact of non-verbal communication on business success  
Source: Authors' interpretation of the data

45.9% of the respondents are of the opinion that non-verbal communication does affect business success. 44.6% of find that non-verbal communication is most effective when combined with verbal communication, while 9.5% of the respondents believe that non-verbal communication does not have an impact on business success.

10. Do you pay attention to body language in a business environment?

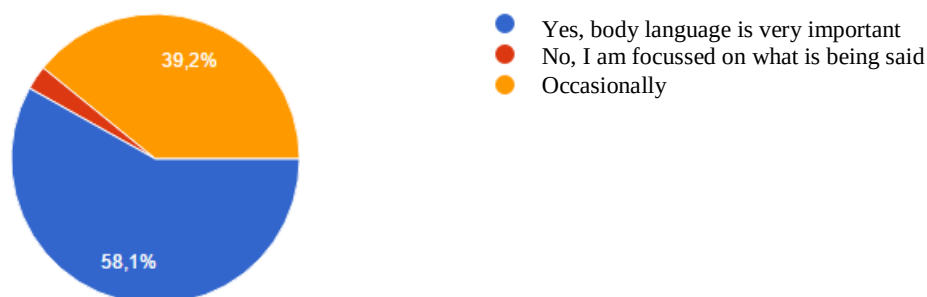


Figure 10: Attention to body language  
Source: Authors' interpretation of the data

58.1% of the respondents pay attention to body language in a business environment, while 39.2% pay attention to body language occasionally. The remaining 2.7% of the respondents focus only on what is being said.

11. Rate the importance of verbal communication in business.

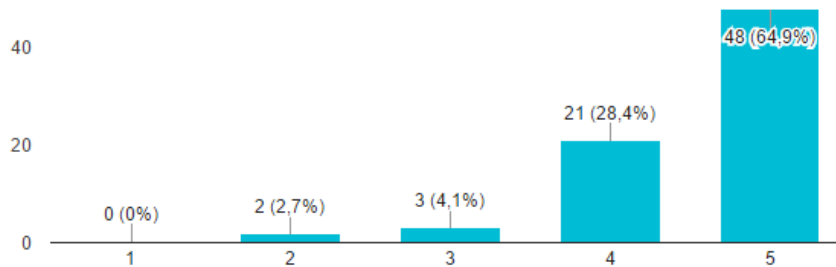


Figure 11: The importance of verbal communication in business  
Source: Authors' interpretation of the data

The respondents were asked to rate their answers on a 5-point Likert scale where 1 = not important at all; 2 = slightly important; 3 = fairly important; 4 = important; and 5 = very important. 64.9% of the respondents believe that communication in business is very important. The remaining 28.4% find it less important.

12. Rate the importance of written communication in business.

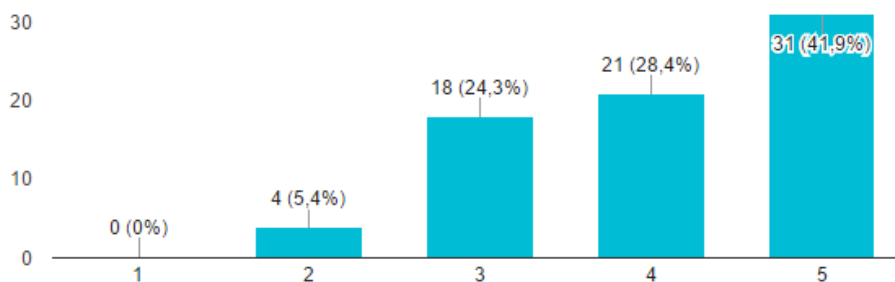


Figure 12: The importance of written communication in business  
Source: Authors' interpretation of the data

41.9% of the respondents believe that written communication in business is very important; 28.4% of the respondents believe that written communication is important; 24.3% are of the opinion that it is fairly important and 5.4% of respondents think that it is slightly important.



13. Rate the importance of electronic communication in business.

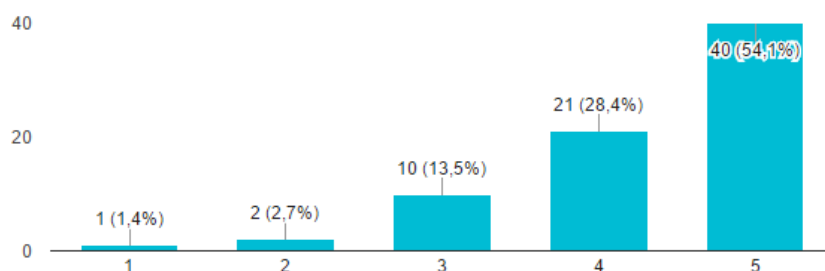


Figure 13: The importance of electronic communication in business

Source: Authors' interpretation of the data

54.1% of the respondents are of the opinion that electronic communication in business is very important. 28.4% of them find it important; 13.5% believe that it is fairly important and 2.7% think that it is slightly important, while 1.4% of the respondents believe that electronic communication in business is not important at all.

14. Rate the importance of non-verbal communication in business.

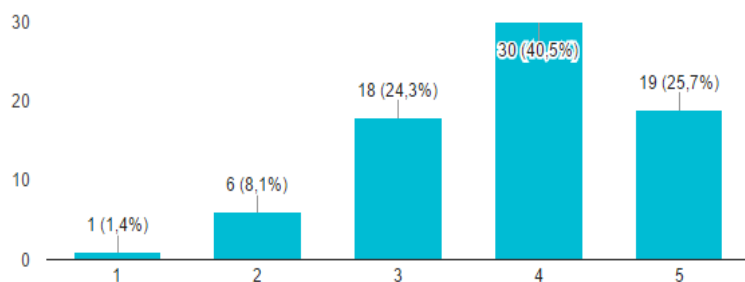


Figure 14: The importance of non-verbal communication in business

Source: Authors' interpretation of the data

25.7% of the respondents consider non-verbal communication in business very important; 40.5% think that it is important; 24.3% find it fairly important; 8.1% think it is slightly important, while 1.4% of the respondents believe that it is not important at all.

15. Do conflicts occur in your organisation?

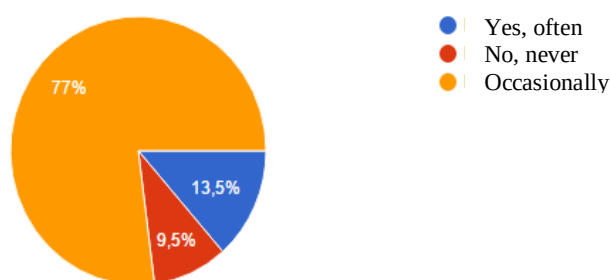


Figure 15: Conflict occurrence in an organisation

Source: Authors' interpretation of the data

When asked whether conflicts occurred in their organisations, 77% of the respondents said that conflicts occurred occasionally; 13.5% of the respondents reported that conflicts occurred often, while 9.5% of them responded that there were no conflicts in their organisations.

#### 16. What leads to conflicts in your organisation?

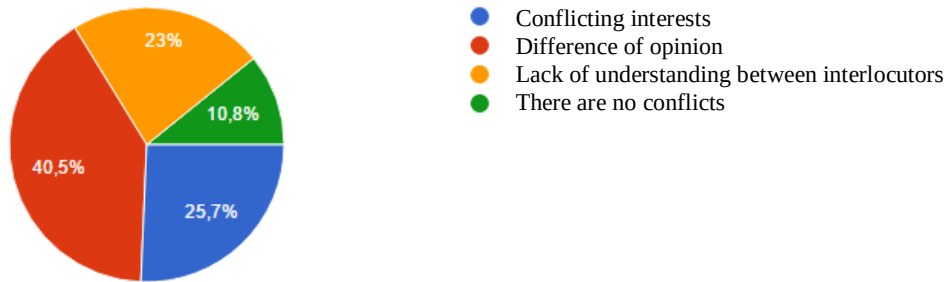


Figure 16: Causes of conflict in an organisation

Source: Authors' interpretation of the data

40.5% of the respondents believe that conflicts occur in their organisations due to difference of opinions. 25.7% think that conflicts occur due to different interests and 23% report they occur due to the lack of understanding between interlocutors, while 10.8% responded that there were no conflicts in their organisations.

#### 17. How do you resolve conflicts?

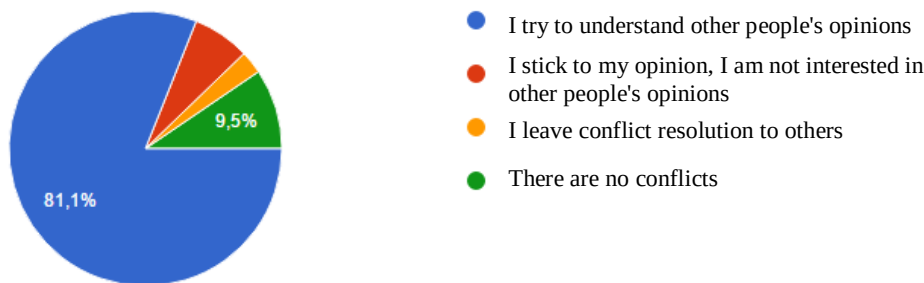


Figure 17: Conflict resolution methods

Source: Authors' interpretation of the data

81.1% of the respondents will try to understand other people's opinions; 9.5% of them answered that there were no conflicts in their organisations. 6.8% stick to their opinions and are not interested in the opinions of others, while 2.6% of the respondents leave conflict resolution to others.

### 5.3. Analysis of the hypotheses

H1: Proper communication affects the success of a business

H1 is accepted as the survey results show that 94.6% of the respondents believe that communication affects business success. Although the majority of the respondents surveyed are aged between 21 and 35 years, it is clear that they are aware of the importance of communication in business. This is positive because effective communication requires that individuals look to themselves first and develop their own communication skills. Furthermore, the results show that most respondents, regardless of their education level, believe that communication affects the success of a business.

H2: Communication between employees within an organisation is mainly verbal

H2 is accepted because the majority of the participants of the survey (71.6%) mainly use verbal communication. This is to be expected because in smaller organisations this type of communication is often the fastest and easiest. A small percentage of the respondents use

written and electronic communication, which is understandable in larger organisations where verbal communication is not possible and it is easier to use other types of communication.

H3: Non-verbal communication affects business success

H3 is accepted as 45.9% of the respondents believe that non-verbal communication is important for business success. It is evident that the respondents are also aware that non-verbal communication can provide additional meaning, if correctly interpreted. A somewhat smaller number of the respondents believe that non-verbal communication is most effective when combined with verbal communication, and only a small percentage of respondents believe that non-verbal communication is not important for business success.

## 6. CONCLUSION

Communication is crucial in all segments of company operations, as well as in everyday life. Without good communication skills, we would often be unable to achieve our own goals. Thus, developing communication skills is very important for individuals wishing to succeed in business and life. Communication is extremely important for organisations, their success, competitive advantage, as well as their overall performance. The success of an organisation depends largely on effective communication between its members. Communication skills can help employees become successful both within and outside the workplace. In addition to having good communication skills, choosing a proper communication channel is also important. Good communication is essential for a group of people working on joint projects. The goal of effective business communication is the transmission of information, messages and experiences.

The aim of the research is to determine which type of communication is most commonly used in today's business environment, and the extent to which communication is important for business success. It was determined that the most common type of communication used within organisations is verbal communication. According to the survey results, the most common type of communication outside organisations is electronic communication.

Communication and organisation are closely related, because without timely and proper communication it would not be possible for an organisation to operate or achieve its objectives. The management of an organisation is responsible for creating a good working atmosphere and facilitating effective communication. Effective communication provides the basis for creating a constructive working atmosphere, successful fulfilment of tasks and goals of an organisation.

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## A NATURAL RESOURCE-BASED VIEW OF THE FIRM: RESOURCE-BASED ANALYSIS

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### ABSTRACT

*Due to increasing environmental challenges and rising concern for environmental protection, companies have experienced a shifting focus toward sustainable development. This paper describes the concept of corporate environmentalism and a natural resource-based view of the firm. The purpose of this paper is to explain resource-based analysis from the environmental point of view. Within resource-based analysis, the environmental impact of firm's assets such as physical, human, financial, information, organizational, and reputational is explained. Furthermore, the role of firm's capabilities in achieving environmental protection is described as they have a crucial influence on the possibility to reduce negative and to create positive impact of the firm on the environment. The conduction of resource-based analysis enables the firm to determine the main areas for improvement in environmental protection. The paper emphasizes the need for integration of activities across organizational departments and organizational boundaries through the whole supply chain. Furthermore, the paper present the methods of assessment of environmental strength and weaknesses based on Balanced Scorecard framework.*

**Keywords:** *corporate environmentalism, natural resource-based analysis*

### 1. INTRODUCTION

In the past we have witnessed many environmental problems such as water, air and soil pollution, resource depletion, energy consumption, waste creation, climate change, ozone depletion, reduced biological diversity, noise creation, increased poverty etc. In early 1960s, environmental scientists have recognized some of these problems as consequences of irresponsible economic activities, but business leaders and policy makers ignored it and persisted on their existing practice to achieve growth objectives. These years, environmental protection has been perceived as a burden that raises costs without adding value. Over the last few decades there was a development of dialogue between previously opposed parties with significant shift toward responsible, more holistic approach toward environment. Progress in understanding the interrelationship between human activities and the environment has achieved, the methods for identifying and measuring the pollution have become more sophisticated and 'green' technologies have evolved. At the same time, the idea of sustainability has been developed. Sustainability refers to development and growth within the carrying capacity of the ecosystem. It includes simultaneous achievement of socio-cultural, economic, and environmental impacts. Sustainable development can be defined as 'a living and working in such a way that human society will be possible for next generations – and translating that into the changes of an individual organizations – changes that maintain the organization's capacity for producing human benefits, including the profitability needed for survival, while optimising the environmental impact of its operations' (Crosbie and Knight, 1995). Hence, many activities that have previously been considered as normal business operations are not acceptable anymore and firms have to face challenge to achieve sustainable development by improving economic, environmental and social performance. Furthermore, many companies realized that sustainable strategy can help them to create competitive advantage.

## 2. CORPORATE ENVIRONMENTALISM

In the last decades environmental concern has become unavoidable feature in management theory and practice. It has become the most popular topics in research of corporate social responsibility (Locket *et al.*, 2006). The common research topics in this area are: corporate environmental management, environmental strategy, environmental competitive advantage, connection between environmental performance and competitiveness, connection between environmental protection and firm's performance etc.

The term of corporate environmentalism was originally introduced in Western countries and refers to 'corporate concept of environmentalism' (Brown *et al.*, 1993) or 'firm greening' (Branzei *et al.*, 2001). Gupta (1995) states that corporate environmentalism includes programs and practices such as environmental policy, environmental strategy, environmental staff functions, pollution prevention and environmental measures. According to many scholars, early literature that refers to corporate environmentalism has certain insufficiencies: it is exploratory, in introductory stage (Roberts, 1992; Statik and Marcus, 2000) and based on insufficient theoretical guidelines to connect research on environmental protection and organizational theories (Sharma and Aragon-Corea, 2005). Fragmented academic theories on this topic are grounded on different theoretical disciplines with few coherent theories on corporate environmentalism (Man, 2010). Banarjee (2002) is assumed to be one of the first researchers who put formal construct of corporate environmentalism (López -Gamero *et al.* 2009) and many recent scholars use Banerjee's framework to study the relationship between biophysical environment and corporate strategy (Mengue & Ozanne, 2005; Chan, 2009). Banarjee (2002) defines corporate environmentalism as 'the recognition of the importance of environmental issues facing the firm and the integration of those issues into the firm's strategic plans'. He recognizes two research areas of corporate environmentalism: environmental orientation and environmental strategy.

Corporate environmental strategy refers to firm's strategy to manage the interface between it's business and natural environment (Aragon-Corea and Sharma, 2003) and reflects the degree to which environmental issues are integrated into firm's strategic planning process (Banerjee, 2002). Corporate environmental strategy includes decision about integrating environmental concern in product development, technology, R&D and design, new business, plant location (Banerjee, 2002; Man, 2010), improving environmental well-being of society (Chan, 2010).

Based on a broad investigation of existing studies in corporate environmentalism, Kudlak (2013) concludes that the main question is not if firms can profit from environmental performance improvement but which companies and under what conditions (endogenous and exogenous) are more likely to profit from environmentally responsible activities (where endogenous conditions refer to a firm's resources and capabilities that allow it to recognise opportunities, threats, and implement a successful strategy whereby exogenous conditions are the competition framework such as the market structure, type of competition, elasticity of demand etc.).

## 3. A NATURAL RESOURCE-BASED VIEW

A natural resource-based view of the firm is one of the strategic management perspectives to analyse corporate environmentalism. It has been developed from a resource-based view of the firm. The resource-based view assumes that the firm consists of interdependent resources and capabilities that are the key for competitive success as they create the base for developing strategy. In other words, competitive advantage of the firm is determined by its resources that,

under certain circumstances, can generate superior long-term performance (Barney, 1991). To help in creating sustainable competitive advantage, resources must have specific characteristics that are generally systemized as: valuable, rare, appropriable, difficult to imitate, durable, not substitutable, imperfectly mobile. According to resource-based scholars, resources include assets and capabilities that create firm's competences. Different scholars give different systematization of assets but they are mainly grouped into physical, financial, human, organizational and reputational. Capabilities are skills the firm needs in order to fully exploit its assets. Capabilities are the integrative capacity of performing certain tasks or activities by the set of resources and to produce results. Competencies depend on a resource combination and capabilities to use these resources – they are created by the combination of assets and capabilities. Prahalad and Hamel (1990) introduced the concept of the core competence as 'a harmonized combination of multiple resources and skills that distinguish a firm in the marketplace'. The core competence is the collection of special and unique capabilities of a firm that allow the firm to differ and to be better than its competitors. The core competences are complexes of knowledge, skills and technologies that can be seen in business processes and provide superior coordination of business activities and use of resources (Day, 1994).

To extend the resource-based view and overcome its relatively static nature, a theory of dynamic capabilities has been developed. The concept of dynamic capabilities analyses the sources and methods of creating value in a turbulent business environment characterized by rapid technological changes. Teece *et al.* (1997) was the first who defined dynamic capabilities as the firm's abilities to integrate, build and reconfigure internal and external resources to address rapidly changing environments. According to recent definitions, dynamic capabilities are firm's abilities to change its resource base to find opportunities and to cope with threats to increase competitiveness (Teece, 2007; Barreto, 2010). This theory emphasizes the importance of further development of capabilities. If the firm neglects the development of competencies, competitors can become better which makes firm's competences obsolete. In that case, core competencies can become core barriers that prevent firm to achieve strategic objectives. Grant (1996) states that the most important role of management is to increase value through the development of existing resources as well as the investment in the development and creation of new resource base for the future business. Linking companies for the purpose of mutual synergistic development of resources and competence can be particularly useful in modern dynamic business conditions.

In the past, management theory hasn't considered the aspects of the natural environment. The concept of environment has included only political, legal, economic, social, technological and cultural aspects. Because of this lack and the exclusion of natural processes, the theory was inadequate to identify newly emerging important source of competitive advantage. Hart (1995) has introduced natural resource-based view of the firm (NRBW) arguing that firm should include natural environment in strategy making process and that competitive advantage can be developed by positive influence of the firm on natural environment. He agrees that resources should be valuable, rare, difficult to imitate and indispensable to help in creating sustained competitive advantage. Many researchers have accepted natural resource-based view as their research framework and analyse competitive advantage based on environmental management.

#### **4. NATURAL RESOURCE-BASED ANALYSIS**

In the analysis of the resource based on environmental aspect, it is important to determine environmental impact of the resources (assets and capabilities) i.e. which resources have a direct impact on environmental performance and which resources influence indirectly. The aim is to decrease negative impact and to create positive impact of resources.

Concerning physical assets, the firm should determine which resource usage (raw materials, water, land etc.) causes natural resource depletion and should examine the possibility of alternative resource usage (recycled, reused) or reduction of resource usage. The firm should analyse if it can use: energy-efficient and greenhouse friendly products; water efficient products; less toxic products; products using less packaging or with a provision for packaging take-back; products that use fewer resources or in other ways create reduced environmental impacts throughout their life cycle; products made from recycled materials etc. (UNDP, 2008). Furthermore, the firm should determine the type of energy used in business processes and the possibility of alternative 'cleaner' energy use. It is important to analyse the characteristics of the equipment, facilities, distribution and transport network in terms of environmental impact, whether negative impact can be reduced and how? Hardware, database, telephone, cable, satellite networks mostly don't have a direct impact on the environment, but can help in collecting, analysing and presenting relevant information needed for handling environmental issues. Financial assets don't have a direct impact on the environment, but can create base for financial investments necessary to improve environmental protection. Regarding human resources, the firm should analyse the level of environmental values among employees, their knowledge and skills in environmental protection and their motivation. The aim is to create values, attitudes and norms that respect the environment and to develop the knowledge, skills and creativity needed for improving environmental performance. Particularly important is the commitment of the management team because it gives guidance and example to other employees. The firm should analyse organizational culture, system and structure that should be oriented toward achieving all organizational goals including the environmental goals. Reputation is a source and a result of environmental concern. Hence, increased environmental protection helps the firm to achieve the reputation of environmentally responsible corporate citizen, while the good image focuses company toward a better environmental protection to sustain desirable reputation in the future.

Capabilities of the firm have a crucial influence on the possibility to reduce negative impact on the environment and to create positive. According to some scholars, firm's environmental 'proactivism' leads to the creation of some valuable and imperfectly imitable organisational capabilities that can create a competitive advantage (Kudlak, 2013). Among various capabilities in environmental protection, scholars emphasize the importance of innovation capabilities that help the firm to obtain benefits such as productivity increase, cost reduction, environmental improvement (Etzion, 2007; Sharma *et al.*; 2007, Christmann, 2000). Additionally, theorists explain the importance of information capabilities referred as 'acquisition, identification, exploitation and dissemination of information about environmental issues' (Morgan *et al.* 2004; Benitez-Amado and Waczuch, 2012). Besides information capabilities, Kaleka (2002) emphasizes product development capability and the capability of implementing new systems and ideas in manufacturing that are base for creating environmental competitive advantage. Bansal (2005) explains the importance of competences achieved through international experience. Furthermore, the possession of integration capabilities is important for enhancing environmental protection. Prašnikar *et al.* (2012) states that 'a connection between production and marketing function is related to the idea of complementary capabilities and competences'. Beside the integration across business functions, environmental consideration should be integrated across organizational departments and organizational boundaries (Hart, 1995; Shi *et al.*, 2010) that allows coordination of activities and sharing of information, skills and knowledge. The value of the dynamic environmental capabilities can steam from the collaboration in supply chain networks which entails inter-organizational learning, a problem solving routine connecting the focal firm with its suppliers and/or customers (Vachon and

Klassen, 2008). Furthermore, the advantage can be created by 'collaborative relationships with a wide variety of stakeholders, including those with non-economic goals' (Sharma and Vredenburg, 1998) which helps build a firm's legitimacy to cope with uncertainty in its business environment (Hart and Dowell, 2011). Empirical research (Bloome and Paulraj, 2013) showed that firms need to develop complex internal capabilities in order to be able to benefit from sustainability cooperation within the supply chain, regarding market performance and environmental performance.

Nevertheless, the development of the other capabilities shouldn't be neglected. The combination of production, technological, procurement, marketing and communication skills, strategic management capabilities, adaptability to change etc. can form environmental core competencies that are important for the creating environmental competitive advantage. Hence, the firm has to determine which capabilities are the key for environmental strategy success and need to be developed for environmental competitiveness.

## **5. METHODS OF IDENTIFICATION THE ENVIRONMENTAL STRENGTHS AND WEAKNESSES**

Assessment of firm's strengths and weaknesses can be made from different perspectives. Kaplan and Norton (1992) introduced Balanced Scorecard approach where the main perspectives for measuring performance are: financial perspective, customer perspective, business process perspective and learning and growth perspective. Stakeholder theorists argue that Balanced Scorecard should include additional perspectives such as supplier perspective, employee perspective and community perspective. Kaplan (2010) considers these critics but emphasized that employee objectives appear in the learning and growth perspective while supplier and community objectives are included in process perspective objectives if it is essential for the strategy. In Balanced Scorecard, performance in one perspective should be considered simultaneously with performance in others. Balanced Scorecard concept has been primarily developed as a tool for transforming the vision and strategy of a firm into measurable business objectives and for measuring performance of a firm, but it can be used as a frame for the assessment of firm's strengths and weaknesses.

From the financial perspective, the question is whether the firm with improved environmental protection can create economic value added and achieve financial return higher than overall costs. If yes, this indicates strength of the firm. Furthermore, the higher the value of eco-efficiency (profit/environmental costs) the stronger are resources of the firm. From the customer perspective, the firm has the strength if it can innovate environmental value in overall product/service value, offer higher environmental quality at reasonable price that customers want. In the case of differentiation competitive advantage of a firm, customers additionally want availability, ease and speed of purchase, functionality, relationship and service while in the case of value innovation competitive advantage of a firm, customers seek for superior products/services in comparison to product/services of competitors (Kaplan, 2010). According to a business process perspective, the firm has the strength depending on: the effectiveness and efficiency of core processes in creating environmental value; finding most important sources of this value and strengthen it; the successful cooperation with suppliers in achieving better environmental concern etc. According to learning and growth perspective, strength exist if the firm can adapt to environmental requirements by knowledge creation, learning and growth, in which employees participate actively, if it can focus on the pollution prevention, rather than clean-up and if it can focus on development of environmentally friendly, sustainable products/services and technologies etc.



Assessment of strength and weaknesses may have different standard of comparison. The base for comparisons can be: industry norms, company history, examples of best practice (benchmarking) and best available techniques (BAT). Industry norms provide the basis for a realistic comparison, but it should not be used as isolated guide for the assessment. If the industry has strategic groups, the firm can compare with the strategic group it belongs, not only with the industry as a whole. Furthermore, the firm can compare with previous experience in relation to present situation. Comparison of current and past environmental performance may be a good way to determine firm's strength and weaknesses. Firms are often focused to make improvement as it is one of requirements in environmental management system according to ISO 14001 certification. However, a comparison in relation to past performance is not sufficient because customers primarily compare competitors, and then improvement over the past. Additionally, the firm may find examples of best environmental practice in other companies in order to compare, learn, and improve its environmental practice. The best examples can be sought not only within the industry in which the company operate, but in other industries as well. Benchmarking helps the firm to reconsider the ways of performing its tasks that influence on environmental performance. During benchmarking, the firm can learn how to reduce environmental costs and failures, improve the results in environmental protection quality and change activities in order to develop better practice. Often the main benefit of benchmarking is to determine the qualitative difference in approach between firms and less in detailed comparisons of environmental performance. Very popular base for comparison is the best available techniques – (best available technology - BAT). The best available technique is the 'most effective and advanced stage in the development of activities and their methods of operation which indicates their practical suitability for providing the basis for emission limit values and other permit conditions designed to reduce an emission and its impact on the environment as a whole' (EPA Act, 1992). BAT can be implemented under economically and technically sustainable conditions, which considers the costs and advantages. The comparison of firm's technology with the most effective techniques in environmental protection is a very good base of determine operative environmental strengths and weaknesses but it is limited to technology comparison. Each of described bases of comparison has certain advantages and limits, so it is the recommended to use them in combination.

## 6. CONCLUSION

In turbulent environment with intensified competition, opportunities of being environmental responsible by creating environmental strategy could be valuable source of advantage. Numerous benefits of 'going green', such as possibilities for efficiency improvement and cost savings, developing environmentally friendly products, demonstrating new and clean technologies, controlling the risk, increasing customer satisfaction, creating desirable image etc., are reasons why the topic of corporate environmentalism has become an interesting research area. But, the findings from the literature review show that corporate environmentalism is based on different theoretical disciplines still with insufficient coherency so there is a need for further studies in this area.

This paper address the concept of natural resource-based analysis. The natural resource-based analysis includes analysis of not only physical assets that usually have direct environmental impact, but human, financial, information, organizational and reputational assets as well, that may have direct and indirect impact. The aim is to determine types of negative environmental impact and types of positive environmental impacts created by firm's assets. The firm should understand the nature of negative environmental impacts and why they are created which gives insight into the main environmental problems. It helps focusing on the main area for improvement and finding solutions. Besides assets, the capabilities have a crucial influence on

the possibility to reduce negative environmental impact and to create positive. Within resource-based analysis, the firm has to determine environmental capabilities that present main strength and capabilities that create weaknesses, aiming to sustain strength and neutralize weaknesses. Among various capabilities that help in improving environmental protection, scholars emphasize the importance of innovation capabilities, information capabilities, integration capabilities, product and process development capabilities, capabilities from international experience etc. The firm has to determine what are the key capabilities need to be developed for achieving environmental competitive advantage. Environmental competitive advantage is usually based not only on one resource or capability but their combination and integration that is unique for the particular firm. The results of the natural resource-based analysis are the base for finding a way to redesign processes, to substitute some inputs, to develop environmentally friendly products/services or technologies which enhances corporate efficiency and sustainability.

Although Balanced Scorecard (BSC) was originally developed as an enhanced performance measurement system, it can be used as a diagnostic system and interactive system for strategy execution. This paper presents assessment of the firm's environmental strength and weaknesses based on BCS framework with multiple perspectives. Besides financial metrics, BCS includes customer metrics, process metrics and learning and growth metrics that serve as drivers for sustaining long-term value creation. The firms oriented to corporate social responsibility can use Balanced Scorecard to articulate their strategy that attempts to simultaneously create economic, environmental and social value and to balance among them (Kaplan, 2010). The firm can compare itself with the industry norms or past performance, but a better base for comparison are examples of the best practice or the best available technologies. It should be noticed that assessment based on the best available technology approach is limited to technology comparison while other ways of assessment allow wider comparison.

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## EDUCATIONAL ASPECT OF ADVERTISING FROM PERCEPTION OF FUTURE MARKETING EXPERTS

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### ABSTRACT

*From the perspective of education, the influence of media and marketing communication has its consequences at the social and psychological level, whereby the direct and indirect influence of the environment on human development was proven at the level of a paradigm. In several of our previous research projects, we focused on the advancement of contemporary theory of social responsibility to the level of social responsibility of marketing messages, which in addition to initial commercial purposes also support the personal development of the recipient of communication.*

*In the presented study, we focus on the analysis of perception of this issue by future creators of adverfacts and marketing experts. From the educational perspective, we identify two core areas of the socially responsible education by means of marketing messages (1) and commercial education by means of adverfacts (2), which we interconnect with the revised Bloom's Taxonomy. The pedagogical and socialization aspect of adverfacts is interconnected with the KESMAK model, whereby the adverfact denotes a situation creating the object of indirect education in the form of creatogenic environment. These theoretical assumptions are confronted with the results of the content analysis of collages made by marketing communication students, which were created on the topic "Educational advertising".*

*By mapping out the effects of educational elements in marketing messages, we monitored the impact of existing messages on the reactions and attitudes of the target groups. The results of this research confirm the effectiveness of the initial educational intent in messages only partially. Completing our analysis with the views of authors of these messages provides a more complex view of this issue; streamlines our recommendations for creation of adverfacts emphasizing education and for the elaboration and production of marketing messages with the educational content in commercial sphere.*

**Keywords:** *Education in advertising. Social responsibility. Creation of educative advertising*

### 1. INTRODUCTION

The consequences of the tendency toward automatised superficiality as opposed to intentional observation have been discussed by a variety of authors (Tomková, 2015, Tari, 2014, Zimbardo, 2015). What these authors agree on is that there exists a certain level of regression in the cognitive, motor, mental, and sociological personality development of an individual. For the aforementioned reasons, we have aimed our research and scientific pursuits at finding alternatives which would enable people to fully develop in all spheres of life and assist them in using all alternatives available for their benefit by relying on media and marketing reality (Janková, et al. 2016).

The effect of media messages as well as marketing messages is from the educational aspect reflected on both social and psychological level (Štrbová, 2013); on the paradigmatic level, both direct and indirect influence of the environment on the development of the individual has been proven. We have considered an alternative to use and to shift the existent theoretical framework related to social responsibility to the level of social responsibility of marketing messages whose primary-commercial aim (to sell) would be supplemented with the aim to foster personal development of the individual. Our considerations have drawn on two distinct premises—the educational and the socializing function of marketing messages.

The term education comes from the Latin word *educatio* which translates as upbringing, education, care. The understanding of this word is by no means monolithic; its meaning is often misunderstood and narrowed to formal education. Kratochvílová (2007) offers a complex analysis of the semantic aspect of the term. The author explains the wrong understanding of the word through misinterpreting the difference between *education* (=upbringing) with *erudition* (=education). From a semantic perspective, we need to make a distinction between a narrow and a broad understanding of the term. The former sees *education* in the context of a directive teaching of pupils in the context of school. Kosová and Kašáčová (2009) define the latter in the context of upbringing which also includes indirect influence on the individual in a positive way—an idea which is supported by most authors in our country. Our considerations draw on both aforementioned notions; we understand education related to media messages in the context of direct and indirect influence on the recipient, the effect on both cognitive and non-cognitive elements of one's personality, with the aim to achieve developmental changes.

Our considerations also draw on the term *socialization* which is a lifelong process. In its course, individuals acquire specific behavioral patterns, actions, language, knowledge, values, cultural features, etc. and thus they gradually integrate into their society (Průcha, Walterová, Mareš, 1995, p. 202). During this process, individuals are in perpetual contact with their social surroundings, especially by means of social learning, social communication and interaction, education but also pressure. The process of socialization usually takes place in the family, at school, in specific social groups, via media, in the work environment as well as in particular interest groups.

Drawing on the aforementioned theoretical framework, we have tried to indentify the goals of education and socialization in the context of media and marketing messages. The primary goal of education and learning is to acquire new knowledge, skills, attitudes, attributes, and values which are a condition for a successful performance of an activity, for its effective application. The original Bloom's Taxonomy classifies educational goals into three distinct domains: cognitive, affective, and psychomotor. The cognitive goals relate to changes in the area of knowledge, intellectual skills and abilities. The affective domain refers to emotional behavior, attitudes, beliefs, values, and social skills. Third, psychomotor goals deal with changes on the level of motor and manipulation skills. Majherová (2011) discusses a revised version of Bloom's Taxonomy as well as competences necessary for information technologies. The author draws on an interconnection of particular domains of the original taxonomy to specific activities of pupils using digital media.

We identify the direct and the indirect influence in the context of the presence or absence of specific instructions whose aim is to ask the recipient to perform a certain action. Our previous publications (Kapusta, 2013; Polakevičová, Kapusta, 2009) discuss the significance of this phenomenon by looking at the impact of instructions on the creative performance of children.

We are going to discuss specific dimensions of Bloom's Taxonomy as related to direct and indirect education in media and marketing communication.

## **2. TO REMEMBER-TO UNDERSTAND-TO APPLY-TO ANALYZE-TO EVALUATE-TO CREATE IN ADVERTISING DISCOURSE**

One of the aims of marketing messages is, apart from gaining the recipient's attention, also remembering the advertising contents so as to prevent the so-called vampire effect (the situation in which the recipient remembers the point of advertising but does not remember the advertised product or company). In this context, however, we are searching for determinants (elements) which relate to the cognitive dimension of personality development—remembering specific information, data, terms, etc. which are shared through media or marketing messages. As far as media messages are concerned, this dimension includes all programmes of educational character. The analysis of marketing messages is relatively more complex. Marketing messages include all advertising material aimed at enumerating, characterising, explicating foreign words, situations. By means of direct effect, the advertisement challenges the recipient to remember information; in case of indirect effect, it brings about a situation which has a potential to aim the process at remembering the information.

We have aimed at creating messages that support remembering particular information which is not directly interlinked to an advertised product but it purposefully (responsibly towards society) demonstrates some important knowledge. In the instruction, the recipient is asked to perform the following activities: enumerating, describing, arranging, looking up, highlighting, and creating.

The dimension of understanding should be indirectly present in relation to the point of the message and the advertised product. Nevertheless, educational advertising contents include an element which supports understanding the context of the problem that is primarily aimed at extending one's knowledge base. In the instruction, the recipient is motivated to summarize, compare, explicate, look up in more detail, describe, and summarize.

Application depends on the motivation of the recipient. It is concerned with the use of a learned piece of knowledge in a specific situation. We remind again that from the perspective of education the application does not relate to the problem solving or need satisfaction by the promoted product, and thus the application of halo effect of the product for the solving of given situation. It relates to the learned information, useful for the personality and society in the everyday situation. This type of an advertising message supports an individual to use the information, solve a problem, launch, record, download, process, and edit information.

Analysis refers to a theoretical level of application; in this case, the message challenges an individual to compare, organize, link, design, search for, integrate, to classify data and to create a mind map.

Evaluation relates to taking a critical approach towards media and marketing messages. This level is difficult to generalize and to control; in case of traditional media, the message might challenge an individual to test, experiment, verify, and comment. As far as digital marketing is concerned, there exists a broad scope of alternatives, mainly through interaction via social networks, through likes and sharings. The level of creation is an interactive sphere because of such activities as designing, discovering, creating, publishing, or blogging. It can be performed



on an intentional and a non-intentional level. The former, in case of sufficient motivation, often has the form of competitions (aimed at creation, drawing); the latter occurs if the message is so engrossing that it motivates the recipient to work and to create even without being challenged to do so.

However, we need to assert that the analysis of these levels draws on the notion of education which is not associated with commercial aims, with the advertising product or the company image, but it draws on the notion of education of an individual that works for the benefit of the whole society. We refer to this phenomenon as to a socially responsible education through messages. In contrast, we need to recognize a positive aspect of those educational elements that are primarily focused on the benefit of the company—we refer to this phenomenon as to commercial education by means of adverfacts.

Our understanding of educational objectives draws on the best known Slovak model entitled KEMSAK, which was elaborated by Zelina (1995). This model laid the foundations for the author's concept of creative and humanistic approach to education. The non-cognitive functions of this model are a complex reflection of the psychosocial element in one's personality. Since Zelina's model takes into account the objectives of socialization, it is relevant for our discussions.

The model distinguishes the following non-cognitive functions:

K (Slovak: *kognitivizácia*, English: *cognitization*) – the aim is to teach an individual on how to cognize, think, solve problems, learn to learn, search for and select information;

E (Slovak: *emocionalizácia*, English: *emotionalization*) – the aim is to teach an individual on how to feel, develop his or her competences for feeling, to develop one's feelings and emotions as well as emotional maturity;

M (Slovak: *motivácia*, English: *motivation*) – the aim is to develop one's needs, interests, desires, activities;

S (Slovak: *socializácia*, English: *socialization*) – the aim is to teach an individual on how to live with other people, to foster one's prosocial behavior and communication, to develop one's cooperation and communication skills and the ability to help and to foster progressive interpersonal relations;

A (Slovak: *axiologizácia*, English: *axiologization*) – the aim is to develop one's progressive system of values, to teach an individual on how to evaluate, understand values, and how to make decisions;

K (Slovak: *kreativizácia*, English: *creativization*) – the aim is to develop a creative lifestyle, to foster one's creative attitude toward life, people and situations.

As regards marketing communication, we are now going to analyze this model with respect to direct and indirect education.

Cognitization is similar to educational levels of marketing messages except for the fact that the processes of learning, thinking, solving problems, searching for and selecting information do not focus on the educational aspect and the specific transfer of information but on the way these processes are carried out. The recommended educational techniques are to be performed within five phases: defining, gaining information, creating, evaluating, and performing; by means of methods for developing cognitive functions (which we defined in the previous part); the method of using thesauri (notes and key terms); the method of persuasion, etc. In marketing communication, this aspect is relevant mainly in longer messages characterised by interactivity (for example in case of events, social networks, online marketing, and video games).

Emotionalization is an attribute of advertising messages which are often used as an efficient tool of persuasion. On this level of educational objectives, it aims at developing one's competences related to feelings, emotions, and emotional maturity. In the context of the educational process, Zelina (ibid.) recommends the following techniques: emotion-related discussions, artistic expression, drawing reflexions, drawing faces, etc. The marketing communication is associated with the instructions that ask individuals to express their emotions by means of verbal or figural expression which are communicated by means of media, not direct contact (draw, win, etc.).

Motivation was discussed in previous chapters. From an educational perspective, it refers to developing one's needs, interests, desires, and wishes. Motivation plays an important role in the context of marketing communication. Therefore, it is quite challenging to denote the non-commercial character on this level. What proves to be especially difficult is setting the borderline between developing one's needs or desires on the level of social development and the level of increasing the marketability of an advertised product.

Socialization and the ability to live with other people, to apply prosocial behavioural patterns and communication, to develop one's cooperative and communication skills as well as the ability to help or to foster progressive interpersonal relations is present especially in commercial and non-commercial social advertisements.

Axiologization aims at developing one's progressive system of values, at teaching an individual on how to evaluate and understand specific values and make decisions. Zelina (1995) recommends the technique "I blame– I defend– I judge"; the method of constructive argument, education towards human rights, etc. One can often encounter this motif in media messages (e.g. in a Slovak TV program *Súdna sieň*). Nevertheless, we have not recorded these techniques in marketing communication so far. Anyway, we recommend the application of these techniques in marketing messages, events, and online communication.

Creativization refers to developing one's personality by means of using one's creative potential of problem solving; in this context, marketing messages play the role of a creatogenic environment.

### **3. EDUCATIONAL ADVERTISING FROM THE PERSPECTIVE OF STUDENTS OF MARKETING COMMUNICATION**

In our previous studies (Janková, 2015), we have identified several basic categories of inciting creativity in the context of commercial spots: novelty (1), freedom (2), feeling (3), multisensory perception (4), playfulness or humor (5), support of apperception (6), imagination and fantasy (7), fluency, variability, originality of thinking (8), curiosity (9), independence (10), bravery (11), motivation and stimulation (12). In our previous research, we have identified these elements in advertising contents which have the potential of creativization: novelty in the category of direct challenge; freedom in the categories of freedom of imagination, freedom of play, freedom of creation; humor, fluency, flexibility and original thinking in the category of direct challenge; and thinking in the categories: thinking-product, thinking-participant, situation; imagination and fantasy in the categories of direct challenge, picture and imagination, image of a product and activity, image of a vision; perception in the categories related to vision (sight, distinct coloring, animation), the sense of hearing (music, sound of a product, hearing), taste, smell and touch; independence in the category of direct challenge, indirect challenge, responsibility–independence–product, responsibility–independence–situation; bravery in the

categories of direct challenge, safety, self-respect; curiosity in the categories of direct question, exploitation of a product, situation in advertising; motivation in the categories of motivation by means of prize and motivation by means of recognition

Drawing on the previous chapter, we tried to classify these categories within the model of educational objectives. Our findings are summarized in Table 1 (next two pages).

|           |                                |                                                            | LEVEL         | ACTIVITIES                                                                                                                                          | EXTENSION to a digital area                                                                                      |
|-----------|--------------------------------|------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Education | Socially responsible education | Advertising follows social objectives                      | 1. Remember   | To enumerate, to describe, to arrange                                                                                                               | To look up, to highlight, to create                                                                              |
|           |                                |                                                            | 2. Understand | To interpret, to summarize, to compare, to explicate                                                                                                | To use extended search mode, to describe, to create an annotation                                                |
|           |                                |                                                            | 3. Apply      | To use, to perform, to solve                                                                                                                        | To launch, to record, to play, to download, to process data, to edit                                             |
|           |                                |                                                            | 4. Analyze    | To compare, to organize, to assign, to design, to search for, to structure, to integrate                                                            | To create and to discover associations, to analyze, to debug a programme, to classify data, to create a mind map |
|           |                                |                                                            | 5. Evaluate   | To control, to evaluate, to experiment, to test                                                                                                     | To test a software, to verify, to comment on, to broadcast, to moderate                                          |
|           |                                |                                                            | 6. Create     | To propose, to plan, to discover, to produce                                                                                                        | To program, to animate, to blog, to publish, to create a web content, to cooperate                               |
|           | Commercial education           | Educational goal depends on marketing goals of the company | 1. Remember   | To enumerate, to describe, to arrange                                                                                                               | To look up, to highlight, to create                                                                              |
|           |                                |                                                            | 2. Understand | To interpret, to summarize, to compare, to explicate                                                                                                | To use extended search mode, to describe, to create an annotation                                                |
|           |                                |                                                            | 3. Apply      | To use, to perform, to solve                                                                                                                        | To launch, to record, to play, to download, to process data, to edit                                             |
|           |                                |                                                            | 4. Analyze    | To compare, to organize, to assign, to propose, to search for, to structure, to integrate                                                           | To create and to discover associations, to analyze and debug a programme, to classify data, to create a mind map |
|           |                                |                                                            | 5. Evaluate   | To control, to evaluate, to experiment, to test                                                                                                     | To test software, to verify, to comment on, to broadcast, to moderate                                            |
|           |                                |                                                            | 6. Create     | To propose, to plan, to discover, to produce                                                                                                        | To program, to animate, to blog, to publish, to create a web content, to cooperate                               |
| Education | Socially responsible           | Advertising follows social objectives                      | Cognitization | to teach an individual on how to get to know the world, to think, to solve problems, to learn how to learn, to search for and to select information | thinking within the categories of the product, participants, situation                                           |

|  |  |  |                  |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                          |
|--|--|--|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |  | Emotionalization | to teach an individual on how to feel and to develop one's competences for feeling, to develop one's feelings, emotions, and emotional maturity                                                                                                |                                                                                                                                                                                                                                          |
|  |  |  | Socialization    | to develop one's needs, interests, desires, wishes, and activities                                                                                                                                                                             | freedom of play, independence in the categories of direct challenge, indirect challenge; curiosity in the category of direct question, safety and self-respect                                                                           |
|  |  |  | Motivation       | to teach an individual on how to live with other people, to foster one's prosocial behavior and communication, to develop one's cooperative and communication skills and the ability to help and to foster progressive interpersonal relations | motivation through prize and motivation through recognition                                                                                                                                                                              |
|  |  |  | Axiologization   | to develop a progressive system of values in an individual, to teach an individual on how to evaluate, how to understand values, and how to make decisions                                                                                     | responsibility–independence–product, responsibility–independence–situation                                                                                                                                                               |
|  |  |  | Creativization   | to develop a creative lifestyle, to foster one's creative attitude toward life, people, situations                                                                                                                                             | novelty in the category of direct challenge, freedom in the categories of freedom of imagination, freedom of creation, freedom of humor, fluency, flexibility, and originality of thinking, development of one's imagination and fantasy |

*Table1: Operationalization of categories in educational advertising (Source: authors)*

The aforementioned model of socially responsible marketing messages has been confronted with the opinions and perspectives of students of marketing communication and advertisement, who will potentially create their own adverfacts in their professional working pursuits. Our aim was to identify the preferences of future advertising creators without any theoretical preparation related to socially responsible advertising material. Our findings support the idea of incorporating the subject of Educational Advertisement into the study plans of Marketing Communication.

The research sample consisted of 22 students of marketing communication and advertisement with an average age of 22 years. They were instructed to create a collage on the motif of “Positive advertisement developing one's personality”. The students discussed the contents,

objectives, and attitudes toward positive advertisements in writing by pointing out specific examples from real life.

The results have been analyzed on two distinct levels:

- confrontation of the model of educational advertisement with the visual aspect of the collage,
- confrontation of the model with the verbal attitude toward positive advertisements.

The analyzed collages have been classified thematically into the following groups:

### ***Nice moments in life***

The collages of this category capture the moments of life whose aim is to help people remember happy and joyful times in their lives. The collages portray smiling people, happy children, animated figures, family pets, and babies. The commercial images of this kind are associated with shopping, teahouses, concerts.

The verbal statements concern such objectives as:

- "To demonstrate that the recipient of an advertisement is a thinking person who has been formed by advertising ever since childhood";
- "To develop children's imagination by means of a variety of animated figures, costumes, and humour";
- "To bring positive energy through laughter to people of all age groups";
- "To positively affect personality development through portraying good mood as advertisement is a means of entertainment and information gain".

Advertisements and commercials that have recently attracted recipients include: *Nepite za volantom, jazdite opatrne* (=Don't drink while driving, drive carefully), *Carl Lagerfeld and the promotion of reflex vests*.

From an educational perspective and as regards our model of objectives associated with the educational advertisement, the collages have an unequivocal educational character. The portrayal of joy, happiness, and positive moments in life concentrates on inciting positive emotions; that is why we classify this group in the category of emotionalization.

### ***Advice towards success and progress***

The images portrayed demonstrate the counterpoints of specific behavior on the axis of happy versus unhappy, communicative versus uncommunicative, positive versus negative. A 50-per cent choice is stressed; the collages show such advice as: "Get rid of your stress", etc.

The objectives include:

- "to show that the positives do not exist on their own; that every situation has a positive and a negative side";
- "to motivate us to change our or other people's life";
- "advertising has the potential to incite an individual toward travelling, adventure; to enhance one's self-confidence, assist an individual in taking a positive action and getting rid of stress, etc."

Advertisements and commercials that have recently attracted recipients include: *Dôvera–reklama, aby sme sa nevzdávali a bojovali* (=a commercial challenging people not to surrender and to fight). We classify this category in the context of the educational treatment of an advertising message, which primarily focuses on the motivation of the recipient. On the secondary level, however, it motivates the recipient to take a responsible and independent

attitude toward life; that is why the category has been classified within the scope of both motivation and axiologization.

### ***Pointing out life goals***

The collages concentrate on portraying such life goals as getting an expensive watch, cars, more money, education, luxurious houses, and delicious meals. They suggest luxury, sensuality and complications in achieving one's life dreams.

The objectives include:

- "to demonstrate situations that might occur";
- "to show that success is preconditioned by difficulties";
- "to suggest that a positive advertisement can push an individual forward".

The respondents did not mention any specific examples of advertisements in this category.

The educational aspect of advertisements belonging to this category incites the recipients to form their life goals. From the point of view of content, the collages relate to the development of one's needs which serve as life goals; therefore they are classified within the category of socialization and motivation.

### ***Motivation toward sport***

The collages concentrate on sport and sport activities; they portray barbells, sportsmen, healthy life style, nature, entertainment, adventure and they include such words as sport, adventure, commitment, health, activity.

The commentaries include such statements as:

- "to foster a healthy life style and activity in life";
- "kalokagathia";
- "nature, sport, activities, and healthy life style develop one's personality";
- "the competition is strong, be fit".

The advertisements and commercials mentioned by the respondents were: *P.N.G – olympiáda* (*P. N. G. – Olympic Games*), *Nepite za volantom, jazdite opatrne* (*Don't drink while driving, drive carefully*).

This advertising material focuses on changing one's system of values as related to one's needs; similarly to the previous case, it aims at motivation.

### ***Motivation toward personal development***

The collages portray the ideal of a woman, perfection, success, balance, harmony. They focus on such notions as charm, perfection, and star.

The commentaries include such goals as:

- "Support of gifted individuals";
- "Advertisement as an inspiration";
- "Demonstrating the interconnection between women's self-confidence and their happiness".

The advertisements and commercials mentioned: *Dove*, *Tatra banka*.

From an educational perspective, as stated in the title of the category, the advertising material focuses on motivation.

### ***Motivation toward healthy eating habits***

The collages include images of meals, vegetables, fruits, vegetable juice. Frequently, they are confronted with unhealthy eating alternatives such as pizza, sausages, sweets, hamburgers. The pictures are accompanied with words like advertisement, crispy, fastidious, quality, great offer,

refreshing, sweet, what will you have, when we are together, I am perfect, it is time you thought about yourselves.

As far as the objectives are concerned, the respondents claim:

- “to focus on self-realization, a decent level of self-confidence”;
- “to familiarize people with healthy eating habits”;
- “to motivate people to take healthy decisions”.

The advertisements mentioned: *Dobrý anjel*, *Coop Jednota*, and *a speaking dog*.

We classify the category under the scope of motivation.

### **Protection of environment**

The collages portray ecological motifs and images of protecting vital environment such as the landscape, animals, plants, ecological cars, friendship between man and animals, solar panels, wind power plants.

The objectives include:

- “ecological education”;
- “renewable resources”;
- “nature”;
- “endangered species”;
- “clean nature”.

We classify the category under the scope of axiologization on the educational level.

### **All in 1**

These collages include all images of the categories mentioned so far; sports, protection of nature, objectives, assistance, selection, advice, motivation. We include them under the scope of all levels of the educational aspect of advertising.

### **Other**

The contents that are not possible to be classified within a respective thematic category and that do not correspond with particular instructions.

Table 2 shows the quantification of our findings (*continues on the next page*).

|                  |                                       |                                                                            | LEVEL           | Number |
|------------------|---------------------------------------|----------------------------------------------------------------------------|-----------------|--------|
| <b>Education</b> | <b>Socially responsible education</b> | <b>The advertisement follows social objectives.</b>                        | 1.To remember   | 0      |
|                  |                                       |                                                                            | 2.To understand | 0      |
|                  |                                       |                                                                            | 3.To apply      | 0      |
|                  |                                       |                                                                            | 4.To analyze    | 0      |
|                  |                                       |                                                                            | 5.To evaluate   | 0      |
|                  |                                       |                                                                            | 6.To create     | 0      |
|                  | <b>Commercial education</b>           | <b>The educational goal depends on the company's marketing objectives.</b> | 1.To remember   | 0      |
|                  |                                       |                                                                            | 2.To understand | 0      |
|                  |                                       |                                                                            | 3.To apply      | 0      |

|                  |                                       |                                                     |                  |    |
|------------------|---------------------------------------|-----------------------------------------------------|------------------|----|
| <b>Education</b> | <b>Socially responsible education</b> | <b>The advertisement follows social objectives.</b> | 4.To analyze     | 0  |
|                  |                                       |                                                     | 5.To evaluate    | 0  |
|                  |                                       |                                                     | 6.To create      | 0  |
|                  |                                       |                                                     | Cognitivization  | 1  |
|                  |                                       |                                                     | Emotionalization | 5  |
|                  |                                       |                                                     | Socialization    | 4  |
|                  |                                       |                                                     | Motivation       | 15 |
|                  |                                       |                                                     | Axiologization   | 3  |
|                  |                                       |                                                     | Creativization   | 0  |

Table2: Quantification of respective levels in collages (Source: authors)

Our findings clearly point to the concentration on the recipient's motivation. To a smaller extent, the educational advertising evokes the aspect of emotionalization, axiologization, and socialization in students. The results demonstrate that these advertising contents are not automatically associated with education on any level; also the levels of cognitivization and creativization do not play a significant role.

These findings clearly confirm the importance and necessity to include educational advertising in the professional preparation of future advertising creators and marketing experts, with a major focus on motivating them to create and to incite original and useful solutions.

#### 4. CONCLUSION

Education and socialization in marketing communication, with respect to the semantic aspect of these terms in pedagogy, form a system of recommendations on how to create socially responsible and educational marketing messages.

We have concentrated on the analysis of pedagogical and psychological aspects related to the impact of advertising on children and other target groups, by drawing on Bloom's Taxonomy of educational objectives and Zelina's concept of educational objectives with the use of instruction in advertising messages. We have outlined the types of social responsibility of the adverbact by categorizing them into: socially responsible education through advertising messages (1), commercial education by means of adverbacts (2), socially responsible education through adverbacts (3), and socially responsible advertising as a creatogenic environment (4).

Our research has been supported by project KEGA 035UKF-4/2015: “*Socializing and Educational Functions of Marketing Text as a Reflection of Media Culture*”. The paper aims to incite interest of creators, clients, and TV programme managers in the issue of including educational elements in adverbacts. We hope that through our findings presented within the project, in a variety of monographs, articles in scientific and academic journals, case studies concerned with the alternatives of educational elements and contemporary analysis, educational socializing factors will soon be included in marketing messages.

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## **BUSINESS PROCESS MODELING AND PROCESS ORIENTED APPLICATION IN IMPLEMENTATION OR DEVELOPMENT OF NEW INFORMATION SYSTEM**

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### **ABSTRACT**

*Business Process Management (BPM) allows process owners to improve the way they are doing business. Crucial first part of business process management dealing with output value projections by analysis and comparison of current and future business processes is business process modelling. Based on the value projections of future impacts for new business processes contemporary BPM tools enable the development of Process Oriented Applications (POA) or process software that should support future processes and enable improvements. The paradigm of process oriented applications implies an active collaboration of process owners with IT experts when developing new software, tailored by business needs. This paper tends to answer the two research questions: "How do process oriented applications help in new information system development?" and "How does this kind of process oriented software improve business process efficiency?".*

**Keywords:** *business process modeling, ICT implementation, information systems development, process oriented application, POA*

### **1. INTRODUCTION**

Business process modeling is especially useful in implementation of new information systems (IS) or use of information and communication technology (ICT) in process improvement projects in general. Projects of implementation of standard or development of custom-made IS often leads to disagreements among the understanding of the real state of the process in the respective enterprise and expectations of new software among the participants of the project: users, management, consultants, programmers and ICT experts in general. In order to accelerate the development of new or implementation of existing IT applications for supporting business processes a significant role has clarification and understanding of a process in same way by all participants.

With goal to bridge the gap between business process modeling and software development, new platforms that enable the development of process-oriented software or process-oriented applications (POA) were created. This paradigm is based on so-called model driven development (MDD) approach.

In this paper, results of BPM and development of POA case-study were presented. The advantages and disadvantages of this type of POA applications were explored as lessons learned and use of business process modeling with BPMN 2.0 (OMG, 2017) standard in particular POA application was investigated. Therefore, first current and future state of the business process is presented via according process models, the implementation effects of future ICT solutions in companies that introduce new technologies is projected, and finally, a prototype software is shown. Some case-study based conclusions for a sales process are discussed. Main contribution of this paper is to investigate and present first-hand BPM and POA experience. In this sense, we present the use of methodologies and tools to clarify how functional specifications of the future software can be implemented in POA.

## **2. BUSINESS PROCESS MODELING**

According to Brumec (2011, pp 3) a genetic definition of a business process states that "a business process is a set of interlinked activities and decisions, triggered by an external stimulus, performed in order to achieve measurable objectives while consuming organizational resources and transforming inputs into specific products or services relevant to the user's expectation". According to (Šimović, 2009, pp 32-45) "business process modelling is a depiction of the structure and the manner in which activities within an organization are ran. Also, with the help of business process modelling it is very easy to visualize the business system of a particular company".

Standards in business process modeling helps to better communication between the experts from both sides of the table: business experts from one-side and informatics/consultants experts from another side. According to research from Barjis (2008, pp 2-3) software development projects failed in some point in 53% of cases because of poor process modeling and there was a need to improve process models or to develop them properly to fully understand business requirements in particular project. In this manner business process modeling methods are developed and used to overcome common misunderstanding between the business and information-technology experts and to develop fully understood process models. Commonly accepted standards in this area is Business Process Modeling and Notation 2.0 (OMG, 2017) widely accepted as standard in process modeling theory, practice and implemented in process modeling software tools from all major software vendors as IBM, Oracle, Microsoft, ... etc. (BPMN.org, 2017).

Relevant methodologies for process improvement are presented by Dumas et. al. (2013) and Brumec (Brumec and Brumec, 2013, pp 147-163). The authors followed the BPM methodology by Dumas et al. (2013) who define process improvement by running "process identification, process discovery, process analysis, process redesign, process implementation and process monitoring and controlling".

In order to investigate how process oriented applications promises to help in prototyping of new information systems we applied the BPM methodology on a case study in order to test BPM tools covering the majority of BPM methodology steps and to present first-hand experience from this case study of process improvement. The authors modelled the processes and developed the testing application by using the software BizAgi Process Modeler (BizAgi, 2017a) for process modeling and BizAgi Studio (BizAgi, 2017b) for POA development.

## **3. PROCESS ORIENTED APPLICATIONS**

The paradigm of process oriented applications promises to help in prototyping of new information systems. Koc and Boudag (2017) offer a new "conceptual framework to understand and measure the degree of novelty of an innovation" which is based on Porter's value chain

approach. This framework "proposes a process-oriented model that considers the possible impact of a particular technology on the discrete business processes in a firm's value chain".

This has some impact on the perception of users of the information system. The users expect to get a full information regarding to the process as a whole through the entire business value chain. Often this is not supported via a single-sign-on system due to the fact that various legacy software components are handling some part of data while performing subprocesses. This is a real test for process oriented applications because their role is to gather the information from various software components and to deliver it as a full information to the user.

Another aspect of POA is related to managing instances of processes. Pflug and Rinderle-Ma (2015) have "systematically analysed the effects of reordering instance executions on the temporal performance of the process. The analysis started from considering the reordering for single tasks to commonly used process patterns, i.e., sequence, exclusive choice, parallelization, and loops".

These concepts of managing processes instances need to be incorporated in software implemented in order to support the business processes properly.

Authors Wei and Zhang (2016) explored what businesses need to consider in order to adopt "transformation of manufacturing resources to service mode of network platform" by discussing the flexibility of "architecture and implementation of ERP software under Internet from the aspects of business process choreography and service component evolution". This could be a good assumption that process choreography and orchestration are helping the development of new information systems by integrating the functionality of existing legacy systems and incorporating their components according by business value chain demands.

To sum up what POA paradigm promises, we will test these three assumptions of POA helping in development of new information systems:

- integration of data in accordance with businesses value chain,
- proper management of process instances and
- integration of functionality of legacy systems.

These three assumptions of POA will be tested via a case study.

#### **4. METHODOLOGY**

According to case study method (Yin, 1994) one process improvement experiment, on common business process – sales process were used and investigated. Sales process in this case study is presented in three common sales process phases: 1) Contact establishment, 2) Sales Arrangement; 3) Sales execution. Process analysis and modeling of process model were made according to theoretical universal sales process (Drljača, 2005, pp 4-6) which include activity's like: 1) analysis of customer requirements, 2) offers development, 3) contracting, 4) realization of sales, 5) invoicing 6) final actions. In accordance to theoretical process, real-time process was used as case study and it was analysed in one on-line store in Croatia. Research was made, by one of this paper authors, in his final thesis research in year 2012.

## 5. RESEARCH AND RESULTS

Research was made on POA platform delivered by BizAgi called BizAgi Studio (BizAgi, 2017b) and process model was developed in BizAgi Process Modeler (BizAgi, 2017a).

In our case study, POA development methodology was used and process oriented application was developed in seven steps according to BizAgi guide (BizAgi, 2017b) see Figure 1.

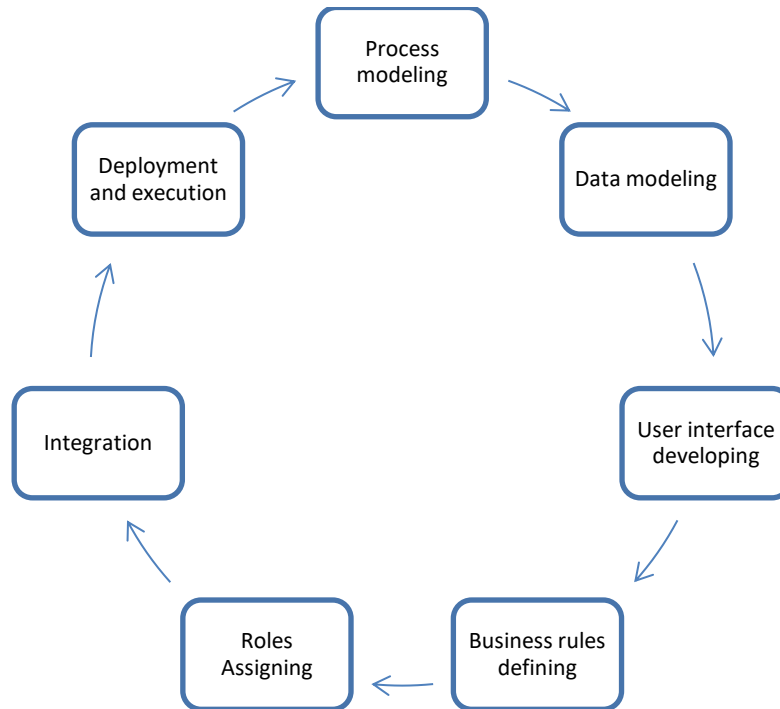


*Figure 1: Process Oriented Application methodology by BizAgi (BizAgi, 2017b)*

According to first step of Figure 1 the process model of sales process was modelled in details and it consist of two main organizations involved in the process: buyer (customer) and seller (sales department of sales organization). See Figure 2.

In sales department/organization that is providing sales service, several roles are recognized: sales clerk, warehouse worker and accountant. In final version of sales process 19 activities were modelled and functional process oriented application was built on this detail process model. All can be seen as result of first step in POA development on Figure 2.

In process model, it can be seen that all activities has its own type: mainly human task, some business rule tasks and message task at the end. In addition, this kind of detail level needs to clarify at lowest operational level of process what and how we do the process in practice. Future development of POA is driven with this kind of detail process models.

*Figure following on the next page*

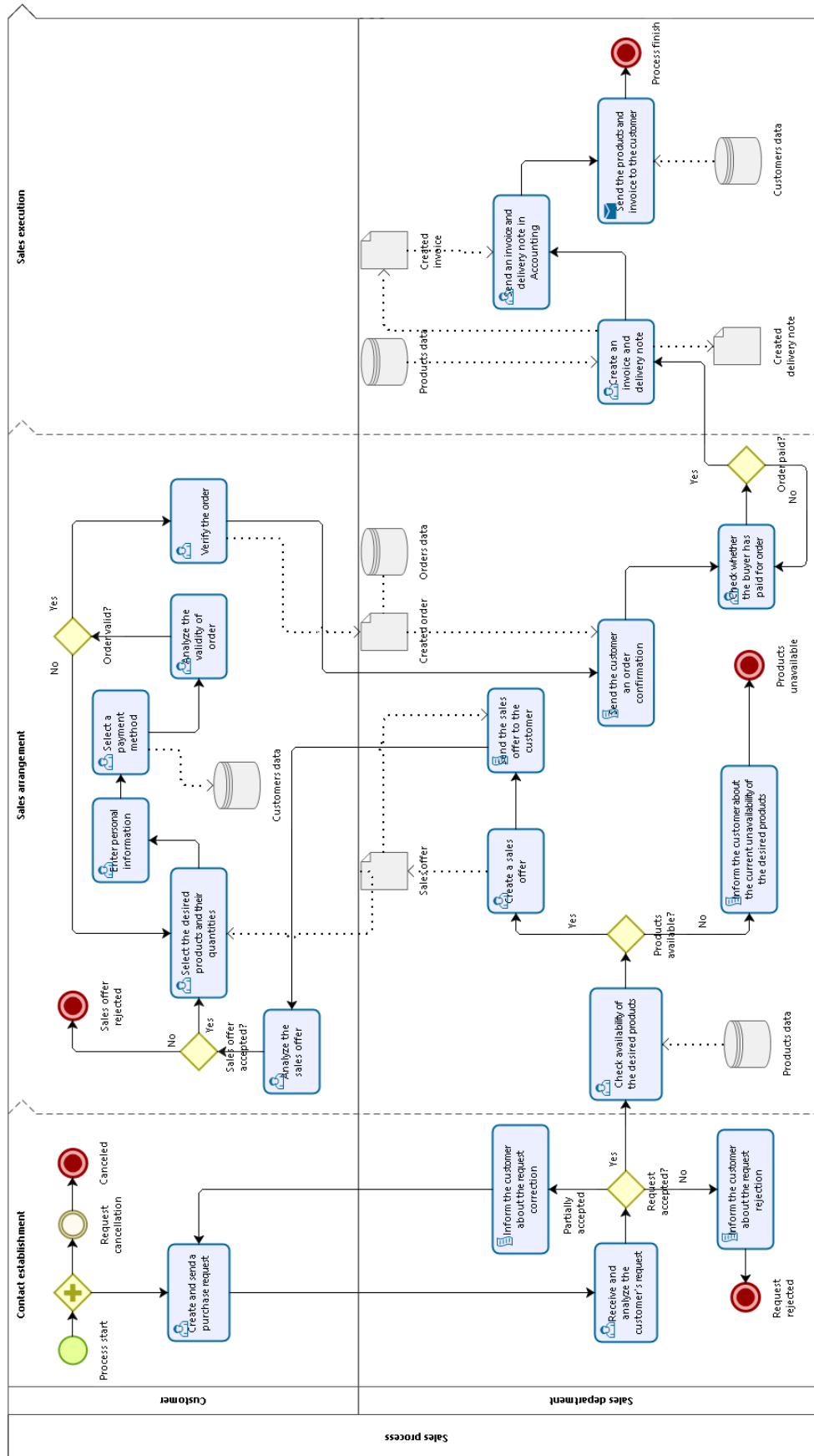


Figure 2: Case study sales process in BPMN 2.0

Further, in accordance to second step of POA methodology, data inputs and outputs in all process activities were analysed and data model was developed. Figure 3 represents data model underneath the process model.

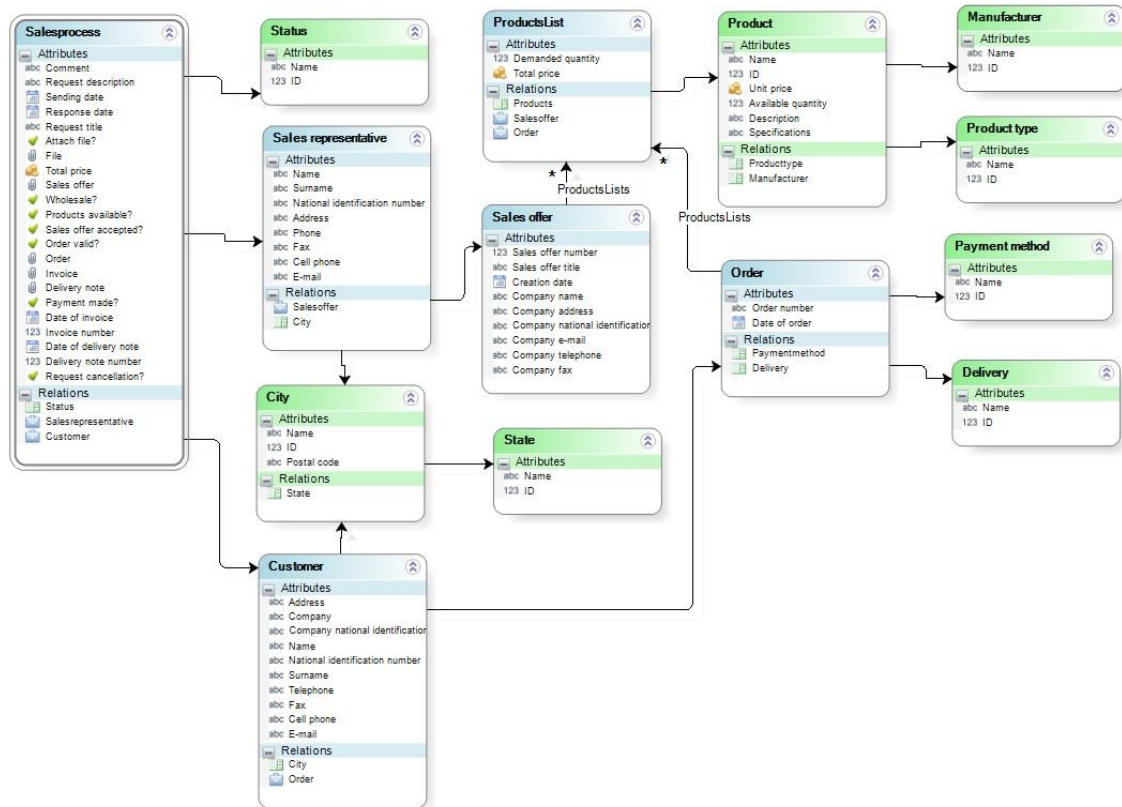


Figure 3: Data model underneath the sales process

Next step in POA development was user interface development, which is made in some sort of code/designer generator environment mainly using drag-and-drop method and connecting data model with parts of user interface forms following the process path. In every human task, developer needs to use some sort of human-computer interface or form to present or gather information needed for the user in particular part of the business process according to previously developed process model. Figure 4 show as example of one of the forms from the project.

Figure 4: Example of user interface form

Following figure shows the fourth step dealing with Business rules defining. Business rules have a significant role for automating the process execution due to the fact that they guide the POA user via appropriate forms in running activities of the process. In this way the business user does not need to know or decide for each case what should be the next processing activity.

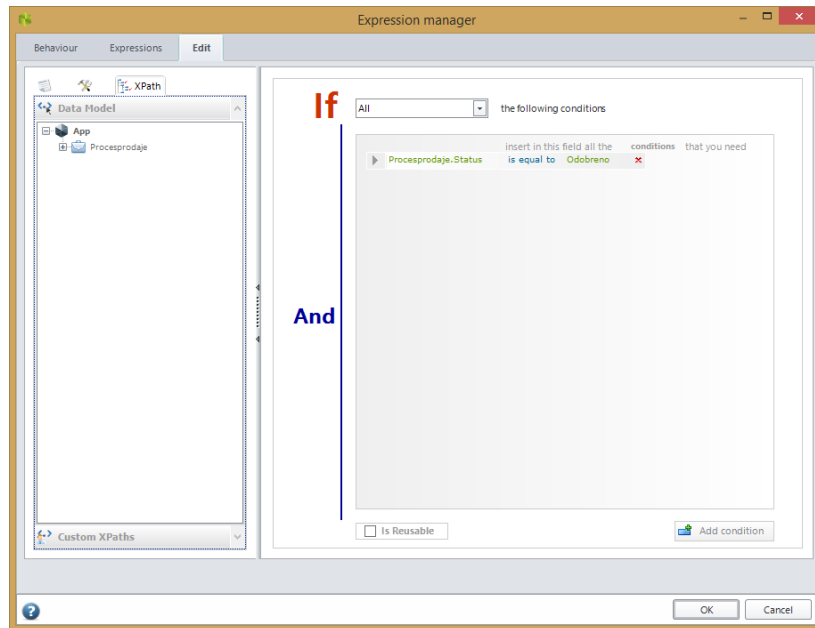


Figure 5: Example of business rules defining

Next, process performers can be associated with particular activities by using appropriate assignation methods. Basic assignation methods is related to Load and arises from the process model.



Figure 6: Example of roles assigning

Integration of functionality of legacy systems an optional step in BizAgi’s POA methodology. Due to data protections issues this step was tested separately and for a limited set of data. For our case study the given integration, features were functioning within our expectations.

Final step of the Process Oriented Application methodology by BizAgi is Deployment and execution. Following figure presents the basic screen of a running POA.



Aside the support that POA are realizing for process running, a set of analytics is precompiled and available after some process instances are created. This allows business users to monitor and analyse the process execution and intervene if necessary.

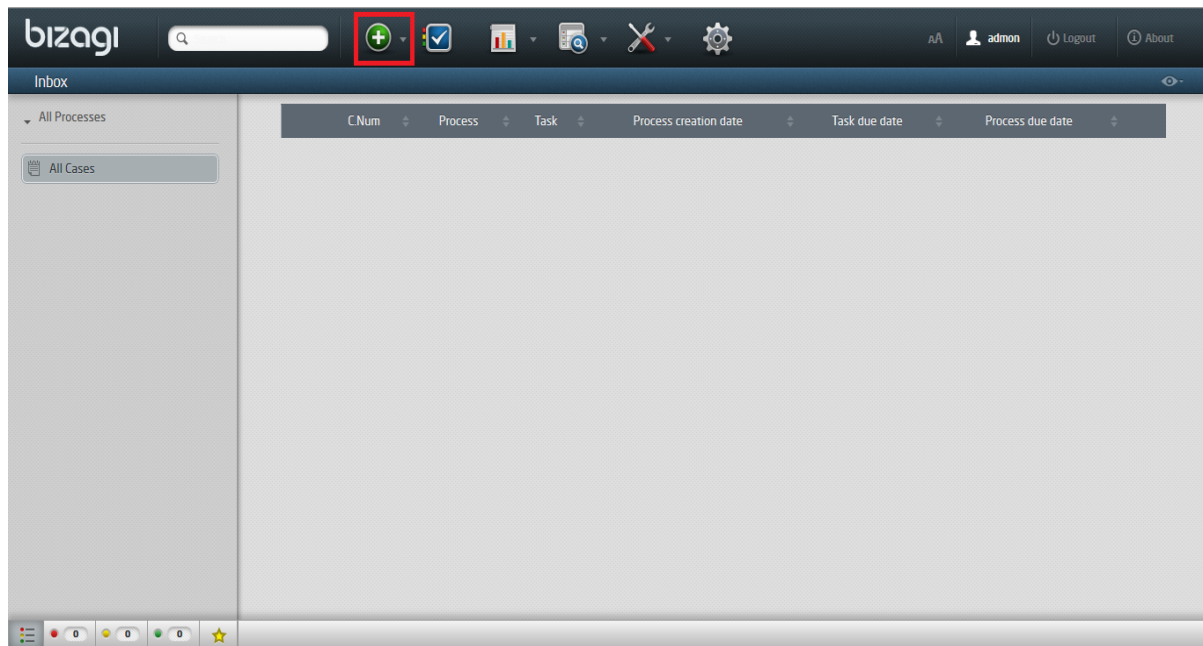


*Figure 6: Example of deployment and execution*

After testing POA paradigm promises, we concluded that the basic three assumptions are realized:

- integration of data can be performed in accordance with businesses value chain because the tools enables value chain modeling via modelling processes,
- proper management of process instances is given by predefined and precompiled analytics and monitoring features and
- integration of functionality of legacy systems is possible due to an optional integration feature. This feature was tested separately in our case study due to data protections issues and it was delivering expected results.

## 6. LESSONS LEARNED

Based on our case study following lessons were experienced and learned:

- Independence from the web platform - Process oriented applications made in the tool BizAgi Studio are web applications that run on an independent web browser.
- Easy creation of applications based on process model - To create process-oriented applications is not necessary to have an extensive programming knowledge or experience.
- Guided stages of application development - The tool BizAgi Studio guides the developer by pre-defined steps (production process model, development of data models, etc.) related to all relevant application development stages.
- Easiness and low time consumption in application versioning – application can be easily versioned due to to form copy and paste options, as well as due to process model versioning.
- The stronger compliance to the real business domain of problems - POA applications are often closer to the domain of the real business problems than the application

programmed in one of the classic programming languages due to their orientation to a process modeled in the first step of prototyping.

- Integration of data - POA allow gathering data from various software components developed on different platforms, when carrying out a process instance process.
- Clear roles and responsibilities – The use of pools and lanes in process models defined roles and responsibilities in later application usage. This means that very little effort for additional user authorization administration is necessary.
- Cooperation of process owners and developers - Unlike traditional software development process where process owners deliver the functional requirements to developers who need to understand them, the POA development demands an active involvement and cooperation of process owners and developers by allowing them to use a process model as a language of mutual comprehension.
- Integration of functionality – POA allow invocation of procedures that belong or are ran by other external applications such as ERP, CRM and SCM applications. Management of these invocations is monitored by process choreography and orchestration.
- Management of process instances vs. Management of processes - A minor disadvantage is related to tracking process results by one instance by the time, meaning that POA are not intended to use as ERP systems, but rather as case management tools.
- Capabilities of POA are limited by capabilities of BPM prototyping tools - Unlike traditional software development, process oriented applications are limited by possibilities of BPM tools for development of such applications.
- User Interface - The user interface in process-oriented applications is defined in advance and can be altered only by changing the form appearance while defining the form.

These lessons may not be seen as overall advantages and disadvantages of POA, but as a set of implications of what may be expected when prototyping applications by the POA paradigm.

## 7. CONCLUSION

In this paper, we tended to answer the two research questions: "How do process oriented applications help in new information system development?" and "How does this kind of process oriented software improve business process efficiency?". First, Process oriented applications help in new information system development by enabling integration of data in accordance with businesses value chain, proper management of process instances and integration of functionality of legacy systems.

Second question answer suggest that this kind of process oriented software improve business process efficiency by enabling easy creation of applications based on process model, fast application prototype development, clearing roles and responsibilities. POA methodology and software development approach is allowing improved process efficiency due to stronger compliance to the real business domain of problems, cooperation of process owners and developers, easiness and low time consumption in application versioning as well as management of process instances through case management.

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## EMPLOYER BRANDING THROUGH CSR AND SURVEY

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### **ABSTRACT**

*This paper examines the role of corporate social responsibility (CSR) within the segment of employees' job satisfaction. It questions how can organizations enhance their reputation through corporate social responsibility (CSR). In what way could CSR, focused on employees, create motivational internal environment and also serve for enhancement of external organizational image. It considers why is corporate social responsibility a competitive advantage in a contemporary global market therefore a process that can easily stand out in stakeholder's mind. Furthermore, paper examines how and why are employee engagement programs important part of the overall corporate social responsibility. The author analyses cases of successful organizations that have been selected as a best employers in Croatia. Through comparative analysis of different cases and by giving examples of the CSR best employer approaches, this paper is awakening the idea of integrating, more intensively, public relations activities within the corporate social responsibility programs. The paper is questioning the criteria and standards for best employer awards and how employer branding can be used for improving organizational reputation. Moreover, the author analyses tools and techniques which can be implemented in CSR programs that are aimed for employees. The paper also gives a media perspective on CSR. It observes publicity as strategic outcome of CSR. The author illustrates how publicity and media relations are associated with corporate social responsibility programs and employer branding. The concept of CSR is associated, as well as supported, with the public relations and marketing professions which are inevitably intertwined in their activities. Employer branding is therefore observed through the role of corporate social responsibility and public relations.*

**Keywords:** *corporate social responsibility, employees, employer branding, employer survey, public relations*

### **1. INTRODUCTION**

Since corporate social responsibility (CSR) became a well recognizable term in business, numerous organizations in the private and public sector started to develop and promote their CSR programs. It is noticeable that many of them with their CSR projects didn't really produce a significant impact on the society or environment, even local community. Moreover it seems that they were looking for a new way to approach their target audiences, consumers and other interest groups. For some of them, CSR programs are actually what they see as an opportunity to create competitive advantage – asset or an attribute that will allow them to perform better than their competitors. Behind the concept and the idea of corporate social responsibility are hidden organizational interests that can lead to several CSR program objectives: altruistic community support, improving financial situations (increasing sales), building stronger relationship with various publics, increasing employee motivation, building organizational image, improving services and product with CSR intervention. When it comes to increased sales or possibility to influence consumer decision making based on CSR, results show that the consumers are now willing to pay more for sustainable products than before (Nielsen, 2014). The willingness has increased globally since 2011 and especially in Asia-Pacific where 64% consumers would pay more for sustainable products, following Latin American consumers (63%), Middle East and African consumers (63%), North American consumers (42%) and at the end European consumers (40%) (Nielsen, 2014). These results indicate that CSR programs

have different impact in regard to cultural differences which in one part determine individual's perspective. Further study on the effects of CSR on purchase decisions in the U.S. from 2007 till 2014 shows that CSR sometimes affects U.S. citizens' decisions (34%), hereafter affects their decisions once in a while (25%), it has a strong effect on their decisions (17%) and no effect at all (17%) (Statista, 2015). These results reveal that CSR is a meaningful activity which shouldn't be neglected in corporate business strategies.

Employer branding is associated with the CSR programs. Best employer research and awards are best examples of the interdependence between those two. CSR projects could include lifelong learning, personal and professional development, self-initiatives, inclusion in decision-making, pleasant working environment and human relations (implying positive communication practices). This can make some of the elements in the employee engagement. Employee satisfaction is recognized through best employer awards which are negotiated and supported by mainstream media. Publicity could therefore enhance employer image, reputation or a brand.

This paper is focused on the employer branding through CSR programs and best employer awards. Employees are not often perceived as a part of corporate social responsibility programs. This domain is not often recognized as a main objective in corporate social responsibility. External CSR activities are often perceived through much more gains for organizational reputation. However, there is a rise of organizations that have recognized the value of employee based CSR projects and they have successfully implemented these programs with a real impact on employer's branding. The paper displays the reasons behind creating such a programs and questions what can be the organizational objectives for using CSR in the employee domain. Moreover, discussion is focused on CSR's contribution to the creation of the organizational image and consequently employer brand. This implies and includes value creation and adding value to organization. It is necessary to elaborate how the image, identity and brand relate to each other and how can they be communicated through CSR projects.

## **2. CSR DEVELOPMENT**

Companies have started to gain significant profits in the 20<sup>th</sup> century and the question is how they could contribute to the society. Moreover, how they can support the society. Archie Carroll (1979) was one of the first authors who tried to determine corporate social responsibility (see also Tuzzolino & Armandi, 1981) by stating that it encompasses four domains in which society has some expectations from the organization: economic, legal, ethical and discretionary. Carroll (1991) further developed his four dimensions by developing "Pyramid of Corporate Social Responsibility". At the bottom of the pyramid with the biggest share we find economic dimension – to be profitable as a necessity, then follows legal dimension – to obey the law as a requirement. Ethical dimension or to be ethical is expected but not required, and finally on the top of the pyramid is placed philanthropic dimension – to be a good corporate citizen as a desire, we could say something to strive for. Interpreting Carroll's Pyramid (1991) we could say that there is a kind of fluidity between the borders of four dimensions. For example, doing business in ethical manner could imply that we are professionals which could lead to being profitable. Today we are aware that being philanthropic is in many ways associated with being profitable. The reason for that could be found in the notion that there are many products and services which don't get distinguished by the quality or its distribution but can gain competitive advantage with some extra value such as philanthropy. Rethinking the concept of CSR should also include classification of the associated theories by the Garriga and Mele' (2004): 1. Instrumental theories – observe corporate social responsibility in the light of organizational wealth and profitability. From that point of view the only organization's responsibility towards society is to be profitable, these theories imply only the economic dimension of relationships between organization and society. They include strategies for achieving competitive advantages, social

investments in a competitive context, natural resource-based view of the firm and dynamic capabilities, strategies for the bottom of the economic pyramid, maximizing the shareholder value and cause-related marketing; 2. Political theories – includes the perspective of organization's responsibility to participate in politics, to accept certain duties and rights. They include corporate constitutionalism, integrative social contract theory and corporate citizenship; 3. Integrative theories – promote the viewpoint that society's growth and maintenance is crucial for existence and development of organization, society and organization are mutually dependent from this point of view. They encompass issues management, the principle of public responsibility, stakeholder management, corporate social performance and normative stakeholder theory; 4. Ethical theories – represent organizational obligation and duty to act ethically towards society. They include sustainable development, universal rights and the common good approach.

The idea of corporate social responsibility is very broadly understood therefore examining the "social" in CSR should give an answer: what does it imply and how it can be determined. The other challenge related to CSR is concerning program outcomes and their definition. In most cases CSR is a part of organizational business plan thus it has to give clear results in terms of return on investment (ROI). Furthermore, these outcomes are observed within the public relations activities and effects. There are many corporate social responsibility definitions which prove that CSR is widely understood and has a different meaning for scholars. CSR "refers to companies taking responsibility for their impact on society. The European Commission believes that CSR is important for the sustainability, competitiveness, and innovation of EU enterprises and the EU economy. It brings benefits for risk management, cost savings, access to capital, customer relationships, and human resource management." (ec.europa.eu, 2015). In shorter terms it is described as organizational responsibility towards society. It is a win-win situation for both – organizations and citizens. CSR is contributing to society by helping to solve certain issues in society. Some of them represent short-term activities while the others are long-term projects. Three basic principles which help to define CSR (Crowther & Aras, 2008): 1. Sustainability – competence of maintaining the balance in certain system and preserving resources for future use, 2. Accountability – implies organizational responsibility towards society, 3. Transparency – organizational business should be known to the publics and necessary information provided. Schrek (2009) argues that the term Corporate Social Performance (CSP) could substitute the term CSR because of confusion regarding what kind of "social responsibility" is assigned to organization. Some contemporary definitions perceive CSR implementation "as a dynamic organizational process to introduce or revise organizational policies and practices to respond to the need for more socially responsible business practices" (Athanasopoulou & Selsky, 2015, pp. 327).

### **3. EMPLOYER BRAND**

The concept of employer branding (Theuer et al., 2016; Cornwell & Lee, 2016; Moroko & Uncles, 2016) implies that there are several business processes and departments integrated when building a brand. For Kryger Aggerholm (2011) employer branding represents a combination of branding processes, human resource management (HRM) and corporate social responsibility (CSR). We should add public relations (PR) as a key communicative link in bonding aforementioned elements. If we analyse the roles of those professions and practices it is clear that both HRM and PR have direct connections with employees. Human resources management (HRM) tasks include: "conducting job analyses, planning personnel needs, recruiting the right people for the job, orienting and training, managing wages and salaries, providing benefits and incentives, evaluating performance, resolving disputes, and communicating with all employees at all levels" (www.businessdictionary.com, 2017), while public relations is focused on "creating and maintaining goodwill of an organization's various

publics (customers, employees, investors, suppliers, etc.), usually through publicity and other nonpaid forms of communication" (www.businessdictionary.com, 2017). Additionally, the branding processes include PR and marketing activities "in creating a unique name and image for a product in the consumers' mind" (www.businessdictionary.com, 2017).

Creating an employer brand includes and assumes establishment of other organizational concepts such as corporate brands. Corporate brands represent "the features of a company that employees, investors, customers, and the public associate with an organization as a whole" (van Riel & Fombrum, 2007, pp. 4). Furthermore, employer brand is by Ambler and Barow defined as:

*"the package of functional, economic and psychological benefits provided by employment and identified with the employing company. The main role of the employer brand is to provide a coherent framework for management to simplify and focus priorities, increase productivity and improve recruitment, retention and commitment."* (in Barow & Mosely, 2005, xvi).

Employer brand is often observed through various dimensions which point out the complexity of its creation. Biswas and Suar (2014) emphasize three main components of employer brand:

1. employer brand equity,
2. brand loyalty and employee engagement,
3. attraction and retention of talents

Even more expanded is the concept of "employer brand wheel" (Mosely & Barow, 2005) representing a mix of brand tools: vision and leadership; policies and values; fairness and cooperation; corporate personality; external reputation; communication; recruitment and induction; performance management; development; working environment; reward system; post-employment.

We can see that the role of communication and public relations is present on several levels. Employee engagement, in fact their motivation, can be encouraged through communication activities (internal communication). Attraction of new competent employees is supported with public relations activities (media relations), while external reputation needs to be earned but also communicated to different publics.

Dabirian et al. (2016) offer a contemporary approach to employer branding by emphasizing seven criteria for employer brand development:

1. social value – represents the quality of organizational culture and the co-workers
2. interest value – the level of set organizational challenges and goals
3. application value – the degree of meaningful work and activities
4. development value – the level of opportunities for professional development
5. economic value – the expectations about the income
6. management value – the level of satisfaction with managers and their competencies
7. work/life balance - the expected balance of personal and professional life

Building strong employer brand consequently leads to certain benefits for complete organization. Employer brands can help in reducing costs through higher employee engagement and better performance, while customer satisfaction is associated with higher employee engagement and also finally (ROI) - financial results correlate with higher employee engagement (Barow & Mosely, 2005).

Employer brand is derived from employer's image whereas employer image takes part in a "broader multidimensional construct of organizational image" (Lievens & Slaughter, 2016). Organizational image (Jakopović, 2016; Stacks, 2006; Grunig, 1993) represents an impression

of organization in the mind of individual. Moreover, it is distinguished from employer familiarity and reputation. "Employer familiarity/awareness is a necessary precursor of employer image and reputation" (Lievens & Slaughter, 2016, pp. 409). Organizational identity represents a stepping stone from where the image is created. That is the employees' and employers' perspective on what they are, how they see themselves. "Therefore Lievens and Slaughter point out that the identity is what employees "perceive to be core characteristics, whereas image deals with an outsider's beliefs" (2016, pp. 410).

#### 4. BEST EMPLOYER AWARDS AND THEIR TRUSTWORTHINESS

The sum of the efforts concerning employer brand are at the peak and most visible through best employer awards. These awards, given usually for the best employer in the country, have the attribute of trustworthiness because they are research-based. On the other hand very often these results appeal to mainstream media and they are keen to disseminate survey results. Survey actually represents one of the public relations techniques (Tomić, 2016) for gaining publicity. Cable & Yu (2006 in Lievens & Slaughter, 2016) point out that media have influence on perceived company image and presence in mainstream media can contribute more to employer image and brand than official website. Saini's et al. (2014) findings indicate that organizations on the top of the best employer lists have significantly higher number of a applicants for a job, whilst organizational familiarity is a crucial predictor of applicants intentions. The organizational use of social media also positively correlates with corporate reputation, whereas this is positively associated with intentions to apply for a job (Sivertzen et al, 2013) (see also Van Hoyer et al., 2013).

The results are newsworthy if they bring something new (newest trends) and consist of information that are relevant and have certain impact on citizens (according to journalists' and editors' news values). What is even more important that employer award surveys (see also Love & Singh) represent the voice of employees that is not so often heard in public. Their public exposure is often associated with negative acts for company such as strikes and protests. The employer awards emphasize positive aspects of the organizational business. Employees can be perceived as an authentic company's "spokespersons" because they share first-hand experience about organization with the people they know. Consequently, there family and friends will disseminate information about company to others.

The most recognized Croatian best employer award is founded by the website MojPosao<sup>1</sup> ([www.moj-posao.net](http://www.moj-posao.net)). Their "The best employer award" is awarded every year in several categories: 1. Large companies, 2. Medium companies, 3. Small companies. Publicity that this award gets is very widespread, what is confirmed with numerous news sites in Croatia that reported on this topic (such as [poslovni.hr](http://poslovni.hr), [dnevnik.hr](http://dnevnik.hr), [net.hr](http://net.hr), [vecernji.hr](http://vecernji.hr), [index.hr](http://index.hr), [nacional.hr](http://nacional.hr)...). Survey research among employees was conducted on the sample of 5100 employees in 2016 ([zadovoljstvozaposlenika.hr](http://zadovoljstvozaposlenika.hr), 2017). The questionnaire is consisted of introduction and explanation of procedure, demographic and socioeconomic questions and 78 claims that are distributed within 9 categories ([zadovoljstvozaposlenika.hr](http://zadovoljstvozaposlenika.hr), 2017):

- Level of task difficulty
- Employee loyalty
- Work organisation
- Working conditions
- Personal growth and development

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<sup>1</sup> »Today, MojPosao is among top 20 most visited websites in Croatia, with more than 750.000 monthly visitors. So far, more than 54.000 clients started their recruitment process through MojPosao. MojPosao is operated by Tau on – line Ltd. which is part of Alma Career.« ([www.moj-posao.net](http://www.moj-posao.net), 2017)



- Inclusion in the decision-making process
- Work commitment
- Human relations
- Corporative communication

Moreover, there is a special unit "Employee engagement" (zadovoljstvozaposlenika.hr, 2017) consisted of four aforementioned categories - Personal growth and development, Inclusion in the decision-making process, Human relations and Corporative communication. These categories are associated with corporate social responsibility because CSR should create programs to enable employers' growth. Additionally, employees could be included in decision making processes on certain level through CSR programs. This does not necessary imply that they will be involved in every decision that organization makes, but certain level of involvement should make an impact on employers sense of importance within the company. Human relations and corporative communication can also be observed in a light of corporate social responsibility. Public relations and human resources department have a crucial role in maintaining goodwill among employees and creating effective communication procedures. Corporative communication makes a complex set of management, organizational and marketing communications (van Riel & Fombrum, 2007). We can add that category "working conditions" could be also associated with CSR programs and establishment of better working environment with different CSR approaches and techniques.

The Croatian "best employer award" winners for 2016 in category of large companies were multinational corporations (www.moj-posao.net, 2017):

1. dm-drogerie markt<sup>2</sup>
2. Deichmann trgovina obucom<sup>3</sup>
3. IKEA Hrvatska<sup>4</sup>

Corporate social responsibility in dm-drogerie markt is mostly associated with Götz Wolfgang Werner's philosophy. The owner of dm-drogerie markt took over family drugstore and named it DM<sup>5</sup> (basic-income.net, 2017). He is known by his book and principle "1000 Euros for everyone"<sup>6</sup> (Werner, 2010) which he implemented in practice. His principle and advocacy is based on the idea that every employee, no matter in which country, should have minimally thousand Euros monthly salary (večernji.hr, 2017). This suggested minimal salary allows certain level of individual freedom and satisfaction in the European context.

Deichmann declares that they train their employees for "above-average performance and to handle their jobs in an entrepreneurial, independent, results-oriented way" (corpsite.deichmann.com, 2017). This is also associated with above-average salaries, opportunities for additional training and education, health insurance, high pensions and relief fund if employees find themselves in sudden occurrence (corpsite.deichmann.com, 2017). Their

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<sup>2</sup> »dm-drogerie markt GmbH + Co. KG distributes cosmetic, drugs, and other miscellaneous products. The company was founded in 1973 and is based in Karlsruhe, Germany«. (www.bloomberg.com, 2017)

<sup>3</sup> »Deichmann has been a family-owned business since 1913 and will continue to remain independent. The business started over 100 years ago in Essen, Germany in the Ruhr river area. This is still the headquarter for the group of companies. Deichmann is currently active in 24 countries with approximately 3,800 stores and employs around 38,252 people. Deichmann is the market leader in the German and European shoe business.« (corpsite.deichmann.com, 2017)

<sup>4</sup> Our business idea is "to offer a wide range of well-designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them".(http://www.ikea.com, 2017)

<sup>5</sup> Drogerie Markt

<sup>6</sup> »1.000 Euro für jeden: Freiheit. Gleichheit. Grundeinkommen«

approach is based on employees' constant growth, certain degree of independence and self-initiatives in doing business.

IKEA has some unique benefits for their employees. First of all they are represented as "co-workers" which can symbolise equality between employees. Personal development is part of the job therefore IKEA employees can participate in various internal training programmes and with their manager create development strategy for year to come and the future (<http://www.ikea.com>, 2017). Except that, employees get special discounts if they shop in IKEA, they branded employees' time for relaxing and hanging out as "fika" – Swedish traditional coffee, pie or cake brakes. Furthermore, they conduct a programme named "IKEA backpackers" which is developed for preparing their leaders and specialists for new challenges by assigning them in two countries for duration of six months (<http://www.ikea.com>, 2017). These embraced CRS techniques focused on employees and perception of a co-worker actually emphasizes the respect that is given to them.

America's Best Employers research is conducted by Statista and Forbes (2016). Their methodology for the year 2016 included 500 employers and 25 industries from USA, while survey research included sample of 30,000 employees working in a large companies with 5,000 and more workers ([www.forbes.com](http://www.forbes.com), 2017). Winners in 2016 were:

1. Marathon Petroleum<sup>7</sup>
2. Google<sup>8</sup>
3. JetBlue Airways<sup>9</sup>

Marathon Petroleum is an awardee for 2016 as a best employer in USA. They show extraordinary care for their employees practically from the day they are employed till their death. In favour to that is a list of different structured plans for employees: Thrift Plan, Health Plan, Retirement Plan, Dental Plan, Vision, Assistance Plan, Sick Benefit Plan, Long Term Disability Plan, Occupational Accidental Death Benefit Plan, Life Insurance Plan, Contribution Conversion Plan, Wellness Plan, Accidental Death and Dismemberment Insurance Plan, Educational Reimbursement Plan ([www.marathonpetroleum.com](http://www.marathonpetroleum.com), 2012). Except that, they offer other benefits such as work schedule which is flexible and different programs for employees' growth. Their CSR approach towards employees can be described as a family based relationship.

Well known organizational culture of Google is reflecting in their relationship with employees who are called "Googlers" ([careers.google.com](http://careers.google.com), 2017). Their approach includes wellness, healthcare such as physicians, chiropractic, physical therapy, and massage at the place where employees work. Moreover, they encourage donations and volunteer work, lifelong learning through personal and professional development ([careers.google.com](http://careers.google.com), 2017). Google also provides flexible workday and financial advisors for their employees. Employees are represented as extraordinary and unique through the concept of "Googlers".

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<sup>7</sup> »Marathon Petroleum Corp. is an independent petroleum product refiners, marketers and transporters in the United States. The company operates through three segments: Refining & Marketing, Speedway and Pipeline Transportation.« ([www.forbes.com](http://www.forbes.com), 2017)

<sup>8</sup> »Google, Inc. focuses on improving the ways people connect with information. It provides variety of services and tools for advertisers of all sizes, from simple text ads to display and mobile advertising and to publishers, whether small or large. The company primarily focuses on the areas which include search, advertising, operating systems, platforms, enterprise and hardware products.« ([www.forbes.com](http://www.forbes.com), 2017)

<sup>9</sup> »JetBlue Airways Corp. provides air transportation services. It carries more than 30 million customers a year to 86 cities in the U.S., Caribbean, and Latin America with an average of 850 daily flights.« ([www.forbes.com](http://www.forbes.com), 2017)

JetBlue Airways is also identified as caring employer because they cover two main categories that are important in life (work-here.jetblue.com, 2017):

1. Health (Medical, dental and vision insurance, Full-time prescription coverage, Group legal, Flexible spending, Life insurance, Short-term and Long-term disability insurance, Pilot loss of license, Disease management programs)
2. Wealth (401(k) plan, Roth 401(k), Self-directed accounts (SDA), Profit sharing, Employee stock, purchase plan, Voluntary discount programs)

JetBlue Airways is combining those two categories for achieving employee satisfaction.

When it comes to Best Employers in the United Kingdom for 2016, Statista and Bloomberg (2016) have conducted survey research among 15,000 employees in 1,600 companies located in UK.

The research results show that first three best employers in UK are also British companies (www.statista.com, 2016):

1. Jaguar Land Rover<sup>10</sup>
2. AstraZeneca<sup>11</sup>
3. Harrods<sup>12</sup>

Jaguar Land Rover is known as a prestigious car brand. Except lifelong learning, the company offers support services in case of relocation and moving (www.jaguarlandrovercareers.com, 2017). Other benefits include privilege car purchase scheme, pension scheme, flexible working and family-friendly policies, sports and other facilities, minimum of 25 days a year for holidays (www.jaguarlandrovercareers.com, 2017). Except regular benefits, Jaguar Land Rover can be mostly recognized as a family-friendly oriented company. AstraZeneca as a part of biopharmaceutical industry is oriented on employee growth through development and retaining talents, support in case of relocation, diversity in terms of gender, ethnicity and culture, care for human rights, health and safety, supporting safety driving (www.astrazeneca.com, 2017). In AstraZeneca case is specially accented the CSR approach of equality and human rights policies. Harrods represents a luxurious retail brand. Company programs for employees include: staff discount, rewards card & business clothing allowance, season ticket loans for public transport & childcare, holiday, birthday days & weddings, fine dining & culture with special employee cards, health service and investments for the future and retirement plan (www.harrodscareers.com, 2017). As Harrods symbolises luxury, their philosophy towards employees seems to be on the trace of partially enabling such a lifestyle through benefits.

## 5. DISCUSSION

There is still lack of agreement concerning the corporate social responsibility role and area of activity. The future practices should be more directed towards defining CSR performance, especially in the employee domain. The overview of different best employer surveys (Croatia, UK and USA) indicate that they are methodologically trustworthy instrument for measuring best employer practices but also CSR activities and projects. Results show that multinational corporations are aware of the employee engagement and its significance for the business. The

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<sup>10</sup> »Jaguar Land Rover is the UK's largest car manufacturer. Taking British ingenuity, craftsmanship and innovation to markets around the world.« (www.jaguarlandrover.com, 2017)

<sup>11</sup> »AstraZeneca is a global, science-led biopharmaceutical business and our innovative medicines are used by millions of patients worldwide.« (www.astrazeneca.com, 2017)

<sup>12</sup> »Harrods is a leader in luxury retail. Attracting customers from around the world, the iconic department store, owned by Qatar Holding, continues to surpass the expectations of its visitors and offer an unparalleled shopping experience to all who walk through its doors.« (http://www.harrodscareers.com, 2017)

ones on the top of best employers' lists represent strong employer brands. They have structured plans for their employees in every stage of their life (health plans, retirement plans, financial plan and projects for professional and personal growth). This kind of care is in certain way represents an imitation of a family. They made a brand of their employees by calling them "Googlers" but also gave them respect by naming them "co-workers". Employer brand is negotiated mostly through the media and therefore the employer surveys can gain publicity and have significant media impact. Publicity could be first of all associated with attraction of talented and competent employees but also with higher employee engagement (performance). The role of public relations is significant in bonding different parts of the employer branding processes (which includes human resources and marketing) and within CSR programs directed towards employees (especially through corporate communications and human relations).

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## **Entrepreneurship Caught Between Creativity and Bureaucracy**

## STRENGTHENING BUSINESS PARTNERSHIPS OF SMES EMERGED FROM PUBLIC PROGRAMS THROUGH RELATIONAL COORDINATION MECHANISMS

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### ABSTRACT

*In Latin America the low number of formal SMEs causes reduced rates of economic growth. In order to fight unemployment and social exclusion, Latin American countries have introduced public policies and programs focused on the Social and Solidarity Economy. One of this programs is "Spinning the Development" implemented by the National Institute of the Popular and Solidarity Economy from Ecuador. The objective of this program is to eliminate barriers to early childhood and basic level education by giving free uniforms to pupils. Additionally, the program aims to improve live conditions of micro and small size companies from the textile and clothing manufacturing sector by offering them the possibility to access public contracts for the production of scholar uniforms. The first years' results of the implementation of this program show that the contracts closed with sole proprietorship have not contributed to strengthening these businesses. In the last cycle 2015-2016, the program has given priority in the award of contracts to formal business partnerships. This practically presses these businesses to work on partnerships, which is contrary to the concept of a partnership based on the voluntary union of people for reaching a goal. Therefore, for a long term survival of these partnerships, their goal must go beyond of achieving public contracts for the production of uniforms. In this research the relational coordination model has been applied to evaluate the quality of relationships among the partners belonging to business partnerships from the program "Spinning the Development" in Tungurahua, Ecuador, and its impact on perceived advantages and satisfaction with the partnership results. By using a Structural Equations Model analysis it is shown that through relational coordination mechanisms business partnerships can improve the quality of relationships among their partners, the perceived advantages of the partnership and the satisfaction with its results.*

**Keywords:** Latin America, public programs, SMEs, Social and Solidarity Economy, relational coordination

### 1. INTRODUCTION

Small and Medium Sizes Enterprises (SMEs) play an important role in the economic growth of both developed and developing countries. According to ILO (2015), there are between 420 and 510 million SMEs worldwide, from which 9% are formal SMEs. The highest number of SMEs, 80%-95%, is located in low- and middle- income countries.

In Latin American countries, a large number of micro-businesses exists and some large businesses, but few formal SMEs (ILO, 2015). The problem of developing countries is that

these informal micro-businesses are not growing. The missing of medium-size enterprises causes low productivity and reduced rates of economic growth.

In the last years, the interest of Governments for the incorporation of Social and Solidarity Economy (SSE) in the public policies design has grown worldwide, but especially in Latin American countries as a solution for poverty and social exclusion. Some countries, such as Ecuador and Venezuela, have decided to adopt SSE as a whole, meaning that they gave it constitutional and legal recognition, created specific national public organisms and developed public policies.

The Ecuadorian economy is dominated by micro-businesses, who represent 90.6% of the total number of businesses (Statistics and Census National Institute of Ecuador, 2015). This aspect, together with the fact that its economy is based on the production and exports of primary goods, has placed the country in an inferior position compared with its competitors from South America, which has prevented its entry in international markets. Despite of important progresses in social and economic indicators, Ecuador still suffers of high poverty rates and social exclusion (National Institute of Popular and Social Economy-IEPS, 2014a). Therefore, the Government has developed programs focused on SSE aimed to increase the access to jobs for people with high risk of poverty and social exclusion and improve their living standards.

One of these programs is "Hilando el Desarrollo" (Spinning the Development), which is implemented by the IEPS and it aims to improve the living standards of micro and small artisans from the textile manufacturing sector (IEPS, 2013). Additionally, the program aims to remove barriers for the access to education. For this purpose, students of early childhood education and of basic education receive free uniforms produced by these artisans (IEPS, 2014b). The Government has also contributed to the creation of new businesses with sole proprietorship in this sector by offering a grant in value of \$1.200 for the acquisition of sewing machines and all the necessary inputs for the production of uniforms (Andes, 2013).

The Ministry of Finance of Ecuador (Ministerio de Finanzas, 2015) informed that, by the end of 2015, the amount accumulated in the "Spinning the Development" program was of \$223.251.101,71 for the production of 8.021.043 school uniforms kits. Within the program, they have closed a total of 13.628 contracts with artisans, micro and small producers, which have generated an average of 56.378 jobs. The region of the country with the larger number of beneficiaries of the program "Spinning the Development" was Zone 3, comprising the provinces Cotopaxi, Chimborazo, Pastaza and Tungurahua. In this region, 737.169 school uniforms have been produced with a total investment of \$17.582.305,76.

Four years later since these businesses have had access to public contracts for the production of school uniforms, IEPS has got to the conclusion that the small contracts closed up with artisans have not contributed to the strengthening of this sole proprietorship businesses, because they generate only minimal profits. Since 2015-2016 cycle, the program "Spinning the Development" is giving priority to business partnerships belonging to IEPS in the allocation of contracts (IEPS, 2015) to help these artisans to have higher earnings in order to strengthen their businesses. The problem is that this decision is forcing the artisans to organize themselves in partnerships in order to remain eligible for public contracts, which is contrary to the concepts of Solidarity Economy and business partnerships, which are based on the voluntary union of persons for the achievement of a common goal.

As literature shows, the success of cooperation between firms depends on the definition of objectives, communication and trust. Therefore, for a long term survival of the businesses partnerships emerged from the program "Spinning the Development", their goal must go beyond of the achievement of public contracts for the production of uniforms and must be sustained by relationships of quality. Hence, apart from the economic aid and the legal advices for the creation of SSE association, IEPS must help them to create partnerships with strong ties



that will enable these micro and small entrepreneurs to extend cooperation beyond the access to contracts for the production of school uniforms.

In this research, the relational coordination model has been applied to evaluate the quality of relationships among the artisans belonging to these business partnerships in the province of Tungurahua, Ecuador. The objective is to analyze if relational coordination mechanisms have a positive impact on perceived advantages and the satisfaction with the partnership results.

## **2. BUSINESS PARTNERSHIPS AND RELATIONAL COORDINATION**

Scholars, such as Borzaga & Tortia (2007) and Moraes Soares et al. (2016) have shown that the organization of the businesses belonging to SSE in networks that complement the individual action is important for their future success.

Experiences of Latin American countries, such as Mexico and Chile, have demonstrated that the associative forms of production, with the direct participation of micro, small and medium enterprises have generated an increase in their production and competitiveness, enabling their insertion in the international market (MIPRO, 2014).

Mora, Montoro & Guerras (2004) performed a literature review to identify the main factors that can determine the success of cooperation agreements amongst organizations of different nature. They identified two types of factors: contextual factors and organizational factors.

Contextual factors include: previous experience, reputation, definition of objectives, institutionalization and geographical approach. On the other hand, organizational factors are represented by: determination, communication, trust, conflict and dependence.

Therefore, the intangible aspects in cooperation agreements should be also considered important for the final outcome. Sharing objectives amongst the partners, practicing mutual respect and establishing appropriate mechanisms for knowledge sharing and having a communication of quality are key elements to orient efforts of the different agents to reach the project (De Pablos, Soret, & Montes, 2014).

The relational coordination model offered by Gittell (2002) and derived from the relational coordination (RC) concept can become a helpful tool to measure and encourage effective coordination amongst different partners. It is based on the relationships of people - who are emotional beings. For this reason, it attempts to group together all the connections between them, not merely as a task, tool or technical need, but rather in real ways to enable people to work efficiently. Relational coordination is formed side by side with work coordination, in all aspects of the relationship. It recognizes, therefore, the need for the relational side of coordination to achieve organizational effectiveness.

The model is structured around two types of dimensions: communication and relationships. Within the dimension of communication, it is included:

- Frequent Communication: Frequent communication helps to establish relationships via roles through the closeness generated as a result of repeated interaction.

- Timely Communication: Delays in communication may have negative implications for organizational performance; hence the importance of communication occurring at the right time, for the successful development of organizational tasks (Waller, 1999).

- Accurate Communication: In the context of relevant information, this plays a critical role in the effectiveness of a group's task performance (O'Reilly & Roberts, 1977).

- Problem-Solving Communication: Effective coordination requires those involved in the task to engage in communication to solve the problems that appear in a group's performance with a high level of interdependence, rather than blaming the others involved or evading responsibilities. This can lead to negative consequences that particularly affect performance (Deming, 1986).

On the other hand, in the relational dimensions in Gittell's model we can find:

-Shared Goals: They play a key role in the coordination of highly interdependent tasks (Wagemann, 1995). Using a set of shared goals in the work process, the individuals involved create ties that allow them to reach conclusions that are compatible with the different ways of thinking and acting when new information is made available.

-Shared Knowledge: While Dougherty (1992) points out that communication among those involved in the various tasks that constitute a process is not always effective because of different social backgrounds, training and experience, Gittell (2009) states that when members know how their tasks are related to those of the other members in the same process, it creates a dynamic in which everyone knows the impact that each change will make on each task and each role.

-Mutual Respect: Respect for the competence of others involved in the process provides a powerful tie that will be implemented in a comprehensive way across the whole process, generating, as a result, effective coordination (Gittell, 2009).

Through this design, the RC model becomes a model of intensive coordination in communication and relationships, which is particularly useful to achieve higher levels of performance with high levels of interdependence when faced with tasks, uncertainty and time constraints. It is therefore an example of process improvement, which allows a working group, department or organization to raise their potential production to higher levels.

Relational coordination works on the concept of a team. Normally, people are too individualistic and pay insufficient attention to their interdependence and thus to the need to work together. Organizational learning is interpersonal and relational, and often involves learning to coordinate work in a new way. For a system to work well, people have to recognize that they are interdependent (Gittell, Edmonson & Schein, 2011).

The relational coordination model can be of interest to achieve excellent results in organizations or organizational processes where high levels of task interdependence (Thompson, 1967), uncertainty (Argote, 1982), time restrictions (Adler, 1999) and tacit knowledge (Nonaka & Takeuchi, 1995) are required. These are also characteristics of business partnerships.

The RC model has been applied to different organization from several sector, such as, airlines (Gittell, 2003), healthcare (Gittell, 2009; Gittell, Seidner, & Wimbush, 2010), cloud computing (De Pablos Heredero et al., 2014) and education (Margalina, De Pablos Heredero, & Montes Botella, 2015) proving to be a source of performance.

### 3. METHODOLOGY AND HYPOTHESES

As it has been previously described in the introduction, the main objective of this research is to evaluate the relationship between relational coordination on the quality of relationships among the partners of business associations that belong to the program "Spinning the Development" in the region Tungurahua of Ecuador and its impact on perceived advantages of the partnership and satisfaction with the results.

For the collection of data, a survey adapted from the questionnaire proposed by Gittell (2012) for the measuring of relational coordination has been used. Additionally, the questionnaire includes items regarding perceived business partnership advantages and the satisfaction with the partnership' results.

All the items were measured using a five point Likert scale. The answer choices ranged from 1, as the lowest value, and 5, as the highest. Business partners from 10 partnerships belonging to the program "Spinning the Development" were asked to complete the questionnaire. These business partnerships sump up, together, 170 small entrepreneurs. We received 102 answers, from which 89 were taken in consideration for the empirical study, as the rest of the questionnaires were incomplete. The sample error is about  $\pm 7\%$ , with a level of trust of 95.5% (2 sigma) and  $P = Q = 0.50$ . The answers were collected between January and March 2016.

For the empirical analysis, a Structural Equation Model (SEM) with latent variables has been created. The model has been used for the validation of the following hypotheses:

*H<sub>1</sub>: Relational coordination improves the quality of relationships between the partners of business associations from the program "Spinning the Development".*

Based on Aldakhil & Nataraja (2014) definition, coordination related to business partnerships is the extent to which two or more firms are integrated within a relationship. Coordination has been identified as a key success factor in strategic alliances between companies in the studies performed by Mohr & Puck (2013) and Aldakhil & Nataraja (2014).

Businesses are equally supposed to contribute to a cooperative agreement, but firm's partially conflicting of interest may lead to tensions, that can escalate in uncertainty and distrust (Hsu & Chang, 2014). Gittel's relational coordination model is a model of intensive coordination in communication and relationships, which is particularly useful to achieve higher levels of performance with high levels of interdependence when faced with tasks, uncertainty and time restrictions.

Quality is considered a key factor for successful long-term business relationships (Athanasopoulou, 2009) and it can be defined as the degree of convenience that has a relationship for the stakeholders, when meeting their needs (Moliner, Sánchez, Callarisa & Rodríguez, 2008).

In this research, satisfaction has been used as a measure for the quality of relationships. The partners of the studied business associations have been asked to evaluate their level of satisfaction with the work and contribution of the president, the administrator and the other partners. Mallada González & Collom Gorgues (2010) define satisfaction from the stakeholders' point of view as: the balance of the comparison between the results and expectations, which is based on the perceptions that the different stakeholders have regarding the contribution of others in final results.

*H<sub>2</sub>: Business partners from associations where high quality of relationships are met, perceive more advantages of the business partnerships and are more satisfied with partnership's results.*

Mallada González & Collom Gorgues (2010) have proved in a study performed on three clusters from Spain that relationships of quality improve the cooperation between groups of interests. Firms establish relationships with other firms because they need each other for the achievement of common goals (Andandaleeb, 1996). Most of the partners of the studied business associated decided to involve in an inter-organizational relationships in order to remain eligible for public contracts. If the requirement disappears or the "Spinning the Development" program ends, many of these micro and small businesses may not find any other reasons to continue the partnership. Therefore, the aim of this program to contribute to the growth and strengthening of this business is under treat. For this reason, in this hypothesis it is tested if the quality of relationships improves partner's satisfaction with the partnership's results and increases the perceived advantages of being involved in this type of business relationships.

#### 4. RESULTS

In this research, a structural equation model (SEM) has been created for the validation of the hypotheses with the help of SmartPLS 3 (Ringle, Wende, & Becker, 2015). The model was estimated applying the partial least square (PLS) procedure. PLS Algorithm was chosen because it converges in most of the cases achieving high statistical power even with reduced samples and it is robust against missing data (Henseler, Ringle, & Sinkovics, 2009). Also, minimal recommendations exist concerning sample size and it presents accuracy and non-data multinormality requirements.

As the distribution of PLS is unknown, significance testing must be done with resampling methods. SmartPLS 3 offers the Bootstrapping procedure for the estimation of model parameters and of the standard error of regression paths (Garson, 2016).

Discriminant validity of the model was assessed according with the Fornell and Larcker Criterion. In accordance with this criterion, the correlations between latent variables must be lower than the square root of the corresponding AVE (Fornell & Larcker, 1981). Table 1 shows the square root of AVE inserted in the diagonal cells and the correlations appear below it. As it can be seen, the top number of all factor columns (the square root of AVE) is higher than the correlations below it, therefore discriminant validity is met.

**Table 1. The Fornell and Larcker Criterion**

|            | Advantages  | FC          | MR          | PSC         | QWR         | SG          | SK          | SPR         |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Advantages | <b>0.84</b> |             |             |             |             |             |             |             |
| FC         | 0.80        | <b>0.91</b> |             |             |             |             |             |             |
| MR         | 0.80        | 0.77        | <b>0.88</b> |             |             |             |             |             |
| PSC        | 0.70        | 0.71        | 0.85        | <b>0.80</b> |             |             |             |             |
| QWR        | 0.77        | 0.68        | 0.82        | 0.79        | <b>0.89</b> |             |             |             |
| SG         | 0.79        | 0.72        | 0.84        | 0.79        | 0.87        | <b>0.95</b> |             |             |
| SK         | 0.40        | 0.32        | 0.43        | 0.41        | 0.44        | 0.55        | <b>1.00</b> |             |
| SPR        | 0.82        | 0.71        | 0.77        | 0.68        | 0.81        | 0.84        | 0.34        | <b>1.00</b> |

Internal consistency of the variables was measured by Cronbach's Alpha and by Composite Reliability (Table 2). All Cronbach Alpha and Composite Reliability take values over 0.70, the minimum value recommended (Henseler et al., 2009), therefore all the eight variables present internal reliability.

**Table 2. Construct Reliability, Validity and R Square**

|            | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) | R Square |
|------------|------------------|-----------------------|----------------------------------|----------|
| Advantages | 0.93             | 0.94                  | 0.71                             | 0.59     |
| FC         | 0.89             | 0.93                  | 0.82                             | 0.59     |
| MR         | 0.86             | 0.91                  | 0.78                             |          |
| PSC        | 0.80             | 0.87                  | 0.63                             | 0.49     |
| QWR        | 0.88             | 0.92                  | 0.80                             | 0.79     |
| SG         | 0.90             | 0.95                  | 0.91                             | 0.30     |
| SK         | 1.00             | 1.00                  | 1.00                             |          |
| SPR        | 1.00             | 1.00                  | 1.00                             | 0.66     |

The Average Variance Extracted (AVE) has been used as a measure for divergent validity. All the AVE values exceed the threshold recommended by Fornell and Larcker (1981), which means variables explain more than half of the variance of their respective indicators.

Statistical significance was sized up by means of 5.000 resampling bootstrap in order to minimize the estimator of standard errors (Hair, Hult, Ringle & Sarstedt, 2014). Table 3 shows the results of the Bootstrapping for all the path coefficients.

**Table 3. Mean, STDEV, T-Values, P-Values**

|                   | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ((O/STDEV)) | P Values |
|-------------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| FC -> PSC         | 0.71                | 0.71            | 0.05                       | 13.86                    | 0.00     |
| MR -> FC          | 0.77                | 0.77            | 0.04                       | 21.33                    | 0.00     |
| PSC -> QWR        | 0.28                | 0.28            | 0.08                       | 3.27                     | 0.00     |
| QWR -> Advantages | 0.77                | 0.77            | 0.05                       | 16.06                    | 0.00     |
| QWR -> SPR        | 0.81                | 0.81            | 0.04                       | 19.98                    | 0.00     |
| SG -> QWR         | 0.66                | 0.65            | 0.07                       | 9.22                     | 0.00     |
| SK -> SG          | 0.55                | 0.55            | 0.07                       | 8.03                     | 0.00     |

As it can be observed in Table 8, all the relations between the latent variables composing the model are statistically significant with t-values higher than the 1.96 limit (5% confidence interval) and all p values < 0.05. This means that all the hypotheses are validated, but, the overall effect size measure for the structural model is given by the R Square values (Table 2). In the case of the first hypothesis ( $H_1$ ), the results show that 79% ( $R^2 = 0.79$ ) of the variance of the quality of work relationships (QWR) is explained by the dimensions of the relational coordination model. Problem solving communication (PSC) and shared goals (SG) have a direct impact on the variable QWR, while the other dimensions are indirectly related with its variance. 50% ( $R^2 = 0.50$ ) of the variance of the variable PSC is explained directly by the variance of the variable frequent communication (FC), and indirectly by the variable mutual respect (MR), which correlation with the FC is of 60% ( $R^2 = 0.60$ ). Shared knowledge (SK) has also an indirect effect on QWR, as 31% of the variance of shared goals is explained by SK.

The results detailed above confirm the definition of relational coordination given by Gittell (2002: 301) "*as a reinforcing process of interaction between relationships and communication carried out for the purpose of task integration*". It also confirms that mutual respect has a positive effect on the quality of communication, as it increases its frequency. It also proves that through relational coordination high satisfactory relationships can be achieved among business partners.

The results for the second hypothesis indicate that 59% of the variance of the variable Advantages is explained by the variable QWR. The relationship is even higher in the case of the satisfaction with partnership's results (SPR), as 66% of the variance of this variable is explained by QWR.

## 5. CONSLUSION

The problem of developing countries, such as those from Latin America, is their large micro businesses that do not grow. Some of these countries have decided to support the creation of new micro-businesses and give access to these type of businesses to public contracts through programs based on the SSE. The problem is that the sole propriertoship businesses that participate in these program are not growing and are not creating more jobs. This is also the case of the program "Spinning the Development" from Ecuador. Additionally, this program tries to promote the partnership among the micro businesses, by giving priority to SSE business partnerships in the assignment of public contracts. But, with no other goal for these businesses, these partnerships could disappear if the program ends.

This new objective of the program it can only be achieved through a long term relationship between the artisans and IEPS and taking also into account intangible factors.

In this research, the relational coordination model has been applied to evaluate the quality of relationships among business partners from the associations belonging to the program "Spinning the Development" from the province of Tungurahua, Ecuador. It has also been analyzed if high quality relationships can increase the perceived advantages of the business partnerships and improve their results.

The results of this study show that the quality of relationships can be improved through relational coordination mechanisms, as problem solving communication and shared goals are key dimensions for the improvement of the quality of relationships in business partnerships. The relationships between partners must be based on mutual respect, as it increases the frequency of communication. Shared knowledge is also important, as when partners achieve to cooperate sharing with others information and knowledge, they also work together for the achievement of shared goals.

IEPS can help these partnerships to implement relational coordination mechanisms. IEPS must not only give advices to the micro and small entrepreneurs in the legal procedures of a

partnership establishment as it does in present, but must also help them to find the best mechanisms for the achievement of a proper level of coordination of their activities. IEPS can also encourage the specific knowledge sharing of the sector among these artisans, by organizing events with the aim of bringing them together.

The results also show that the quality of relationships has an impact on the perceived advantages of the partnership. Therefore, IEPS must promote other partnership advantages among these entrepreneurs and how they can keep good quality relationships. Another factor that can influence the success and survival of these partnerships is the satisfaction with the results. And the research proves that through high quality relationships business partnerships can achieve satisfactory results.

This research proves that relational coordination has not only the power to transform relationships in business partnerships and improve their results, but it can also help to transform the economy of an entire region. If the business partnership from the program "Spinning the Development" in Tungurahua will survive, these micro and small businesses will have more opportunities to grow, jobs will be created and the standard living of many people from the region will be improved.

The results of this study are important, but the investigation presents some limitations. First, we had difficulty in obtain complete answers to the questionnaire and, therefore, the sample represents 52% of the total numbers of micro and small entrepreneurs participating in the program. Secondly, the study has been done only in one province of Ecuador and it should be extended to other provinces.

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## IF - THEN SCENARIOS: SMART DECISIONS AT SMES

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### ABSTRACT

*In the last few years the behavioural economics has been closing up to the traditional economics which must count and measure everything. We can observe this phenomenon in the field of the business decisions where the bounded rationality was recognized by Herbert Simon (1982). Nowadays Simon's thesis has just been turning into smart decisions. What makes a business decision "smart" and whether we can support this kind of decisions efficiently at SMEs or not?*

*The actuality of these questions comes from the fact that we can recognize a paradigm shift much less in the field of business making than in the info-communication in the last few decades. Experts are convinced that in the field of decision supporting there is an upcoming paradigm shift whose main point is that the models, based on the allocation of scarcity resources, have lost their relevance in the time of abundance, more precisely they have over-swelled their domain (Velencei, Baracska, 2016). So studies and researches show that in the time of abundance the keys to a smarter complex decision making are the behavioural patterns which can be recognized by for example knowledge-based expert systems. According to Daniel Kahneman, as one of the most respected behavioural economists, the model of intuitive decision-making, as pattern recognition, is a further developed form of Herbert Simon's thesis (Kahneman, 2011).*

*C.K. Prahalad and Gary Hamel ask the question in the prestigious Strategic Management Journal (Prahalad, Hamel, 1994) "Why search for a new paradigm?" Actually why is a new management paradigm necessary? Probably we will see the innovations in another way through new eyes and perhaps we can support the intuitive decisions not only at large enterprises but also at small and medium ones by these knowledge-bases and patterns in them.*

**Keywords:** *behavioural economics, decision support, smart decisions, knowledge-based systems, expert systems, SMEs*

### 1. BACKGROUND KNOWLEDGE

It is a widely known fact that SMEs do not often use business consultancy in their operation (Kaufmann and Tödting 2002) (Ates, Garrengo, Cocca & Bititci 2013) and it is particularly true for the field of supporting of complex decisions. In most of the cases they do not even by a special software for it. Executives of these smaller companies, in complex decision making situations, decide typically alone, intuitively and in several cases very quickly. That is less well known, actually they often use very few data, rely on their own experience in these processes, and since they are mostly sensitive to the costs thus the financial aspects are overemphasized in their decisions. The prevalence of these cognitive biases during the decision making processes has been demonstrated in several studies. The thesis of bounded rationality from Simon states that the results of our decisions depend on our human and environmental limitations and capacity, how and from where we collect data (quality of data), and how we process them. He says the result will always be bounded and limited because decision makers will choose the first solution that satisfies minimal expectations so it will not be the best but it can only be a satisfying one. Daniel Kahneman with his co-authors writes about that due to this the result will not be the same in each situation: "Clerks at a bank or a post office perform

complex tasks, but they must follow strict rules that limit subjective judgment and guarantee, by design, that identical cases will be treated identically. In contrast, medical professionals, loan officers, project managers, judges, and executives all make judgment calls, which are guided by informal experience and general principles rather than by rigid rules. And if they don't reach precisely the same answer that every other person in their role would, that's acceptable; this is what we mean when we say that a decision is 'a matter of judgment'" (Kahneman, Rosenfeld, Ghandi, Blaser, 2016, p.39).

The level of using an integrated information management system at SMEs, which can be a source of data in a decision making process, depends on how big the company is. Smaller ones run their business often without well-organized business information, they only use accounting or financial software in many cases. Middle enterprises usually install an integrated system in the middle as a hub, with several satellite software around it and the Big Data solutions have been added to these systems in the last few years. These IT tools usually perform very demonstrative data visualization from the gathered data of the integrated management system but the usability of these charts is uncertain. In several cases the users of these systems have admitted that the main reason why they apply the result of the charts from Big Data tool is that it can be an evidence later if things occasionally go wrong. By now this problem has also been published in the most distinguished business journals, in the Harvard Business Review. "The conventional tools we all learned in business schools are terrific when you're working on a stable environment, with a business model you understand and access to sound information. They're far less useful when you're on unfamiliar terrain – if you're in a fast-changing industry, launching a new kind of product, or shifting to a new business model. That's because conventional tools assume that decision makers have access to remarkably complete and reliable information. Yet every business leader we have worked with over the past 20 years acknowledges that more and more decisions involve judgments that must be made with incomplete and uncertain information" (Courtney, Lovallo, Clarke, 2013, p. 41). These conventional tools do not ensure that during the process of decision making, all data and expectations are provided since what is relevant is known by the decision makers from experience. The other issue is that they cannot quantify that how many times one of the data is more important than the other and this is against the tools based on scoring method and data-weighting, which are used by banks and financial organisations for example for risk analyses as mentioning another type of decision support systems.

In connection with the Big Data hype in the last decade, decision makers should take James G. March's hint (1991) about the irrelevancy of the data, who says that the decision makers collect a huge amount of data, which play a very tiny role or do not play any kind of role in their decisions. It seems March's models are still valid as Tanya Menon and Leigh Thompson write in their article on "How to make better decision with less data" (Menon, Thomson, 2016). They found that "despite all of the data available, people often struggle to convert it into effective solutions to problems. Instead, they fall prey to what Jim March and his co-authors describe as "garbage can" decision making: a process whereby actors, problems, and possible solutions swirl about in a metaphorical garbage can and people end up agreeing on whatever solution rises to the top. The problem isn't lack of data inside the garbage can; the vast amount of data means managers struggle to prioritize what's important. In the end, they end up applying arbitrary data toward new problems, reaching a subpar solution. To curb garbage-can decision making, managers and their teams should think more carefully about the information they need to solve a problem and think more strategically about how to apply it to their decision making and actions" (Menon, Thompson, 2016, p. 76).

According to March, who is best known for his research on organizational decision making, people can remember and recall colourful stories and information more easily than data of statistics. He published several books and articles about how we should think about decisions

and decision making in organizations. He divided this into three major parts. “The first part is based on a vision of decisions as resulting from intendedly rational choice. Such a vision is the dominant portrayal of decisions in social science. This vision of decisions is elaborated by considering developments associated with problems of uncertainty, ambiguity, risk preference, and conflict. The second part of the story is based on a vision of decisions as driven by a logic of appropriateness implemented through a structure of organizational rules and practices, not by a logic of consequence. The discussion of rules and rule following is extended by considering the ways in which rules of behaviour evolve through experience, selection, and diffusion. The third part of the story examines ideas about decision making that challenge standard ideas of decision altogether, visions that picture the outcomes of decisions as artifactual rather than as central to understanding decision making. These visions are exemplified by discussions of networks, temporal orders, symbols, and the development of meaning” (March, 1991, p. 95). Probably we can explain the importance of story-telling and narratives in business decisions by this. Despite the popularity of “Profit First” – theory as a way to think about business, this view has not been adopted by many of those participants. There are people behind every decision with their symbols from their cultural and social backgrounds, with their religions and upbringing as starting points of their expectations. I have to mention the process of knowledge representation when we create new symbols from the previous ones during the whole thinking process. Everything, between the input and output, belongs to the examination of thinking. Transformation of symbols always happens based on some sort of rules. According to Boole’s concept every knowing is derived from logical and arithmetical operations (Velencei, Szoboszlai, Baracska, 2014).

Knowledge representation opened the door for a new paradigm of decision support with the following essence. “Contrary to the world of IS/ICT there was much less change in the world of decision making. And contrary to the world of IS/ICT we believe that the world of decision making a paradigm shift is imminent. The essence of this paradigm shift is that in the era of knowledge abundance the models based on the idea of scarcity of resources are losing relevance and are bound to play lesser and lesser role. Our research to date shows that in smart decisions the emphasis is on behavioural patterns, behind which we recognize patterns of cognition” (Baracska, Velencei, Dörfler, 2014, p. 401). Getting these cognitive patterns, a smart complex decision needs two essential elements. One of them is the experienced decision maker, and maybe some experts and peers from the company, as the most authentic information resources due to that there is everything in their mind and knowledge in *soft* form which is essential for the best result (instead of the countless numerical *hard* information), and just these *soft* data have to be systematized and transformed into applicable input for the reasoning part of the decision making process. First Michael Polanyi introduced the definite terminology for this when he wrote about *tacit knowledge* in his book titled Personal Knowledge (Polanyi, 1958). The other element is an appropriate tool which has to be able to handle these soft data and logical “if...then” rules, from which the knowledge-base of the complex decision will be built. But what type of the decisions can be smart? Certainly not every decision can be made smarter because many decisions do not need a process for getting the best result. Three decision types could be defined based on programmability and structuring according to Herbert Simon (1982), Figure 1 depicts the main features of these decision types.

*Figure following on the next page*

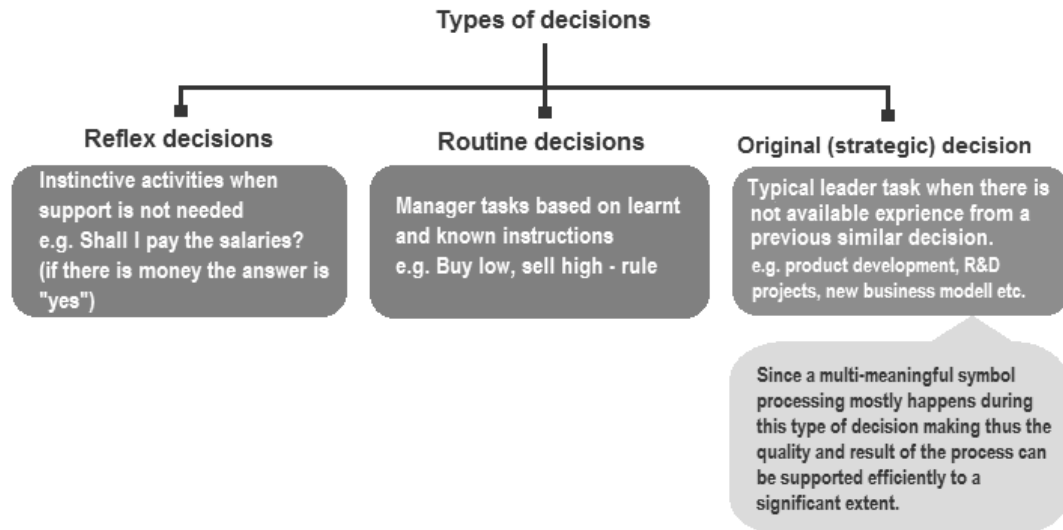


*Figure 1: Decision Types*

The reflex decisions and the routine decisions belong to the “well-structured” problems because that they have a right answer but the original (strategic) decisions are so-called “ill-structured” or “ill-defined” problems thanks to that they do not yield a particular, certain answer.

## 2. SMART DECISION AT AN SME

Getting a convincing answer for my question, whether we can improve smart decisions efficiently at SMEs or not, I demonstrated it in a concrete business case. The examined company operates in a technology intensive field, it manufactures LED lamps and offers services in connection with this. Thanks to the expansion of the past few years the earlier place was grown out and they had to look for a new, appropriate place for their manufacturing activity. The ultimate goal was to support the decision maker in his dilemma where and how to place the new business unit? In this case “How” means what kind of financial construction to choose: renting or buying. I worked with the owner of the mentioned company. At the first step we collected all data: feasible alternatives (called “cases”), attributes (called “expectations”) and after I put them into a knowledge-base through a knowledge engineering process by the Doctus Knowledge-based Expert System tool (Doctus KBS, 2011). This tool consists of two parts, the knowledge-bases and the shell. The shell is an empty software, designed to build the knowledge-bases of the experts. Building a knowledge-base incorporates three processes: Knowledge Acquisition, Knowledge Engineering, which consist of systematization and fine tuning, and Application, all facilitated by Knowledge Engineer (See Figure 2). As Doctus’s developer defined “DoctuS, uses symbolic representation, that is to say symbolic artificial intelligence. The first advantage of symbolic representation of knowledge is that it’s humane. The symbolic logic is the only solution that does not quantify the user’s preferences. E.g. the person, whose knowledge is being modelled, thinks that the beautiful is a better value than the ugly. Nobody thinks that the beautiful is 3,6 times better than the ugly. Using symbolic logic we do state nothing like that. Into the symbolic knowledge base of an expert system we can put the knowledge in form as we talk or think about it. Therefore we get to the second advantage, which is the transparency, easy modification and fine-tuning of the knowledge base” (Baracskaï, Velencei, Dörfler, 2005, p. 61).

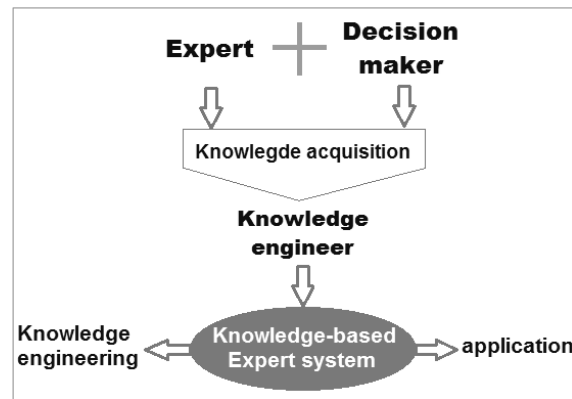


Figure 2: Building a Knowledge Base

Making a complex business decision is required to acquire at least 15-20 relevant attributes each with 3 or 4 values to state that it is sophisticated enough. It is important to give a very familiar label to each attributes and values, it means the decision makers have to use their own expressions instead of conventional ones, and if any of them is too “neutral” the knowledge-base will not be comfortable. We have to consider that not only the number of attributes is decisive but their hierarchy and setup as well. It is particularly important to involve the experts of all main fields of the operation as finance, HR, marketing and so on, and to facilitate a successful collaboration for the sake of formulating the same understanding of the expectations like “financial benefit” is even more essential. Many researches have confirmed that when all experts participates in this phase of the process then the result will be more acceptable for the whole organization. The next step is finalization of the hierarchy of attributes, namely the deductive graph which is depicted in Figure3.

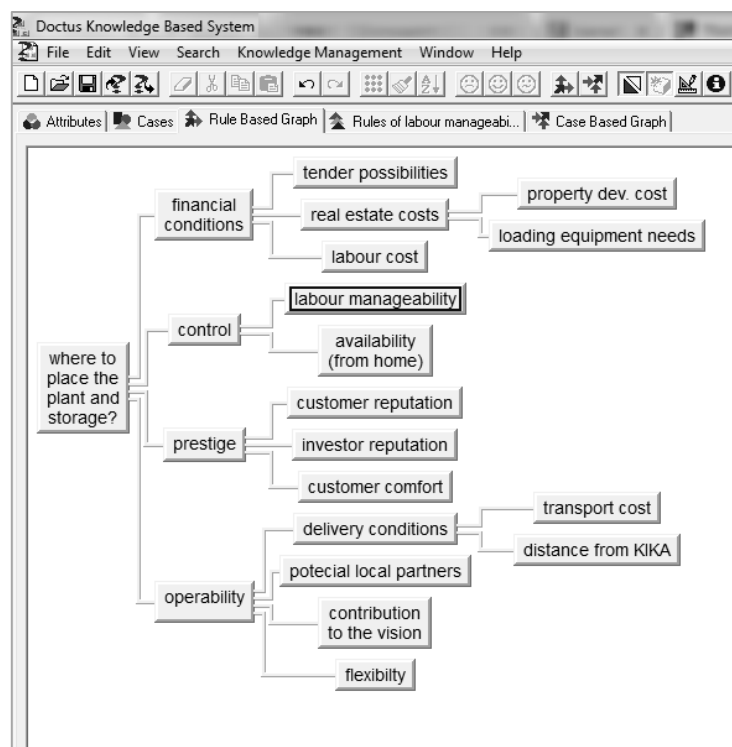


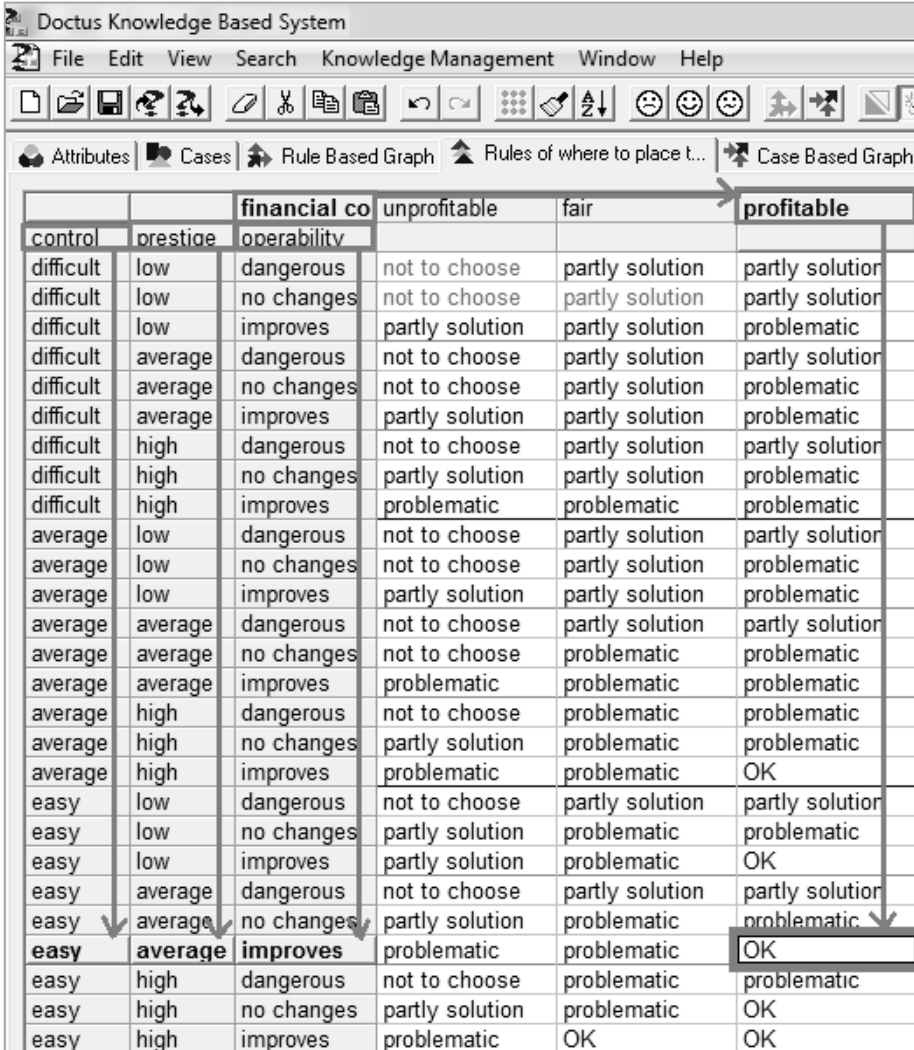
Figure 3: Deductive Graph of attributes

As we can see 21 attributes were collected into four levels, so we can state that our decision is detailed enough. All aspects of business were included into the leaves of the graph as “financial

conditions” aspect, “control” aspect, “prestige” aspect and “operability” aspect as well. There are several attributes which depend on another like “tender possibilities”, “real estate cost” and “labour cost” under the “financial conditions”.

After this we had to articulate the logical rules between the values of input attributes above into causal relationships. In a complex business decision an experienced decision maker does have 1000-2000 rules in their long term memory to be recalled to get the result. Certainly it is not necessary to articulate all rules one-by-one due to the machine learning system which can trigger the next suggested rules based on the previous submitted ones. This trial-and-correction process continues until the decision maker is satisfied with all of the rules. In the current case we articulated 231 rules to get this phase.

The evaluation of cases is called deductive reasoning. In this case, when there is no experience in the decision and we call the situation “original decision” (most of the strategic decisions belong to this group), deductive reasoning or rule-based reasoning is used. In my research the explanation of evaluation can be seen on Figure 4.



|             |                | financial co    | unprofitable    | fair            | profitable      |
|-------------|----------------|-----------------|-----------------|-----------------|-----------------|
| control     | prestige       | operability     |                 |                 |                 |
| difficult   | low            | dangerous       | not to choose   | partly solution | partly solution |
| difficult   | low            | no changes      | not to choose   | partly solution | partly solution |
| difficult   | low            | improves        | partly solution | partly solution | problematic     |
| difficult   | average        | dangerous       | not to choose   | partly solution | partly solution |
| difficult   | average        | no changes      | not to choose   | partly solution | problematic     |
| difficult   | average        | improves        | partly solution | partly solution | problematic     |
| difficult   | high           | dangerous       | not to choose   | partly solution | partly solution |
| difficult   | high           | no changes      | partly solution | partly solution | problematic     |
| difficult   | high           | improves        | problematic     | problematic     | problematic     |
| average     | low            | dangerous       | not to choose   | partly solution | partly solution |
| average     | low            | no changes      | not to choose   | partly solution | problematic     |
| average     | low            | improves        | partly solution | partly solution | problematic     |
| average     | average        | dangerous       | not to choose   | partly solution | partly solution |
| average     | average        | no changes      | not to choose   | problematic     | problematic     |
| average     | average        | improves        | problematic     | problematic     | problematic     |
| average     | high           | dangerous       | not to choose   | problematic     | problematic     |
| average     | high           | no changes      | partly solution | problematic     | problematic     |
| average     | high           | improves        | problematic     | problematic     | OK              |
| easy        | low            | dangerous       | not to choose   | partly solution | partly solution |
| easy        | low            | no changes      | partly solution | problematic     | problematic     |
| easy        | low            | improves        | partly solution | problematic     | OK              |
| easy        | average        | dangerous       | not to choose   | partly solution | partly solution |
| easy        | average        | no changes      | partly solution | problematic     | problematic     |
| <b>easy</b> | <b>average</b> | <b>improves</b> | problematic     | problematic     | <b>OK</b>       |
| easy        | high           | dangerous       | not to choose   | problematic     | problematic     |
| easy        | high           | no changes      | partly solution | problematic     | OK              |
| easy        | high           | improves        | problematic     | OK              | OK              |

Figure 4: Explanation of the result

We can see in Figure 4 the conclusion of reasoning is satisfying thanks to that there is at least one case when the result is “OK”. If there had not been any, we should have continued the fine tuning on the rules to get into this stage. If we could get more than one result with “OK”, we

should also review our rules because in that case the decision maker's way of thinking was not consistent enough. At the last point of the process to make the result accepted by the decision maker we analysed that what kind of influences were generated by each particular attribute on the output.

One of the benefits when we use Decision Support System (DSS) is that the decision will be transparent. It means we can follow the path of our thinking as changing one of the rules it will cause a modification in the result with different probabilities.

### 3. CONCLUSION

The obvious conclusion from this case was that the decision maker was satisfied with the result, he entirely accepted it, and as he said this kind of support meant a really useful guidance for him in his dilemma due to the detailed thinking process. He admitted that he would not have been able to systematize his experience in such a complete form without the DSS and the consultancy. The assumption that another SME in a similar dilemma could efficiently use the knowledge-base of this case, tends to confirm the usefulness of pattern recognition – the new knowledge. Some examples have already been available for these kind of collaborations (Lin, Nagalingam, Kuik, & Murata 2012) however there are also some new findings based on my approach with the knowledge-bases (Tsui, Wang, Cai, Cheung, & Lee 2014) or knowledge management (Lee, Foo, Leong & Ooi 2016). As Peter Drucker writes "Among history-making innovations, those that are based on new knowledge – whether scientific, technical, or social – rank high. They are the superstars of entrepreneurship; they get the publicity and the money. They are what people usually mean when they talk of innovation, although not all innovations based on knowledge are important. Knowledge-based innovations differ from all others in the time they take, in their casualty rates, and in their predictability, as well as in the challenges they pose to entrepreneurs. Like most superstars, they can be temperamental, capricious, and hard to direct. They have, for instance, the longest lead time of all innovations. There is a protracted span between the emergence of new knowledge and its distillation into usable technology" (Drucker, 1985, p. 75). According to Thomas Kuhn (1962) the new scientific theories based on individual inventions and discoveries, like knowledge-based innovations, need at least thirty years to become scientific principles. My main goal in this article is to introduce the new knowledge as the source of innovation and explain how it can help executives.

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## TOWARDS A BETTER UNDERSTANDING OF THE SPECIFIC DETERMINANTS FOR THE GROWTH OF AFRICAN MANUFACTURING SMES

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### **ABSTRACT**

*The objective of this research is to define, conceptualize and analyze some often obscured factors in studies on the growth of manufacturing SMEs in Africa. The specific determinants studied are identified, not only from the pre-collection of data conducted on the field, but also as a result of an analysis of the scientific literature. The variables studied in this research are: business growth (net profit after tax), corporate social responsibility (donations and sponsorships), investment in research and development, use of external expertise, taxation of the business by Government (direct and indirect taxes) and access to energy by businesses. The sample studied concerns the case of 1,025 businesses in the Republic of Benin, between 2008 and 2013. The information collected from the businesses studied emanates from their financial reports over the period covered by the study. Using the random effects panel regression method, this study shows the importance of the factors studied and proposes a contextualized analysis model, based on the selected factors. The results of the random model estimate indicate that the variables referred to as sponsorships, use of external expertise, investments in infrastructure (II) and indirect dues and taxes (IDDT) are significant at different thresholds irrespective of sector. In other words, they have an impact on the growth rates of businesses regardless of their sector of activity. The study also shows the importance of aspects such as the use of external expertise, investments in research and development, and corporate social responsibility for large and very large businesses in the sample studied.*

**Keywords:** *corporate social responsibility, growth of African manufacturing SMEs, investment in research and development, specific determinants, taxes, use of external expertise*

### **1. INTRODUCTION**

Despite a rather traumatic past history, Africa remains a continent with huge but poorly known and exploited wealth (Téné, 2014). Presently, this immense space of over 30 million km<sup>2</sup>, with an estimated population of 2 billion people by the year 2050, 60% of which are less than 15 years of age, is positioning itself as a continent of the future. Therefore, in view of the increasing enthusiasm of multinational companies for the African continent, her importance is no longer to be demonstrated (Atlas of Africa, 2011).

However, today, Africa's development still remains a big challenge. Among many imperatives, the industrialization of Africa is pivotal to all economic developments. In fact, for Africa, industrialization means more than simply increasing income and production volume. It is a means of modernizing the primitive production structure and transforming the entire socio-economic tradition associated with it (UNIDO & UNCTAD, 2011; OECD, 2012). In other words, industrialization would be a means of transition from a low-income economy to an

intermediate-income economy, by transforming the economic structure characterized by predominantly agrarian and extractive activities, to more dynamic and better value added industrial sectors. Among the levers of industrial development that must be acted upon in Africa, the growth of manufacturing companies and especially manufacturing SMEs is primordial. The management of SMEs (MacRobert, 2014) and their growth (Valentin, 2014), access to finance (Kauffmann, 2005; World Bank 2006; Granata et al., 2015), the inability of manufacturing companies to produce and export at the same time due to their small size (Naude et al., 2002), the need to invest on the continent (Ndikumana, 2014), improvement of business climate (Gambotti, 2014) ),etc., all these are the dominant topics of discussions in recent years.

However, in view of the various reforms (Akyeampong, 2014) that are underway on the African continent, as well as the stakes and new challenges (Olawale et al., 2010; Frenk, 2011), doing business requires African SMEs to rethink their strategies, either partly or even completely. This imperative of strategic adaptation presupposes knowing and understanding new and specific determinants influencing African markets. All of these are the reasons that justify carrying out this research.

The general objective of this research is to examine the new and specific determinants necessary for the growth of small and medium-sized African manufacturing enterprises. Specifically, we will test the validity of a theoretical model based on the specific determinants that we have identified with six criteria: 1) the recurrence of the factor or determinant in relation to the articles consulted on African cases; 2) its relevance to the current challenges of the business environment in Africa; 3) access to information for measuring the factors; 4) citations of these factors in the performance, end-of-program and international studies reports in the African case; 5) the recurrence of these concepts in economic fora about the growth of SMEs on the continent and in national business surveys; 6) the perspective of the resource persons that we met during the pre- data collection stage of the study in May 2015. These determinants are:

- internal variables: investment and corporate social responsibility of the company;
- external variables: access to external expertise, fiscal policies of the State and access to energy.

## **2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS**

Businesses growth can be analyzed from two different angles (Penrose, 2009; Patrice Rivard, 2014). According to the authors, the first has to do with increase in quantity (increase in the sales of a company), while the second angle has to do with increase in size or in quality. For the authors, the latter "is seen as the result of a process of development resembling a biological process where a series of internal changes leads to an increase in size and a change in the characteristics of the growing object". In this research, both aspects are taken into account through the selected variables. While treating the issue of growth, several scientific writings lay emphasis on profitability or the quality of internal finance of the firms studied (Okpara, 2011). In this context, closely monitored indicators are related to liquidity, profit margins, stock accumulation or staff movement rate (Lambert et al., 2014, Claveau et al., 2014; Levratto et al., 2014). In fact, several studies show that other factors can be taken into account, depending on the environment and the business sector. These factors can be both tangible such as company's investment (Blomstrom, 2014, Pairault, 2014, Gupta, 2014) and its size (Shamba et al., 2014, Urban, 2014, Ngog, 2015), or intangible such as access to external resources and expertise (Omrane, 2014), and corporate social responsibility (Gond et al., 2014). While attempting to draw attention to this reality, this research proposes a model that is specific to the business environment in Benin Republic, West Africa..

In fact, according to some authors (Milne and Thompson, 1982, Birley and Westhead, 1990, Frank Janssen, 2002), the determinants of business growth are internal and external. We could then deduce that the internal determinants are linked to: the internal organization of the companies (Hannan and Freeman, 1977: 929-964); lack of competent human resources (Cooper, Gimeno-Gascon and Woo, 1994; Woiceshyn and Hartel, 1996; Foss, 1997; Deeds et al., 1997; Ensley, Pearson and Amason, 2002); lack of innovation within the company (Cressy, 2000; Hurst and Lusardi, 2004), and they are also cultural (Moran et al., 2007; Su, 2010), etc.

External determinants are not under the control of firms and can be political, economic, socio-cultural, technological, ecological or legal (Gerry et al., 2011). Several other studies (Aryeetey, 1998, World Bank, 2006) mention the issue of difficulties in accessing finance, which is the first obstacle to the development of businesses in sub-Saharan Africa (SSA), on the list which also includes corruption, infrastructure deficiencies or abusive taxation. Other authors such as (Kauffmann, 2005; IMF, 2006) refer to the inability of these companies to follow the accounting regulations of the Organization for the Harmonization of Business Law in Africa (OHADA), and lack of independent, competent and credible accounting firms which have an impact on the quality of financial information made available to banks.

Although many studies are conducted on the growth of firms, very little attention is being paid to the often obscure factors in the literature concerning the African case. This research seeks to fill this gap by emphasizing the missing determinant factors that could help explain the growth of businesses on the continent. The selected variables are defined and conceptualized below.

### **2.1. Business Growth**

The dependent variable used in this study is called Business Growth. For this variable, Patrice Rivard (2014) states that three measures are commonly used: total sales, number of employees and total assets. But, in general, various indicators, such as profit margins, incomes and others can be used to measure the growth of firms (Lafrance, 2012; Patrice Rivard, 2014). However, Weinzimmer et al. (1998) quoted by Patrice Rivard, (2014), present alternatives for measuring growth. They also give some suggestions to help researchers choose the most appropriate measure according to the data being used. In this case, in order to analyze the growth of companies in our work, we used proxy, which is the net profit after-tax, by calculating the average growth rate of the firm's after-tax net profit for the period 2008 to 2013. Managing business growth is a continuous variable. The minimum and maximum average values between 2008 and 2013 (Min: -497.67, Max: 497.50) mentioned in brackets are those of the companies. The negative (positive) sign represents the decrease (increase) in the company's after-tax net income compared to the previous situation

### **2.2. Company's investment**

According to Muet (1979), the main classical econometric models take into account the perceived or anticipated constraints by firms in the markets where they invest in order to create wealth. That underscores the importance of risk-taking when a company decides to invest in a particular sector. In Africa, nowadays, more and more investments are being made, in this case by the international private sector. (Shen, X. (2015, Usman et al., 2015, Adams et al., 2015, Schoneveld et al., 2015). Most of the scientific literatures consulted, however, only provide information on the effects or impacts of these investments. They do not provide information on the characteristics of local business investment; neither do they say whether the sectors being invested into by companies have a future or not (Atangana, 2001, Yogo 2008, Nanfosso et al., 2014).

According to McKinsey Global Institute (2010), the key sectors in Africa in their order of priority are: goods and services, natural resources, agriculture, infrastructure, and education. According to the research institute, the growth potential of all these sectors, apart from that of education which has not been assessed, is in billions of dollars more than the 2,600 estimated turnover by 2020; and it will generate \$ 980 billion in growth by that time.

That is what justifies the choice of this variable. Thus, while analyzing how the investments made by firms affect their growth, it would also be wise to verify the relevance of this factor at the level of the different sectors, irrespective of the size of the companies, but especially at the level of secondary SMEs. It is for all these reasons that in this study, we chose to analyze the influence of the investments made by companies on their growth. The variable chosen here is therefore the investment made by the company. The investment made by companies in our study is a continuous variable. It takes into account four other variables, namely:

1. Investment in consumer goods and services: This variable takes into account the cost of purchasing raw materials as well as changes in stocks of raw materials of companies. Here, the indicator defined to approximate this variable is the annual growth rate of investment in consumer goods and services over the period 2008 to 2013. Expenditure on consumer goods and services is used as a proxy for companies' investment in consumer goods and services. The minimum and maximum average values between 2008 and 2013 (Min: -259.73; Max: 221.14) mentioned in brackets are those of the companies.

2. Investment in infrastructure: This variable includes the cost of capital acquisitions (land, buildings, transport equipment, work equipment), amounts invested in facilities and fittings, goods and services sales, transport of third parties, personnel, folds, transport inbetween offices and sites, administrative transport, travels. Here, the indicator defined to approximate this variable is the annual growth rate of infrastructure investment over the period 2008 to 2013. Expenditure on infrastructure is used as a proxy for the investment made by the company. The minimum and maximum average values between 2008 and 2013 (Min: -80.13; Max: 181.19) mentioned in brackets are those of the companies.

3. Investment in research and development. This variable includes the costs of in-service professional training, personnel training, research and documentation, patent and software, and consultancy. Here, the indicator defined to approximate this variable is the annual growth rate of investment in research and development over the period 2008 to 2013. The cost of staff capacity building is used as a proxy for the investment in education made by the company. The minimum and maximum average values between 2008 and 2013 (Min: -2.5; Max: 0) mentioned in brackets are those of the companies.

4. Other investments. This variable includes the costs of advertising and publications, as well as receptions and missions. Here, the indicator defined to approximate this variable is the annual growth rate of other investments over the period 2008 to 2013. Advertising and other expenses are used as a proxy for other investments. The minimum and maximum average values between 2008 and 2013 (Min: 0; Max: 0) mentioned in brackets are those of the companies.

### **2.3 Corporate social responsibility**

According to Attarça et al., (2005), the importance of this notion to corporate executives reflects their desire to better control societal constraints and foster business development and sustainable economic performance. Corporate social responsibility is "the voluntary integration

of social and environmental concerns into their business activities and their relationship with their stakeholders" (European Commission, 2001; Attarça et al., 2005).

Several studies have been carried out in the scientific literature on this notion (Carroll, 1979, Capron et al., 2004, Attarça et al., 2005). Among these works, Carroll's integrative model (1979) proposes four strategies that companies deploy in handling their social responsibility. The first is where companies abandon their responsibility, maintain the status quo and resist change. This strategy is called reactive. The second is where they use legal manoeuvres and public relations campaigns to avoid assuming additional responsibilities. This strategy is called defensive. The third is where companies assume their social responsibility only in response to pressure from interest groups or government. This strategy is called accommodation. The fourth is where companies undertake philanthropic initiatives, propose or implement new programs that serve as models in the industry. This strategy is called proactive.

In a way, Collins et al. (1996), in "Built to Last", focus on these philanthropic aspects and participation in social community actions, where they seek to know the secret of those companies that they refer to as visionaries. Therefore, in order to contribute to a better understanding of the concept of corporate social responsibility, some authors study the implementation of these strategies in the context of poverty reduction in developing countries (Pestre, 2010 Faivre-Tavignot et al., 2010).

In this study, donations and sponsorships, which are continuous variables, are used as a proxy to assess the influence of corporate social responsibility on the management of the growth of these firms. Here, two indicators are defined, namely:

1. The annual growth rate of the company's donations from 2008 to 2013. The donations are used as a proxy to assess corporate social responsibility. The minimum and maximum average values between 2008 and 2013 (Min: -288.75; Max: 401.39) mentioned in brackets are those of the companies.
2. The annual growth rate of corporate sponsorship from 2008 to 2013. The sponsorships are used as a proxy to assess corporate social responsibility. The minimum and maximum average values between 2008 and 2013 (Min: -204.70; Max: 13.39) mentioned in brackets are those of the companies.

#### **2.4 Use of external expertise by the firm**

For Viljamaa, (2011), accessibility to external expertise by firms is defined as access to knowledge or skill that is relatively rare within the client-firm. This expertise is provided by an external party. For the author, external expertise includes professional business services as well as consultancy.

In all the studies and theories consulted in the context of access to external expertise by companies (Thong et al., 1996, Schrier, 2006, Ifinedo, 2008, Ifinedo, 2011, Viljamaa, 2011, Fischer et al.), all the authors recognize the crucial role of contribution by external expertise to companies and training auditors, as well as its positive influence on company's performance. The use of external expertise by a company is different from the knowledge transfer within a joint venture, done by individuals who come from parent companies to share their experiences (Prahalad and Bettis, 1986, Lyles and Schwenk, 1992, Huber, 1991).

In this regard, Poulin et al., (1996), discuss the specific characteristics of network company, explaining the strategic choices available to companies. These choices, which take into account all the costs of transacting business activities, should be based on "doing together". For them, "doing together" is most evident in the joint venture, which is a form of strategic alliance that is distinguished by its transnational character. At this level, control and decision-making are shared. The objective here is to develop a commercial and / or industrial implantation using local skills and resources. Still on the use of external expertise, the same authors refer to another strategy, which they call "faire-faire or let go". According to them, this strategy refers to the notion of international outsourcing, whereby the company (the originator) selectively and thoughtfully transfer to another company (the subcontractor), some of those activities in which it has limited competitive advantages, in order to exploit the strength available at the level of the second company, to strengthen its international competitiveness and even to avoid the complete disappearance of some of its industrial sectors. According to the same authors, the use of expertise may not be external. At this level, they evoke two other strategies including the "doing", or the "not doing". In the case of "doing", which also means "doing alone", this means that the company excels in areas where it has distinct assets and where there are strategic challenges for its future. With regard to "not doing" or "no longer doing", the strategy is that the company is capable of carrying out radical changes that are necessary for its growth and the sustainability of its achievements.

Huber (1991) generally classifies knowledge acquisition by a firm into five categories such as experience, mimicry, inheritance, external or research, which we describe in this study as the use of external expertise. Since few studies on the latter are carried out on the African case, and in this case Benin, the use of this variable in the present model makes it possible to assess its influence on the management of the growth of a company.

The chosen indicator is the annual growth rate of the budget invoiced to the company for external expertise over the period 2008-2013. Expenditure for the recruitment of external consultants is used as a proxy for access to outside expertise. The minimum and maximum average values between 2008 and 2013 (Min: -100; Max: 457.83) mentioned in brackets are those of the companies.

## **2.5 Access to Energy**

The problem of access to energy by companies in Africa is a new fact due to the repeated power shortage since about twenty years (Stephen Karekezi, 2002). In fact, this problem is analyzed in many studies in terms of product price volatility (Hadsell et al., 2006), as well as its consumption (Girod 1994, Eboue 1995, Adjamagbo et al., 2011, Dangbedji et al., 2011). These studies, carried out on the same continent, reveal that there is a direct correlation between economic growth and supply or access to electricity. On the other hand, the studies available on the case under study or even on the African case do not indicate whether there is a correlation between this factor and the growth of firms or the State billing system as contained in reports on power shortage in Africa (Goerg, 2002, Magrin, 2007, Sow, 2010). This justifies the study of this factor here. Thus, in the context of this study, we try to analyze the energy billing system of the company so as to determine if the State makes energy over-bills on companies due to load shedding, and also to assess the influence of this factor on the management of the growth of enterprises.

For the purpose of this study, energy billing is a continuous variable. The indicator used is the annual growth rate of the budget allocated to electricity access per unit of sales carried out by

the company for the period 2008 to 2013. The minimum and maximum average values between 2008 and 2013 (Min: -100; Max: 225.72) mentioned in brackets are those of the companies.

## **2.6 Dues and taxes**

Generally, authors' opinions vary collection of dues and taxes in Africa. For some authors (Avom, 2011), fiscal policies do not favor good cash flows into the State coffers. Thus, for this author, tax revenues are among the lowest in Africa south of the Sahara. For others, the State's fiscal policy raises the problem of companies' competitiveness (Ngok, 2015) because the latter are imposed by their State, while some authors opine that tax policies generate tax fraud and social fraud (Lefebvre et al., 2015). All these are situations that do not favor good management of the growth of companies on the continent. This variable is therefore chosen to study the influence of corporate taxation on the management of firm's growth. Here, two indicators are defined, namely:

1. The annual rate of increase in direct dues and taxes incurred by the company for the period 2008-2013 is the indicator used. The amounts of dues and direct taxes are used as proxy here. The minimum and maximum average values between 2009 and 2013 (Min: -58.6; Max: 402.60) mentioned in brackets are those of the companies.

2. The annual rate of increase in indirect dues and taxes incurred by the company for the period 2008-2013. The amounts of indirect dues and taxes are used as proxy here. The minimum and maximum average values between 2009 and 2013 (Min: 0; Max: 0) mentioned in brackets are those of the companies.

The review of literature on the factors studied as well as the conceptualization of the variables shows that there are proven links between the variables selected and the companies' growth. Based on this, we formulate the following hypothesis for our work.

H1: Investments made by companies which are: (a) investment in consumer goods and services, (b) investment in infrastructure, (c) investment in research and development, positively influence business growth in all sectors;

H2: Corporate donations and sponsorships as well as the use of external expertise have positive influence on business growth in all sectors;

H3: Direct taxes, indirect taxes and access to energy have a negative impact on business growth in all sectors.

## **3. METHODOLOGY OF THE RESEARCH**

### **3.1 Methods of data collection and analysis**

This research was based on information gathered from the financial statements of Beninese companies of all sizes and sectors from 2008 to 2013. A total number of 12 variables were initially present in the database. Note that due to non-availability of data on some variables such as other investments (advertising and publication costs as well as cost of receptions and missions), and other sources of energy (solar and biomass), a total of 10 variables were finally selected. They are titled: business growth (BG), use of external expertise by business (UEE), investment in consumer goods and services (ICGS), investment in infrastructure (II), investment in research and development (IRD), corporate donations (CD), corporate sponsorship (CS), direct dues and taxes (DDT), indirect dues and taxes (IDDT) and access to energy (AE).

The base is made up of 1,756 companies of different sizes. It has been audited as a result of some missing data. This audit was carried out using the SPSS software. In this process, the following operations were carried out: 1) the after-tax growth rate per year was first calculated; 2) 731 companies whose growth rate result is not available for at least five years over the period of this study were subsequently eliminated from the base. Actually, these are businesses that have at most two out of six consecutive years of operations; 3) The companies selected are those that have provided results of at least three fiscal years. Among the rest of the firms, (13) have data covering 03 years, (26) have data covering 04 years and (14), have data covering 05 years. The missing data of these enterprises (representing 1.7%) were imputed by the average value of those available. In all, the number of firms selected is 1,025, bringing the total number of observations to 6,150.

From this audited base, the first step was to present the evolution of the average annual growth rates of the internal and external factors used in this analysis. The internal factors include the use of external expertise by the company (UEE), investment in consumer goods and services (ICGS), investment in infrastructure (II), investment in research and development (IRD), corporate donations (CD), and corporate sponsorship (CS). The external factors include direct dues and taxes (DDT), indirect dues and taxes (IDDT) and access to electricity (AE).

For an X factor, the annual growth rate over n period, marked as  $R^{(n)}_x$ , is calculated based on the following formula:

$$R^{(n)}_x = \frac{X_n - X_{n-1}}{X_{n-1}} * 100$$

where  $X_n$  is the value of variable X over n period. The period covered by the study being 2008 to 2013.

As such, the average annual growth rate for factor x, marked as AAR is:

$$AAR_x = \frac{1}{5} * \sum_{k=1}^5 R^{(k)}_x$$

For the second step, we will assess the evolution of growth management variable over time, as well as the internal and external factors through a descriptive analysis of the observed trends. For the external factors, the following should be specified:

As regards the rates of increase in direct dues and taxes, they were calculated for each year, per person engaged by the company. In the present case, depending on the configuration of our base, direct dues and taxes are made up of property taxes and ancillary taxes, patents, licenses and ancillary taxes, taxes on salaries and wages, training taxes, taxes levied on in-service vocational training and other direct dues and taxes. All the above-mentioned factors account for the growth in the size of the company characterized by the number of employees, hence the importance of size effect on the gross value of direct dues and taxes. The formula used in calculating the rate is as follows:

$$R^{(n)}_{DDT} = \frac{X_n - X_{n-1}}{X_{n-1}} * 100$$

where  $X_n = \frac{DDT_n}{R_n}$  with DDT = Direct Dues and Taxes and, BG = Business Growth.



The average annual growth rate for direct taxes, marked as  $AAR_{DDT}$  is:

$$AAR_{DDT} = \frac{1}{5} * \sum_{k=1}^4 R^{(k)}_{DDT}$$

As for the growth rates in terms of access to electricity, these rates were calculated for each year by the sales unit made by the company. Here, the turnover is used because it is usually linked to the value added. The following formula was used to calculate the rate:

$$R^{(n)}_{AE} = \frac{X_n - X_{n-1}}{X_{n-1}} * 100$$

Where  $X_n = \frac{AE_n}{AC_n}$  with AE = Access to electricity and, TO = Turn Over. The average annual growth rate of expenses on electricity, marked as  $AAR_{AE}$  is :

$$AAR_{AE} = \frac{1}{5} * \sum_{k=1}^4 R^{(k)}_{AE}$$

To the extent that our variables are quantitative and continuous, the next step was to establish the correlation matrix between these variables using Pearson and Spearman correlation coefficient. Pearson coefficient presents the standardized covariance between different variables in a linear relationship. The absence of a linear relationship does not mean that there is no relationship between the variables, hence the Spearman calculation that captures the possible nonlinear relations. The coefficients must vary between -1 and 1, and we propose to retain a significance threshold of 5%. It should be noted that Spearman coefficient is preferable to that of Pearson when the relationships are asymmetric.

These correlations coefficients of the different variables of the model were calculated in order to detect the risk of multi co-linearity, in case there were strong correlations between certain explanatory variables of the model (coefficient greater than 0.5). The database for our study has two dimensions: individual (branch of activity) and temporal (2008 to 2013). It reports the values of the variables considered for a set or panel of firms operating in a given industry over the period 2008 to 2013. The study therefore uses a panel data model. Generally, the panel data model takes the following form:

$$y_{i,t} = \alpha + \sum_k \beta_k X_{k,i,t} + \sum_p \gamma_p z_{pi} + \varepsilon_{it} \quad i = 1 \dots N \text{ and } t = 1 \dots T_i$$

Indeed, the panel data model distinguishes between fixed effects and compound-errors models. The fixed effects model assumes that the relationships between the dependent variable and the explanatory variables are the same for all individuals (Greene, 2005). It is as follows:

$$y_{i,t} = \alpha_i + \sum_{k=1}^K \beta_k X_{k,i,t} + \varepsilon_{i,t} \quad i = 1 \dots N \text{ et } t = 1 \dots T_i$$

The compound errors or random effects model assumes that the individual specificity is random. The constant term peculiar to each individual is decomposed in fixed terms and in random terms and allows the control of individual heterogeneity. It is as follows:

$$y_{i,t} = \alpha + \sum_k \beta_k X_{k,i,t} + \sum_p \gamma_p z_{pi} + \varepsilon_{it} \quad i = 1 \dots N \text{ and } t = 1 \dots T_i$$

Unlike the fixed effects model, the compound errors model uses the two dimensions of the panel (individual and time). In other words, it allows the measurement of factors that are constant in time. In reality, the model relies on the differentiation of variables from the

individual average to eliminate fixed effects. Three R-square statistical tests are used, namely the R-square within, the R-square between and the R-square overall (Greene, 2005). The R-square within gives the portion of the intra-individual variability of the dependent variable by those of the independent variables. This is the most important of the three. The R-square between measures the contribution of fixed effects to the model. The overall R-square reflects the overall quality of regression. In addition, two Fisher statistics (F-stat) are being proposed. The first indicates the joint significance of the explanatory variables while the second one indicates the joint significance of the fixed effects. As for the random model, the R-square within gives the contribution of the random effects to the model. The R-square between indicates the part of the inter-individual variability explained by those of the explanatory variables. That is its focus. The R-square overall remains the same.

In order to know what model to be used in this study, we will proceed to Hausman test (1978). This test will be used to determine whether to use a fixed or random effects model. The idea of this test is that, under the null hypothesis of independence between errors and explanatory variables, the two estimators are unbiased, so the estimated coefficients should slightly differ. The Hausman test compares the variance-covariance matrix of the two estimators. If the null hypothesis cannot be rejected, that is, if the p-value is greater than the confidence level, the efficient random effects will be used, if there is no correlation between errors and explanatory variables.

For the correlation, the aspect that we must pay attention to is that of inter-individual errors correlation possibility. We should also check to be sure that the errors are not self-correlated for each individual. Therefore, four tests are required: The heteroskedasticity test, the inter-individual heteroskedasticity test, the inter-individual contemporary correlation and the intra-individual autocorrelation (Greene, 2005). If the model does not contain individual effects or if it contains fixed effects, the analysis moves on to the correlation test. However, although this is theoretically possible, STATA does not allow us to test inter-individual contemporary correlation on random effects models. At this point, we will continue the analysis with the intra-individual autocorrelation test, thus making the use of random effects model for R = 1, 2, 3, 4 and K = 9 possible.

The contextualized model formula then gives the following:

$$MBG_{i,t} = A + \alpha_1 ICGS_{i,t} + \alpha_2 II_{i,t} + \alpha_3 IRD_{i,t} + \alpha_4 UEE_{i,t} + \alpha_5 DONATIONS_{i,t} + \alpha_6 SPONSORSHIP_{i,t} + \alpha_7 IDDT_i + \alpha_8 DDT_{i,t} + \alpha_9 AE_{i,t} + \varepsilon_{i,t}$$

*Table following on the next three (3) pages*

**Table 1. Operationalization of the research’s variables**

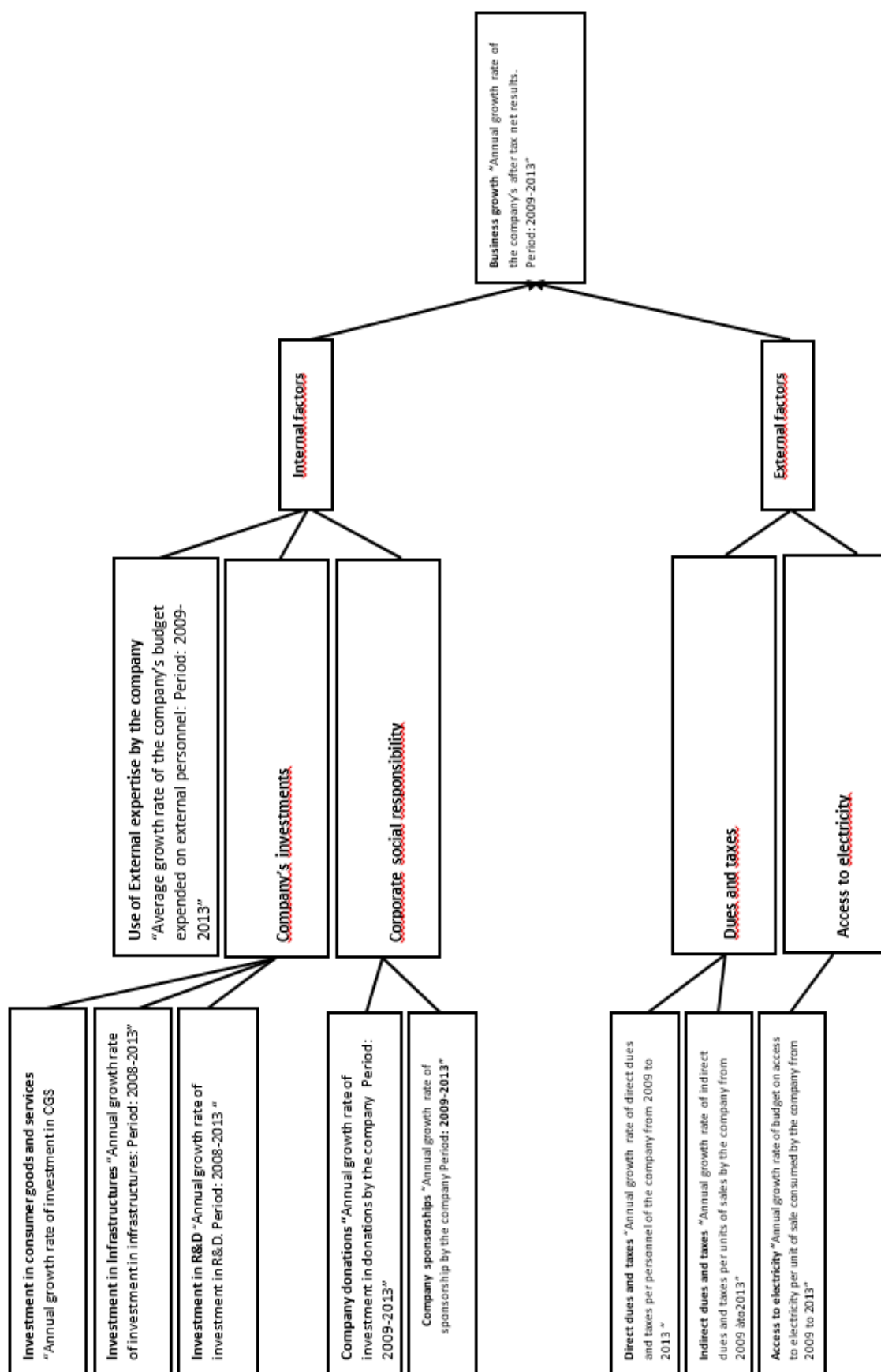
| Variable                                 |                                           | Nature     | Average values 2008-2013     | Justifications                                                                                                                                                                                               | Indicator                                                                                   | Usage                                                                                                   |
|------------------------------------------|-------------------------------------------|------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| RGE-INSAE database – 2008-2013 period    |                                           |            |                              |                                                                                                                                                                                                              |                                                                                             |                                                                                                         |
| Business growth management               |                                           | CONTINUOUS | Min: - 497.50<br>Max: 497.67 | Negative (positive) sign represents decrease (increase) in after tax net result of the company compared to previous situation                                                                                | <b>Annual growth rate of the company’s after tax net result (TCMRN). Period: 2008-2013</b>  | Proxy to measure the business growth                                                                    |
| Company’s investment                     | Investment in consumer goods and services | CONTINUOUS | Min: - 221.14<br>Max: 259.73 | 0 means that the company does not invest in education<br><br>Negative (positive) sign represents decrease (increase) in the company’s investment in education compared to the previous situation.            | <b>Annual growth rate of investment in goods and services. Period: 2008-2013</b>            | Expenses on consumer goods and services are used as proxy for investment in consumer goods and services |
|                                          | Investment in Infrastructures             | CONTINUOUS | Min: - 80.13<br>Max: 181.19  |                                                                                                                                                                                                              | <b>Annual growth rate of investment in infrastructures. Period: 2008-2013</b>               | Expenses on infrastructures are used as proxy here                                                      |
|                                          | Investment in R&D                         | CONTINUOUS | Min: 0<br>Max: 15.50         |                                                                                                                                                                                                              | <b>Annual growth rate of investment in R&amp;D. Period: 2008-2013</b>                       | Costs of staff capacity development are used as proxy for investment in R&D                             |
| Use of external expertise by the company |                                           | CONTINUOUS | Min: - 100<br>Max: 457.83    | 0 means that the company did not use external expertise during the period.<br>Negative (positive) sign indicates decrease (increase) in the cost expended by the company compared to the previous situation. | <b>Annual growth rate of the company’s budget for external expertise. Period: 2008-2013</b> | Expenditure on recruitment of external consultants are used as proxy for access to external expertise   |

| Variable                              | Nature                  | Average values 2008-2013 | Justifications               | Indicator                                                                                                                                                                                       | Usage                                                                                  |                                                                                  |
|---------------------------------------|-------------------------|--------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| RGE-INSAE database – 2008-2013 period |                         |                          |                              |                                                                                                                                                                                                 |                                                                                        |                                                                                  |
| Company’s social responsibility       | Company’s donations     | CONTINUOUS               | Min: - 288.75<br>Max: 401.39 | 0 means that the company did not make any donations for the period. Negative (positive) sign indicates decrease (increase) in donations made by the company compared to the previous situation. | Annual growth rate of the company’s donations. Period: 2008-2013                       | Donations are used to measure the company’s social responsibility                |
|                                       | Company’s sponsorship   | CONTINUOUS               | Min: - 13,39<br>Max: 166.93  | 0 means that the company did no sponsorship during the period. Negative (positive) sign indicates decrease (increase) in the company’s sponsorship compared to the previous situation.          | Annual growth rate of the company’s sponsorship. Period : 2008-2013                    | Sponsorships are used to measure the company’s social responsibility.            |
| Dues and taxes                        | Direct dues and taxes   | CONTINUOUS               | Min: -50<br>Max: 407.31      | 0 means that the company did not pay tax during the period. Negative (positive) sign indicates decrease (increase) in the company’s taxes compared to the previous situation.                   | Annual growth rate of direct taxes paid by the company’s staff from 2008 to 2013       | Direct dues and taxes are used to measure the company’s taxation by the State.   |
|                                       | Indirect dues and taxes | CONTINUOUS               | Min: - 100<br>Max: 225.72    | 0 means that the company did not pay taxes during the period. The negative (positive) sign indicates decrease (increase) in the                                                                 | Annual growth rate of the company’s dues and taxes per unit of sales from 2008 to 2013 | Indirect dues and taxes are used to measure the company’s taxation by the State. |

| Variable                              |                       | Nature     | Average values 2008-2013   | Justifications                                                                                                                                                                                      | Indicator                                                                                           | Usage                                                                                                       |
|---------------------------------------|-----------------------|------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| RGE-INSAE database – 2008-2013 period |                       |            |                            |                                                                                                                                                                                                     |                                                                                                     |                                                                                                             |
|                                       |                       |            |                            | indirect taxes of the company compared to the previous situation.                                                                                                                                   |                                                                                                     |                                                                                                             |
| Access to energy                      | Access to electricity | CONTINUOUS | Min: - 58,6<br>Max: 402.60 | 0 means that the company was not billed during the period. Negative (positive) sign indicates decrease (increase) in the cost of energy consumed by the company compared to the previous situation. | <b>Annual growth rate of the company's budget on electricity by unit of sales from 2008 to 2013</b> | Expenditure on access to electricity is used to proxy to measure the company's energy billing by the State. |

*Figure following on the next page*

Figure 1. Operating framework of the research



#### 4. RESULTS AND DISCUSSIONS

In this part of the research, we shall first examine the necessary estimates guiding the choice of the model used. The commented results of these estimates are joined as annex to this work. Meanwhile, the following table presents the summary of the different econometric tests conducted as part of this research.

*Table 2. Summary of econometric tests<sup>1</sup>*

| Type of Test                                             | Null-Hypothesis                                                 | P-value | Acceptance/Rejection | Consequences                                                                      |
|----------------------------------------------------------|-----------------------------------------------------------------|---------|----------------------|-----------------------------------------------------------------------------------|
| Individual effects existence test (F-statistics)         | No specific effects                                             | 0.0000  | Rejected             | Presence of individual effects                                                    |
| Hausman test (Choice between fixed and random effects)   | Absence of correlation between errors and explanatory variables | 0.0626  | Accepted             | The model is random effects                                                       |
| Breush-Pagan test (heteroskedasticity)                   | Absence of heteroskedasticity                                   | 0.0000  | Rejected             | Presence of heteroskedasticity. Use of Generalised Least Squares (GLS)            |
| Modified Wald Test (inter-individual heteroskedasticity) | Absence of inter-individual heteroskedasticity                  | 0.0000  | Accepted             | Presence of inter-individual heteroskedasticity Use of GLS                        |
| Wooldridge test (Autocorrelation)                        | Absence of auto-correlation of errors                           | 0.0000  | Rejection            | The structure of auto-correlation is an AR1. Use of GLS with correction of errors |

The above econometric tests show that the above model to be estimated is heteroskedastic and auto correlated. For this purpose, the literature recommends applying the Generalized Least Squares (GLS) to correct the presence of heteroskedasticity and autocorrelation. But, in this work, we prefer to use the Prais and Winsten’s transformation instead.

This choice is based on the work of Beck and Katz (1995). These authors showed that on a small sample, GLSs could produce incorrect standard errors. These errors are due to the fact that the GLS method estimates an excessive number of parameters in the variance-covariance matrix (Beck, 2001). However, without questioning the size of our sample, this study applies the transformation proposed by Prais and Winsten in order to eliminate auto-correlation of the disturbances. In addition, the Prais-Winsten’s transformation is more relevant for the estimate of non-cylinder panels.

*Table following on the next page*

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<sup>1</sup> See annex for details

Table 3. Results of empirical estimates (Prais-Winsten's method)

(\*) Significant at statistical threshold of 10%, (\*\*) Significant at statistical threshold of 5%, (\*\*\*) Significant at statistical threshold of 1%. Stata, 2013.

| Variables   | All companies                                       |                                                     |                                                     |                                                     | SMEs                                                |                                                     |                                                        |                                                      |
|-------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|
|             | General                                             | Primary                                             | Secondary                                           | Tertiary                                            | General                                             | Primary                                             | Secondary                                              | Tertiary                                             |
| DDT         | 0.0003<br>(-0.0001)                                 | -0.0051<br>(0.0063)                                 | -0.0016<br>(0.0024)                                 | 0.0007<br>(0.0012)                                  | 0.0021<br>(0.0020)                                  | 0.0066<br>(0.0226)                                  | -0.0035<br>(0.0063)                                    | 0.0024<br>(0.0021)                                   |
| AE          | -0.0019***<br>(-0.0006)                             | -0.0034<br>(0.0027)                                 | 0.0002<br>(0.0013)                                  | -0.0026***<br>(0.0007)                              | 0.0000<br>(0.0014)                                  | -0.0207<br>(0.0156)                                 | -0.0021<br>(0.0026)                                    | -0.0004<br>(0.0016)                                  |
| IRD         | -0.0271<br>(-0.022)                                 | 0.1545**<br>(0.0784)                                | -0.1138*<br>(0.0595)                                | -0.0365<br>(0.0248)                                 | -0.0082<br>(0.0378)                                 | -0.2709<br>(0.2176)                                 | -0.2382***<br>(0.0857)                                 | 0.0156<br>(0.0428)                                   |
| SPONSORSHIP | 0.0028***<br>(-0.0005)                              | 0.0043**<br>(0.0017)                                | 0.0036***<br>(0.0013)                               | 0.0024***<br>(0.0005)                               | 0.0028***<br>(0.0008)                               | 0.0112**<br>(0.0042)                                | 0.0017<br>(0.0021)                                     | 0.0020***<br>(0.0010)                                |
| DONATIONS   | 1.48.10 <sup>-16</sup><br>(1.08.10 <sup>-16</sup> ) | 2.20.10 <sup>-15</sup><br>(1.56.10 <sup>-15</sup> ) | 6.23.10 <sup>-18</sup><br>(2.77.10 <sup>-16</sup> ) | 1.89.10 <sup>-16</sup><br>(1.20.10 <sup>-16</sup> ) | 1.04.10 <sup>-15</sup><br>(1.28.10 <sup>-15</sup> ) | 2.09.10 <sup>-14</sup><br>(1.55.10 <sup>-14</sup> ) | 7.38.10 <sup>-15</sup> **<br>(3.48.10 <sup>-15</sup> ) | -1.34.10 <sup>-15</sup><br>(1.41.10 <sup>-15</sup> ) |
| UEE         | 0.6772***<br>(-0.0282)                              | 0.5844***<br>(0.0990)                               | 0.6598***<br>(0.0779)                               | 0.6861***<br>(0.0319)                               | 0.7647***<br>(0.0516)                               | 1.0895***<br>(0.2703)                               | 0.9392***<br>(0.1425)                                  | 0.7448***<br>(0.0576)                                |
| II          | -0.0040***<br>(-0.0005)                             | -0.0037*<br>(0.0020)                                | -0.0038***<br>(0.0014)                              | -0.0041***<br>(0.0005)                              | -0.0065***<br>(0.0009)                              | -0.0215***<br>(0.0066)                              | -0.0094***<br>(0.0022)                                 | -0.0060***<br>(0.0010)                               |
| ICGS        | -0.0003<br>(-0.0005)                                | 0.0024<br>(0.0021)                                  | 0.0007<br>(0.0012)                                  | -0.0008<br>(0.0006)                                 | -0.0006<br>(0.0010)                                 | -0.0076<br>(0.0094)                                 | -0.0032<br>(0.0026)                                    | -0.0005<br>(0.0012)                                  |
| IDDT        | -0.2013***<br>(-0.0359)                             | -0.3398***<br>(0.1286)                              | -0.2032**<br>(0.0979)                               | -0.1792***<br>(0.0405)                              | -0.1906***<br>(0.0640)                              | -0.3666<br>(0.4717)                                 | 0.1503<br>(0.1627)                                     | -0.1792***<br>(0.0719)                               |
| CONS        | 0.2701***<br>(-0.082)                               | 0.2713<br>(0.2675)                                  | -0.0236<br>(0.2395)                                 | 0.3374***<br>(0.0928)                               | -0.0575***<br>(0.1543)                              | 2.5024<br>(0.7290)                                  | -0.5504<br>(0.4492)                                    | -0.0150<br>(0.1715)                                  |

The model for the estimate is as follows:

$$BG_{i,t} = A + \alpha_1 ICGS_{i,t} + \alpha_2 II_{i,t} + \alpha_3 IRD_{i,t} + \alpha_4 UEE_{i,t} + \alpha_5 DONATIONS_{i,t} + \alpha_6 SPONSORSHIPS_{i,t} + \alpha_7 IDDT_{i,t} + \alpha_8 DDT_{i,t} + \alpha_9 AE_{i,t} + \varepsilon_{i,t}$$



#### **4.1. For companies of all sizes and sectors**

Generally, when we take the case of all firms, we notice that access to energy (AE) is significant at 1% threshold. It is the same with the tertiary sector at the same threshold. Investments in research and development (IRD) are 5% at the primary sector and 10% at the secondary sector. When analyzing corporate social responsibility (CSR), the result is mixed. That is, a part of the CSR, which is sponsorship, is significant at 1% at the general sector, 10% at the primary sector and 1% at the secondary and tertiary sectors. The other part of the CSR, which is donations, is not significant at all, whether it is at the general level or in the sectors. The results for the use of external expertise tests are significant at 1% at all levels (global, primary, secondary, and tertiary). Investments in infrastructure (II) are significant at 1% at the general level, 10% at the primary sector, 1% at the secondary and tertiary sectors. Indirect dues and taxes are significant at 1% at the general, primary and tertiary sectors, and 5% at the secondary sector. Thus, the random model estimate results indicate that the variables called sponsorship, use of external expertise (UEE), investments in infrastructure (II) and indirect dues and taxes (IDDT) are significant at different thresholds irrespective of the sector of activities. In other words, they impact on companies' growth rates regardless of their sector of activities. While sponsorship and the use of external expertise have a positive impact on business management growth rates regardless of sector, investment in infrastructure and indirect dues and taxes influence it negatively. Sponsorship, use of external expertise as well as indirect dues and taxes all have the expected signs. Investments in access to electricity are also statistically significant for both general and tertiary sector businesses in terms of their effect on growth. However, the effects are negative. The effects of investments in research and development on the management of business growth are significant only in the primary and secondary sectors.

#### **4.2. For SMEs in all sectors**

At this level, it should be noted that investments in consumer goods and services (ICGS) as well as in access to energy are not significant whatever the sector is, and even at the general level. On the other hand, investments in research and development (IRD) are significant at 1%, but only at the secondary sector level. This implies their importance for manufacturing. Sponsorships are also significant at 1% generally, 5% at primary and tertiary sectors. But they are not significant in the secondary sector. Investments in the use of external expertise (UEE) as well in infrastructure (II) are significant at 1% generally, as well as in all sectors. Indirect dues and taxes (IDDT) are significant at 1% at the general level and at 5% in the tertiary sector. Overall, the results indicate that the use of external expertise and infrastructure investments have a significant impact on the management of business growth at 1% threshold for all sectors. While the use of external expertise has a positive effect, investments in infrastructure have a negative effect on business growth. Sponsorship is significant across all sectors at different thresholds except for the secondary sector and it positively influences the growth of firms. Indirect dues and taxes are as significant for all companies at the general level as for those in the tertiary sector; and they maintain negative sign as regards their impact on business growth. Even if investment in access to energy influences the growth of firms in the general category, it is of no effect on the growth of SMEs. The same is true of the tertiary sector where investment in access to energy by companies is of no effect. Similarly, in the secondary sector, while the management of the growth of all firms is influenced by sponsorship and indirect taxes, it is not the case for SMEs in this sector. On the other hand, SMEs in the manufacturing sector are the only ones that are positively influenced by investments in donations. Finally, in the primary sector, it is observed that the management of SMEs growth is not influenced by investment in research and development as well as expenditure related to indirect dues and taxes.

## 5. VALIDATION OF THE HYPOTHESIS AND CONCLUSION

The significance of the aspects selected and investigated in this study shows the importance of these aspects for the context under study. This being the case, we will present a table summarising the validation of our hypothesis as follows:

| Hypothesis | Tests' results |               |               |               | Validation                                                                                                                            |
|------------|----------------|---------------|---------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------|
|            | General        | Primary       | Secondary     | Tertiary      |                                                                                                                                       |
| <b>H1</b>  | +ICGS          | +ICGS         | +ICGS         | -ICGS         | Not significant. Hypothesis not validated                                                                                             |
|            | +II            | -II           | -II           | -II           | Significant in all sectors and at the general level. But has negative influence on business growth. Hypothesis validated              |
|            | +IRD           | +IRD          | -IRD          | -IRD          | Not significant at the general and tertiary levels. Significant in the primary and secondary sectors. Hypothesis partially validated. |
| <b>H2</b>  | +DONATIONS     | +DONATIONS    | +DONATIONS    | +DONATIONS    | Not significant across all sectors and generally. But significant at the level of secondary SMEs. Hypothesis partially validated.     |
|            | +SPONSORSHIPS  | +SPONSORSHIPS | +SPONSORSHIPS | +SPONSORSHIPS | Significant at the general level and in all sectors. Hypothesis validated.                                                            |
|            | +UEE           | +UEE          | +UEE          | +UEE          | Significant at the general level and in all sectors. Hypothesis validated.                                                            |
| <b>H3</b>  | -IDDT          | -IDDT         | -IDDT         | -IDDT         | Significant at the general level and in all sectors. Hypothesis validated.                                                            |
|            | -DDT           | -DDT          | -DDT          | +DDT          | Not significant. Hypothesis not validated.                                                                                            |
|            | -AE            | -AE           | +AE           | +AE           | Significant at the general level but not in the sectors. Hypothesis partially validated.                                              |

Table 4. Summarising the validation of the research hypothesis  
Source: Our findings, 2017

Generally, significance is noticeable at all levels of the aspects studied such as the use of external expertise (UEE)<sup>2</sup> and sponsorships (SP)<sup>3</sup> carried out by the companies, as well as indirect dues and taxes (IDDT). However, if one should concentrate on the secondary sector where the manufacturing companies belong to, it is clear that sponsorships give way to donations while indirect dues and taxes, on their own part, give way to investments in infrastructure. It means that those are the aspects or determinants that are given priority by companies in that sector. In conclusion, in this research, we used Random Effects Panel. The reasons for using this model are contained in the methodological part of the study. The study shows that a fairly large percentage (at least strictly greater than 50%) of intra-firm variability in the growth rate of firms' net results are explained by the growth rates of the variables that are big enough. A threshold of 5% is required for the significance of the model and this has been respected. The study also shows quite clearly the importance of a number of specific factors that are often obscure in the scientific literature on the growth of African enterprises. A total number of 10 variables were studied in this model. Thus, the variables that were finally selected and studied are: business growth (BG), use of external expertise by the company (UEE), investment in consumer goods and services (ICGS), Infrastructure Investment (II), investment in research and development (IRD), corporate donations (CD), corporate sponsorship (CS), direct dues and taxes (DDT), indirect dues and taxes (IDDT) and access to energy (AE). The results of the estimates of the random model used indicate that the variables called sponsorship, use of external expertise (UEE), investments in infrastructures (II) and indirect dues and taxes (IDDT), impact on companies' growth rates irrespective of the sector. Use of external expertise (UEE) as well as investment in corporate sponsorship (ICS) are quite significant and positively influence the growth of the companies studied. This is an important factor to be considered as part of the strategies to be deployed by companies regardless of their sector and size. Also, an upward variation in the coefficients of these aspects studied shows their non-negligible impact on the growth of SMEs in the secondary sector. Further analysis of this situation could provide enough strategic information for the growth of businesses on the continent. The effects of investments in research and development on the management of business growth are significant mainly in the primary and secondary sectors. Expenditure on access to electricity is also statistically significant in terms of their effect on growth, for both general and tertiary sector businesses. However, these effects are negative and this is justified by the fact that they constitute burdens and their increase naturally diminishes the revenue of the companies.

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## ANNEX: DETAILED ECONOMETRIC TESTS

- Tests on the effects of the model

First, it is essential to test the existence of individual effects in our model. They can be characterized by an intercept that is peculiar to each individual  $u_i$ . We thus try to test the null hypothesis  $H_0: u_i = 0$  in the regression:

$$BGM_{i,t} = A + \alpha_1 ICGS_{i,t} + \alpha_2 II_{i,t} + \alpha_3 IRD_{i,t} + \alpha_4 CRS_{i,t} + \alpha_5 DONATIONS_{i,t} + \alpha_6 SPONSORSHIP_{i,t} + \alpha_7 IDDT_{i,t} + \alpha_8 DDT_{i,t} + \alpha_9 AE_{i,t} + \varepsilon_{i,t}.$$

The Fisher test is used for this and the result obtained is as follows:

| . xtreg GCE IBSC II IRD RCE DONS MECENAT ITID ITD AE, fe |           |                                   |                      |       |                      |                   |
|----------------------------------------------------------|-----------|-----------------------------------|----------------------|-------|----------------------|-------------------|
| Fixed-effects (within) regression                        |           |                                   | Number of obs        |       | =                    | 4402              |
| Group variable: id                                       |           |                                   | Number of groups     |       | =                    | 1025              |
| R-sq: within = 0.2618                                    |           |                                   | Obs per group: min = |       |                      | 1                 |
| between = 0.2994                                         |           |                                   | avg =                |       |                      | 4.3               |
| overall = 0.2648                                         |           |                                   | max =                |       |                      | 6                 |
|                                                          |           |                                   | F(9,3368)            |       | =                    | 132.72            |
| corr(u_i, Xb) = -0.0128                                  |           |                                   | Prob > F             |       | =                    | 0.0000            |
| GCE                                                      | Coef.     | Std. Err.                         | t                    | P> t  | [95% Conf. Interval] |                   |
| IBSC                                                     | -.0006106 | .0006333                          | -0.96                | 0.335 | -.0018524            | .0006311          |
| II                                                       | -.0030748 | .0005843                          | -5.26                | 0.000 | -.0042205            | -.0019292         |
| IRD                                                      | -.0194807 | .025963                           | -0.75                | 0.453 | -.0703856            | .0314242          |
| RCE                                                      | .6371175  | .0327934                          | 19.43                | 0.000 | .5728205             | .7014144          |
| DONS                                                     | 2.47e-16  | 1.20e-16                          | 2.06                 | 0.040 | 1.15e-17             | 4.82e-16          |
| MECENAT                                                  | .0031987  | .0005492                          | 5.82                 | 0.000 | .002122              | .0042754          |
| ITID                                                     | -.2328119 | .0414817                          | -5.61                | 0.000 | -.3141436            | -.1514801         |
| ITD                                                      | -.0000908 | .0011662                          | -0.08                | 0.938 | -.0023774            | .0021958          |
| AE                                                       | -.0023539 | .0006564                          | -3.59                | 0.000 | -.0036409            | -.0010669         |
| _cons                                                    | .2877389  | .0607065                          | 4.74                 | 0.000 | .1687136             | .4067641          |
| sigma_u                                                  | 2.7585472 |                                   |                      |       |                      |                   |
| sigma_e                                                  | 3.4763916 |                                   |                      |       |                      |                   |
| rho                                                      | .38637363 | (fraction of variance due to u_i) |                      |       |                      |                   |
| F test that all u_i=0:                                   |           |                                   | F(1024, 3368) =      |       | 2.37                 | Prob > F = 0.0000 |

Therefore, the p-value is 0 which means that we reject the null hypothesis and that our model must include individual effects. Fixed or random effects models take into account the heterogeneity of the data, but the nature of the effects differs from one model to another. In the first case, it is assumed that the specific effects can be correlated with the explanatory variables of the model, and in the second case it is assumed that the specific effects are orthogonal to the explanatory variables of the model. The Hausman test makes it possible to discriminate between the two specifications:

| . xtreg GCE IBSC II IRD RCE DONS MECENAT ITID ITD AE, re |           |                                   |                      |       |                      |           |
|----------------------------------------------------------|-----------|-----------------------------------|----------------------|-------|----------------------|-----------|
| Random-effects GLS regression                            |           |                                   | Number of obs        |       | =                    | 4402      |
| Group variable: id                                       |           |                                   | Number of groups     |       | =                    | 1025      |
| R-sq: within = 0.2610                                    |           |                                   | Obs per group: min = |       |                      | 1         |
| between = 0.3056                                         |           |                                   | avg =                |       |                      | 4.3       |
| overall = 0.2669                                         |           |                                   | max =                |       |                      | 6         |
|                                                          |           |                                   | Wald chi2(8)         |       | =                    | .         |
| corr(u_i, X) = 0 (assumed)                               |           |                                   | Prob > chi2          |       | =                    | .         |
| GCE                                                      | Coef.     | Std. Err.                         | z                    | P> z  | [95% Conf. Interval] |           |
| IBSC                                                     | -.0004527 | .0005284                          | -0.86                | 0.392 | -.0014884            | .000583   |
| II                                                       | -.0038117 | .0004931                          | -7.73                | 0.000 | -.0047781            | -.0028453 |
| IRD                                                      | -.0207977 | .0222024                          | -0.94                | 0.349 | -.0643136            | .0227181  |
| RCE                                                      | .6756697  | .0282219                          | 23.94                | 0.000 | .6203557             | .7309836  |
| DONS                                                     | 2.16e-16  | 1.07e-16                          | 2.01                 | 0.044 | 5.70e-18             | 4.27e-16  |
| MECENAT                                                  | .0025902  | .0004808                          | 5.39                 | 0.000 | .0016478             | .0035327  |
| ITID                                                     | -.1960473 | .0362668                          | -5.41                | 0.000 | -.2671289            | -.1249657 |
| ITD                                                      | .0007483  | .0010548                          | 0.71                 | 0.478 | -.0013191            | .0028156  |
| AE                                                       | -.0022766 | .000577                           | -3.95                | 0.000 | -.0034075            | -.0011457 |
| _cons                                                    | .2768693  | .0854555                          | 3.24                 | 0.001 | .1093796             | .444359   |
| sigma_u                                                  | 1.8858125 |                                   |                      |       |                      |           |
| sigma_e                                                  | 3.4763916 |                                   |                      |       |                      |           |
| rho                                                      | .22736112 | (fraction of variance due to u_i) |                      |       |                      |           |

|         | Coefficients |           | (b-B)<br>Difference | sqrt(diag(V_b-V_B))<br>S.E. |
|---------|--------------|-----------|---------------------|-----------------------------|
|         | (b)<br>fixe  | (B)<br>.  |                     |                             |
| IBSC    | -.0006106    | -.0004527 | -.0001579           | .0003491                    |
| II      | -.0030748    | -.0038117 | .0007369            | .0003136                    |
| IRD     | -.0194807    | -.0207977 | .001317             | .0134586                    |
| RCE     | .6371175     | .6756697  | -.0385522           | .0167012                    |
| DONS    | 2.47e-16     | 2.16e-16  | 3.05e-17            | 5.34e-17                    |
| MECENAT | .0031987     | .0025902  | .0006084            | .0002653                    |
| ITID    | -.2328119    | -.1960473 | -.0367646           | .0201357                    |
| ITD     | -.0000908    | .0007483  | -.0008391           | .0004975                    |
| AE      | -.0023539    | -.0022766 | -.0000772           | .000313                     |

b = consistent under Ho and Ha; obtained from xtreg  
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
= 14.82  
Prob>chi2 = 0.0626

Test:  $H_0$ : difference in coefficients not systematic  
 $\chi^2(8) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 14.82$   
 $Prob>\chi^2 = 0.0626$   
 $(V_b-V_B \text{ is not positive definite})$

The p-value is greater than the confidence index (5%), the null hypothesis is accepted, and so it is preferable to use the random effects for our estimate. Hausman test therefore allowed us to draw a conclusion about the specific effects of our model. Now, it is necessary to perform heteroskedasticity tests so as to determine which method is to be used for the estimate.

#### - Heteroskedasticity tests

Homoskedasticity hypothesis assumes homogeneity of the behaviors between the different observations in the sample. On the contrary, the variances of random deviations are no longer identical for each point of observation. We must therefore check whether the variance of errors of each individual is constant: for every individual  $i$ , we must therefore have  $\sigma^2 = \sigma^2$  for all  $t$ . The new aspect of panels' data is to ensure that the variance is the same for all the individuals:  $\sigma^2 = \sigma^2$  for all  $i$ . To detect heteroskedasticity, we will use Breush-Pagan test which tests the null hypothesis of homoskedasticity.

The result obtained is as follows:



| . reg résidus2 ITD AE IRD MECENAT DONS RCE II IBSC ITID |            |           |            |                        |                      |           |
|---------------------------------------------------------|------------|-----------|------------|------------------------|----------------------|-----------|
| Source                                                  | SS         | df        | MS         | Number of obs = 4402   |                      |           |
| Model                                                   | 3427.7177  | 9         | 380.857522 | F( 9, 4392) = 14.17    |                      |           |
| Residual                                                | 118072.805 | 4392      | 26.8836076 | Prob > F = 0.0000      |                      |           |
|                                                         |            |           |            | R-squared = 0.0282     |                      |           |
|                                                         |            |           |            | Adj R-squared = 0.0262 |                      |           |
| Total                                                   | 121500.522 | 4401      | 27.6074806 | Root MSE = 5.1849      |                      |           |
| résidus2                                                | Coef.      | Std. Err. | t          | P> t                   | [95% Conf. Interval] |           |
| ITD                                                     | -.0009649  | .0014008  | -0.69      | 0.491                  | -.0037111            | .0017813  |
| AE                                                      | .0023047   | .000741   | 3.11       | 0.002                  | .0008519             | .0037575  |
| IRD                                                     | .0146397   | .028364   | 0.52       | 0.606                  | -.0409681            | .0702476  |
| MECENAT                                                 | .0029686   | .0006228  | 4.77       | 0.000                  | .0017476             | .0041896  |
| DONS                                                    | -3.62e-16  | 1.40e-16  | -2.58      | 0.010                  | -6.37e-16            | -8.71e-17 |
| RCE                                                     | .0619013   | .036235   | 1.71       | 0.088                  | -.0091376            | .1329403  |
| II                                                      | .0009017   | .0006241  | 1.44       | 0.149                  | -.0003219            | .0021252  |
| IBSC                                                    | .0007821   | .000672   | 1.16       | 0.245                  | -.0005352            | .0020995  |
| ITID                                                    | -.2645079  | .047067   | -5.62      | 0.000                  | -.3567829            | -.1722329 |
| _cons                                                   | 5.913101   | .0848045  | 69.73      | 0.000                  | 5.746842             | 6.079361  |

The p-value is greater than the confidence index (5%), so the null hypothesis is rejected. Our model is therefore heteroskedastic. Before solving this problem, it is important to get more information about the form of heteroskedasticity. To do this, we use the generalized least squares (GLS) and a Wald test.

A modified Wald test is used to test the null hypothesis of inter-individual homoskedasticity. Under the latter, the test assumes that errors variance is the same for all individuals.

| . xtglsl GCE ITD AE IRD MECENAT DONS RCE II IBSC ITID |           |           |       |                    |                      |           |
|-------------------------------------------------------|-----------|-----------|-------|--------------------|----------------------|-----------|
| Cross-sectional time-series FGLS regression           |           |           |       |                    |                      |           |
| Coefficients: generalized least squares               |           |           |       |                    |                      |           |
| Panels: homoskedastic                                 |           |           |       |                    |                      |           |
| Correlation: no autocorrelation                       |           |           |       |                    |                      |           |
| Estimated covariances                                 | =         | 1         |       | Number of obs      | =                    | 4402      |
| Estimated autocorrelations                            | =         | 0         |       | Number of groups   | =                    | 1025      |
| Estimated coefficients                                | =         | 9         |       | Obs per group: min | =                    | 1         |
|                                                       |           |           |       | avg                | =                    | 4.294634  |
|                                                       |           |           |       | max                | =                    | 6         |
|                                                       |           |           |       | Wald chi2(8)       | =                    | 1605.08   |
| Log likelihood                                        | =         | -12336.87 |       | Prob > chi2        | =                    | 0.0000    |
| GCE                                                   | Coef.     | Std. Err. | z     | P> z               | [95% Conf. Interval] |           |
| ITD                                                   | .0016011  | .0010777  | 1.49  | 0.137              | -.0005112            | .0037134  |
| AE                                                    | -.0020794 | .0005701  | -3.65 | 0.000              | -.0031969            | -.0009619 |
| IRD                                                   | -.0276289 | .0218235  | -1.27 | 0.206              | -.0704021            | .0151443  |
| MECENAT                                               | .0020181  | .0004792  | 4.21  | 0.000              | .0010789             | .0029572  |
| DONS                                                  | 1.57e-16  | 1.08e-16  | 1.45  | 0.146              | -5.47e-17            | 3.69e-16  |
| RCE                                                   | .6986338  | .0278795  | 25.06 | 0.000              | .6439911             | .7532765  |
| II                                                    | -.0042747 | .0004802  | -8.90 | 0.000              | -.0052158            | -.0033336 |
| IBSC                                                  | -.000438  | .000517   | -0.85 | 0.397              | -.0014514            | .0005753  |
| ITID                                                  | -.1579872 | .0362136  | -4.36 | 0.000              | -.2289646            | -.0870099 |
| _cons                                                 | .2296428  | .0652491  | 3.52  | 0.000              | .101757              | .3575286  |

*Modified Wald test for group wise heteroskedasticity  
in cross-sectional time-series FGLS regression model*

$H0: \sigma(i)^2 = \sigma^2 \text{ for all } i$   
 $\chi^2(1025) = 8.5e+38$   
 $Prob > \chi^2 = 0.0000$

Thus, the p-value is lower than the confidence threshold (5%), the null hypothesis is rejected. The structure of heteroskedasticity cannot be further specified. To solve this problem of heteroskedasticity, we will use the corrected generalized least squares method. Before making this estimate, we must also test the presence of a possible auto-correlation in our model.

- Intra-individual self-correlation test

The aim here is to check whether the errors are self-correlated and autoregressive (AR1). The Wooldridge test is thus carried out with the null hypothesis that there is no autocorrelation of errors.

*Wooldridge test for autocorrelation in panel data*  
 $H0: \text{no first order autocorrelation}$

$F(1, 664) = 21.212$   
 $Prob > F = 0.0000$

The p-value is below the confidence threshold of 5%, so the null hypothesis is rejected. The errors of our model are therefore self-correlated. We must therefore take cognizance of this autocorrelation in our estimate.

The results of our econometric tests offer us two possibilities: the use of Generalized Least Squares (GLS) or Prais and Winsten's regression by transformation. Beck and Katz (1995) showed that GLS could produce incorrect standard errors on a small sample. This bias stems from the fact that GLS method considers an excessive number of parameters in variance-covariance matrix (Beck, 2001). In this study, we prefer to apply the transformation proposed by Prais and Winsten in order to eliminate auto-correlation of the disturbances. Moreover, the presence of null values for some sample observations shows that this panel could have been non-cylindrical. Finally, we will use the Prais and Winsten transformation to estimate the model with arl structure for autocorrelation of the errors. Arl assumes a common auto-regression coefficient for all the individuals. However, psarl, which allows individuals to have different coefficients, is an alternative to arl, since the estimate of the coefficients by psarl is better than that of arl.

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```
. prais GCE ITD AE IRD MECENAT DONS RCE II IBSC ITID, rhotype(tscorr)
```

Number of gaps in sample: 1311 (gap count includes panel changes)  
(note: computations for rho restarted at each gap)

Iteration 0: rho = 0.0000  
Iteration 1: rho = 0.2788  
Iteration 2: rho = 0.2806  
Iteration 3: rho = 0.2806  
Iteration 4: rho = 0.2806

Prais-Winsten AR(1) regression -- iterated estimates

| Source   | SS         | df   | MS         |  |
|----------|------------|------|------------|--|
| Model    | 21859.9256 | 9    | 2428.88062 |  |
| Residual | 61059.1249 | 4392 | 13.9023508 |  |
| Total    | 82919.0505 | 4401 | 18.8409567 |  |

Number of obs = 4402  
F( 9, 4392) = 174.71  
Prob > F = 0.0000  
R-squared = 0.2636  
Adj R-squared = 0.2621  
Root MSE = 3.7286

| GCE     | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |
|---------|-----------|-----------|-------|-------|----------------------|
| ITD     | .0006846  | .0010516  | 0.65  | 0.515 | -.001377 .0027462    |
| AE      | -.0019791 | .0005711  | -3.47 | 0.001 | -.0030987 -.0008595  |
| IRD     | -.0266425 | .0219748  | -1.21 | 0.225 | -.0697242 .0164392   |
| MECENAT | .0025818  | .0004791  | 5.39  | 0.000 | .0016426 .003521     |
| DONS    | 1.54e-16  | 1.08e-16  | 1.43  | 0.154 | -5.80e-17 3.67e-16   |
| RCE     | .6843462  | .0281531  | 24.31 | 0.000 | .629152 .7395404     |
| II      | -.0041053 | .0004891  | -8.39 | 0.000 | -.0050642 -.0031463  |
| IBSC    | -.000351  | .0005201  | -0.67 | 0.500 | -.0013706 .0006687   |
| ITID    | -.1881525 | .0360998  | -5.21 | 0.000 | -.2589264 -.1173786  |
| _cons   | .2567607  | .075009   | 3.42  | 0.001 | .1097052 .4038161    |

|     |          |
|-----|----------|
| rho | .2805673 |
|-----|----------|

Durbin-Watson statistic (original) 0.804540  
Durbin-Watson statistic (transformed) 1.208024

*End of the paper*

## AN EVALUATION OF SMALL BUSINESS POLICY INITIATIVES INTENDED TO STIMULATE REGIONAL DEVELOPMENT

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### **ABSTRACT**

*Throughout the world, regional development is seen as a response to the growth of unemployment, outdated skills, dying country towns and the flows of people to ever expanding cities. In response, Governments are turning to small business to boost the economic sustainability of regional areas and economies as a whole. The purpose of this paper is to investigate the changing environment in which small business operates, the changes to the small business sector in the past ten years, and the initiatives taken by Governments in Australia to stimulate small business. The paper concludes with some recommendations for further research.*

**Keywords:** *small business, small business policy, business support, regional development*

### **1. INTRODUCTION**

Throughout the world, small business development is seen as a solution to the growth of unemployment, outdated skills, dying country towns and the flows of people to ever expanding cities. In response, Governments are introducing a number of initiatives to boost small business with the hope that it will drive the economic sustainability of regional areas and economies as a whole. This paper describes the role of small business in the economy of Australia, defines what is meant by 'small business', the difficulties faced, and the initiatives taken by Governments in Australia to stimulate small business. The paper concludes with some recommendations for further research.

### **2. THE IMPORTANCE OF SMALL BUSINESS IN AUSTRALIA**

Small businesses make a significant contribution to the Australian economy. They collectively employ approximately half (47%) the Australian workforce and account for one fifth of Australia's gross domestic product in the economy. According to ABS figures there are more than 1, 122,000 small non-agricultural businesses operating in Australia. This is comprised of 540,000 non-employing small business and 582,100 employing small business. Eighty percent of them are family owned. They employ more than 5 million people, Small business numbers grow by approximately 3% a year. The industries which are experiencing the largest annual average increase are finance and insurance, construction, and education. The ABS reports that the most active trading business had annual turnovers under \$200, 000. Entry rates were highest for businesses with annual turnover between \$50,000 and \$199,000. Businesses that achieved a turnover rate of over \$2m were most likely to survive. Exit rates were highest for businesses with annual turnover under \$50,000 and for those which had no employees. The more employees a business had after three years, the more likely it was that it would survive.

### 3. WHAT IS A SMALL BUSINESS?

Different definitions of “small” are used in different countries and in Australia by different government departments, the Australian Securities and Regulation Authority (ASIC) which is the regulator of the Corporations Law, the Australian Tax Department and the Australian Bureau of Statistics (ABS) (Table 1). This diversity in the collection of information adds to the difficulty of doing research in the area and compiling the evidence about the factors that will assist in driving the growth and expansion of the sector.

**Table 1. Definitions of small business**

| Authority                       | Conditions                                                                                                                                                                                                                                                                             |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Corporations Law Definition     | A small proprietary company that satisfies at least <b>two</b> of the following <ul style="list-style-type: none"> <li>• consolidated gross revenue of less than \$25million</li> <li>• value of gross assets less than \$12.5</li> <li>• fewer than 50 full-time employees</li> </ul> |
| Australian Tax Office           | Small: annual turnover less than \$2 million                                                                                                                                                                                                                                           |
| Australian Bureau of Statistics | Micro: Employs less than 5 people<br>Small: Employs less than 20 people<br>Medium: Employs between 20 and 200 people                                                                                                                                                                   |

‘Business’ is defined differently by regulators in Australia depending on the laws they administer (Table 1). For example, ASIC regulates ‘small proprietary companies’, which means a company with two out of these three characteristics:

- an annual revenue of less than \$25 million
- fewer than 50 employees at the end of the financial year, and
- consolidated gross assets of less than \$12.5 million at the end of the financial year.

The Australian Taxation Office defines a small business as one that has annual revenue turnover (excluding GST) of less than \$2 million. Fair Work Australia defines a small business as one that has less than 15 employees.

Despite these differences, many regulators have informally adopted the definition of ‘small business’ used by the Australian Bureau of Statistics (ABS), because the ABS is the source of reliable data. This definition is used in this study: ‘micro’ businesses employ less than 5 people, small, and medium is a business that employs fewer than 20 people. The term SME covers the two small and medium businesses.

#### 3.1 Governance of small business

Generally the most suitable structure for a small business is a small proprietary company (Armstrong and Francis 2006). These must have at least one but no more than 50 shareholders. The Act that regulates business is the Australian Corporations and Securities Legislation. The Act contains a basic set of rules for the internal governance and management of a company. Our research (Armstrong et al 2011) found that few small businesses established a board of directors. To assist small business, those having a single director are exempt from several of the Corporate Law requirements and included in the legislation is a specific section (Small Businesses Guide).

### 3.2. The characteristics of small corporations

The characteristics that are identified with small business are:

- They have a relatively small share of their marketplace. They often operate in only one location servicing local customers but may operate in a niche market or be part of a franchise.
- They are usually owned by one person, or a small number of individuals, often linked by family ties. Because of this, although many are registered as companies, ownership is often restricted and takes the corporate form of sole proprietorships or partnerships. These latter forms leave the small corporate without the protection of limited liability.
- They are privately, often family owned. (80% in Australia).
- They are managed by owners, often owner/managers who make all the critical management decisions and undertake many of the management functions such as financial management, personnel, marketing and production that might be distributed in a larger corporation.
- Succession in ownership and management is often a problem
- They may have resources constraints. Access to financial and other resources is often a major constraint.
- Because an owner/manager undertakes most management roles without the support of internal specialists, the small business is often dependent on other professionals such as their accountant or lawyer for advice (Heenetigala and Armstrong, 2010)
- Small business is closely associated with entrepreneurship and innovation (Muenjohn et al 2010).
- They are independent, in the sense that they are not part of a larger enterprise. In fact, some are deliberately kept small because their owners value the life style associated with less hassles, less politics, more flexibility and better work-life balance.

### 4. DIFFICULTIES FACED BY SMALL BUSINESS

Small business is very susceptible to major economic fluctuations. In difficult times, they are the suppliers, the creditors and the customers at the end of the corporate value chain. As a consequence they suffer the most from credit crunches, the loss of revenue, the loss of skilled staff and uncertainty in customer production and service demands. It was concern for the small business suppliers and other businesses in Portland should the Alcoa aluminium smelter close that drew a \$250 M assistance package from Government to extend the electricity contract which subsidises the plant (Millar 2017). The fear was that not only the 600 jobs at the smelter would go but also the 2000 from the small business in the region.

Some of the conclusions from our previous research were that small businesses are drivers of innovation, that practical implementation of ideas often requires a different set of skills from those of the innovators of ideas; that a number of businesses world-wide are family businesses; that small business manager/owners lack start-up skills, management and marketing skills, and access to resources.

Small businesses are frequently described as the "engine room of growth in the economy". The Australian Treasury and COSBOA recognised this by supporting a major ARC study by a consortium of researchers from five universities (Armstrong et al 2011), into the future direction of regulation of the sector. The purpose of this research was to develop a responsive regulatory model for small corporations. The study drew together data from a literature review, interviews with CEOs of small business industry associations, regulators, the Federal Treasury, industry

leaders and academic experts, and a survey of 391 small business owner/managers. Our study found that among the major difficulties faced by small businesses in Australia were access to finance, lack of skills, tax administration, interest rates, anticompetitive practices, labour relations, crime and the burden of compliance.

Li (2012) reported on the results of a Trade mission to China found that China offered major opportunities for small business, particularly for the services sector, because of:

- Diversified market and huge customer base.
- Official engagement by governments to promote trade.
- Favorable tax and financial support programs toward small firms in China.
- China's increasing and changing demand for high-end goods and services
- Growth in urbanization
- Need for skilled human capital

However, the barriers perceived by Australian small business owners who were among the delegates on the Trade Mission were:

- i. *Information barriers*
  - Limited information to locate/analyse markets
- ii. Human resource barriers
  - Difficulty in managing foreign employees
- iii. *Product and price barriers to marketing*
  - Difficulty in adapting product/design/style for foreign markets
  - Difficulty in matching competitors' prices
  - Difficulty in granting credit facilities to Chinese customers
- IV. *Distribution, logistics and promotion barriers to marketing*
  - Difficulty in obtaining reliable foreign representation
  - Difficulty in adjusting promotional activities in China

These issues must be addressed if Australian small businesses are to be assisted to take advantage of the opportunities offered by overseas markets.

## **5. GOVERNMENT INITIATIVES TO DEVELOP AUSTRALIAN SMALL BUSINESS**

The importance of small business to the economy was recognized by the Australian Government when they appointed a Minister for Small Business (Hon. Bruce Bilson) in 2013. This Minister introduced new initiatives for small business that included a small business and jobs package, and sponsored several large Trade Delegations to China and other countries at which SMEs were well represented. Since then small business appears has continued to be important to Government as the present Federal Small Business Minister, The Hon Michael McCormack MP, is one of the Treasury Portfolio Ministers. Measures to assist small business include extending the Australian Government's \$20,000 instant asset write-off for Australian Small Businesses and supporting a reduction in the tax rate for small businesses by 15%. Both measures are intended to assist small business start-ups to grow. All Australian State and Local Governments are turning their attention to small business.

At the Commonwealth level COAG, supported by the Productivity Commission's Reports, has led the push to 'harmonise' regulations throughout the country. Two examples of the initiatives especially relevant to small business are the harmonisation of payroll and OHS laws, and registration of health professionals. A national occupational licensing system delivers benefits to business, consumers and the wider community through enhanced mobility of licensed trades between jurisdictions. The Australian Consumer Law (ACL) commenced on 1 January 2011.

The ACL provides for a national consumer protection framework, replacing provisions in at least 20 different and overlapping Commonwealth, State and Territory laws. The Productivity Commission’s Research Report on the *Impacts of COAG Reforms: Business Regulation and VET*, released in May 2012, estimates that the realised and prospective benefits of this reform are \$880 million per year. The Taxation Department has made efforts to write the legislation in simple language and providing the means of making submissions via the internet. The Standard Business Reporting (SBR) has been operational since 1 July 2010, offering Australian businesses, accountants, bookkeepers, tax agents and payroll professionals a quicker and simpler way to complete and lodge reports for government. Productivity Commission’s Research Report on the *Impacts of COAG Reforms: Business Regulation and VET*, released in May 2012, estimates that the realised and prospective benefits of this reform are \$60 million per year. National Codes have been introduced. The National Construction Code (NCC) is an Intergovernmental Agreement containing the governance and financial arrangements for the Australian Building Codes Board as the governing body. The NCC has been fully adopted in five jurisdictions (Australian Capital Territory, South Australia, Tasmania, Victoria and Queensland). The remaining three jurisdictions (New South Wales, Northern Territory and Western Australia) have adopted the building and plumbing aspects of the NCC. The Productivity Commission’s Research Report on the *Impacts of COAG Reforms: Business Regulation and VET*, released May 2012, estimates that the prospective benefits of this reform are \$1.05 billion per year. The measures taken by the Victorian Government to assist small business are indicative of the initiatives taken at State Government level. Among the Victorian initiatives is Launch/Vic, the state’s \$60m start-up initiative. When Ford withdrew its manufacturing from Geelong, the largest of the State’s regional cities, the start-up incubator Runway Geelong received \$1.25m from Launch/Vic to help secure a \$25m development program to build a new cloud-hosted IT platform. This initiative is intended to assist the city in moving away from its past dependence on manufacturing towards a future aligned with a start-up culture and the new economy (Kitney, 2016). Within the Government of Victoria, the Hon Phillip Dalidakis MLC is the Minister for Small Business, Innovation and Trade. Mr. Dalidakis is one of nine Ministers serviced by the Department of Economic Development, Jobs, Transport and Resources. He is assisted by a Small Business Ministerial Council which supports and advises the Minister on critical issues concerning small business. A Small Business Commissioner appointed under the Small Business Commissioner Act 2003 is responsible for assisting small businesses by mentoring and mediating conflicts. Within this Department Small Business Victoria is responsible for direct assistance to small business. A \$6m web site provided by Small Business Victoria for small business provides access to information, training (Table 2) and mentoring. Grants up to \$11,500 are available to get strategic planning assistance, business mentoring and networking help. Through collaboration with the Israel Chamber of Commerce, grants up to \$50,000 are also available for science innovation and technology initiatives.

*Table 2. Selection of skills training offered by Small Business Victoria*

|                              |                           |
|------------------------------|---------------------------|
| Strategy of your business    | Build Your Digital Skills |
| Business Planning Essentials | Commencing Your New ideas |
| Investing in a Franchise     | Save Money and Get Green  |
| Effective Business network   | Grow Your Business        |
| Improve your Time Management | Marketing for Growth      |
| Successfully Exiting         | Successfully Exiting      |

A Small Business Victoria bus travels throughout Regional Victoria offering advice and mentoring. Ten million dollars has been allocated for a Small Business Commissioner. A major



initiative has been trade missions to India, Korea and more recently China aimed at opening up new markets for small business

## **6. CONCLUSION: WHAT DOES THE FUTURE HOLD FOR SMALL BUSINESS**

Several factors influence the future of small business. Among the most significant are the uncertainty of the political environment, changing cultural values and expectations, rise of disruption due to IT, removal of restrictive trade practices and reduction of trade barriers, greater competition, terrorism, and tax rates. The rise of citizens who are disaffected with the political systems are evident in the issues associated with Brexit and the election of Donald Trump as President of the US. Small business owner/managers are a target for President Trump's campaigns because they are feeling disenfranchised and resentful of their lack of influence within a traditional and highly centralised political system. The 2017 Trust Barometer (Kozio, 2017) reported an "implosion of trust" in Australia where people believe the system is failing and harbour deep fears of immigration, globalisation and erosion of social values. A multitude of scandals including politician's travel rorts, sexual abuse in the churches, trade union corruption and loss of trust in traditional media while trust in the internet continues to rise. Changing cultural values and expectations are being driven by the flows of migrants across the world not seen since the Second World War. Apart from the spread of Islamic religions, the diversity of the population is evident in new industries and new products being developed to service the different groups and lack of knowledge of English language and Australian work practices. The very spread of different customs and habits is bringing demand for new products to local shops. For small business this has meant the rise of new boutique markets which are sufficiently large to become targets for small operators and small enough to be manageable. A fusion of technologies including cloud computing, big data (databases, networks and analytical software) and social media are transforming production, management and marketing. Cloud computing has supported the rise of disruptive start-ups by putting expensive resources within small business owners' reach. Social media has made contact with markets accessible and cheap. Resources too are more readily available. Cloud financing of start-ups is growing and what cannot be bought cheaply, can be rented. Other emerging technologies unlocking the potential offered by access to the internet include artificial intelligence, autonomous driving, improved battery storage capacity, robotic surgery, biotechnology, comprehensive IT security, the speed promise of 5G, and transported virtual reality. While small business may not drive these innovations, their services can fill a space offered their larger neighbours. This idea is not new but small businesses, because they are small, can offer specialist services. A group of small businesses sharing overheads and customers may be the basis for a financially viable specialist hub. While the disruptive technology and reduction in trade barriers provide enormous opportunities for small businesses, the reality is that the changes taking place are increasing competition. A particular example is the small local retailer who is now facing a storm of products offered on the internet by providers who do not have the overheads of the traditional small businesses. This may push small operators out of retail businesses. While opportunities for growth are expanding in industries such as personal services, many of the available positions will require professional training and up-skilling. Research into Small Business has been hampered by a lack of data. The ABS conducted small business surveys until 2006 and the latest data available from its websites are from 2015. Yet, because of their importance, as shown above, not only to the wider economy but to the families whose futures are tied to family business, small business demands attention. In the current turbulent business environment, new questions are raised: Are the initiatives to assist small business effective? Are they the right ones? Are they enough? What kinds of help are really needed to promote small business? Evaluation to address these issues is desperately needed if small business is to survive and flourish in the future.

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## INTERNET TOOLS IN COMMUNICATION DEVELOPMENT ROLE OF SMALL AND MEDIUM ENTERPRISES IN CROATIA

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### **ABSTRACT**

*The paper emphasizes the importance of using online tools in communication development role of small and medium sized Croatian enterprises. Technology currently moves at a rapid pace that can be difficult to follow, but it is important, and even essential, that the enterprises implement and keep track with the new technological possibilities and strategic approaches to be competitive in a global economy. In modern economy, it is crucial for enterprises to change business models and adopt new techniques because of new consumer behavior in a digital age. To stay relevant enterprises, need to adapt their marketing approaches, where understanding and application of information and knowledge become a key to success. The research is focused on how small and medium sized enterprises in Croatia are considering the importance of technological changes, and are they giving enough attention to the changes in business that need to be done. The focus in the research is on internet tools usage in developing marketing communication with emphasis on Google products. It was meant to measure the level of knowledge, understanding, and willingness to learn and embrace a new form of communication to reach potential customers. An online survey was carried out and a questionnaire was sent to 1500 small and medium sized enterprises in Croatia, with 275 of them being filled it out. Results of the research gave insight about current usage of internet tools, reasons for not using internet tools, which tools are being used the most, and knowledge about customer behavior regarding information gathering and shopping online.*

**Keywords:** *business communication, information technology, internet tools, marketing communication, marketing strategy, small and medium sized enterprises*

### **1. INTRODUCTION**

Each day more and more consumers use and spend more time using internet and different online platforms. Thanks to the available technology consumers are more informed, more connected with each other, more powerful, and gain greater control over communication with companies through their websites and community networks. In today's digital era it comes to a transformation from industrial to digital economy that has knowledge, information, and new technology as the main backbone of prosperity. With the new technology, we have a new way of communication and a whole new spectrum of tools to use (Castells, 1996, referenced by Mesarić, 2005). Therefore, companies need to change their marketing strategy as well as the way of communication with clients.

Businesses today not only need to be present on the internet, they also need to differentiate themselves from competitors, and their websites need to offer more than just information for a price comparison. The point is that consumers are attracted to the websites not only for a product but for the experience (Jurković, Marošević, 2013). To stay on top, and to ensure that current clients continue to stay with the company and to attract new ones, companies have to be involved in continuous change that is happening in marketing field and technology progress. To stay competitive, they need to be up to date with new trends in the consumer world that changes rapidly, and carefully choose which path to follow considering numerous possible options.

Consumers expect a fast, convenient and efficient process of shopping with a plenty of information available on hand. One big change that has happened with the new technology is in the way how consumers act and in time needed to decide. According to GfK, "attention span is currently five minutes, seven minutes less than it was in 1998" (GfK, 2017). This is something that businesses worldwide and in Croatia must realize and respect; for consumers, time is essential. A lot of information is consumed online and there is lot to choose from, so companies need to develop a marketing strategy that is suited for their business situation. There is no one strategy that fits to every business, each must recognize what is the best approach to their consumers; where to find them and how to get their attention. Today everything is just a click away and easy for consumers, but on the other hand, for companies is getting more complicated and difficult to select the right way to approach more demanding customers.

Furthermore, 54% of consumers agree that if new technology is not easy to use they lose interest (GfK, 2017). Simplicity is the key, easy and fast website as well as simple and fast response will drive consumers to come back knowing what they can expect. The primary issue that companies need to realize is that new communication is not just adding to what exists, but communication needs to be completely transformed (Laick and Dean, 2010).

## **2. USAGE OF INTERNET TOOLS IN CROATIA**

Considering the level of integration of new technologies into all aspect of life and business, new technologies have become the main reason for growth (Boban, Babić, 2014). According to the Consumer Barometer Survey 2014/15 from Google, consumers in Croatia are using the internet mostly for research and comparing purposes, which include comparing prices, quality and availability (60%). Other reasons include: inspiration and confirmation, proven opinions and brand search, as well as search for locations and directions where to buy the product.

New market possibilities, offering services and products worldwide and reaching consumers that would not have been reached before, are good reasons for businesses to learn how to use new technologies and to adopt new tools available for business growth. There is a variety of internet tools to choose from; in this research Google tools were taken as an example. Considering Google as one of the biggest search engine used worldwide and their level of contribution to businesses, it is justified to say that Google is the most prominent information gatherer concerning consumers and their habits. In Table 1 is a comparison of Google Searches worldwide in the year they started to operate and in 2015.

Table 1: Google Search comparison 1998 and 2015, (Google Annual Search Statistics, <http://www.statisticbrain.com/google-searches>)

| Year                                | Annual Number of Google Searches | Average Searches Per Day |
|-------------------------------------|----------------------------------|--------------------------|
| 2015                                | 2,834,650,000,000                | 7,766,000,000            |
| 1998 (Google's official first year) | 3,600,000                        | 9,800                    |

Therefore, businesses can use this information in creating accurate strategy; from facts on devices based on how consumers shop, when and where they are searching for a product before purchase, location of purchase, and other related details necessary and available for everyday decision making. Tools for marketing strategy development and decision making are available to use for free if you know where to find them. Some of the tools businesses can use include: Google Trends, Google Barometer, Google My Business, Google AdWords and Google Analytics. These are just examples of possible tools that companies should consider to use with more available options depending on individual purpose and goal.

## 2.1. Usage of ICT in Croatian enterprises

Chart 1 has showed usage of information and communication technologies (ICT) in Croatian enterprises in different business areas in 2016.

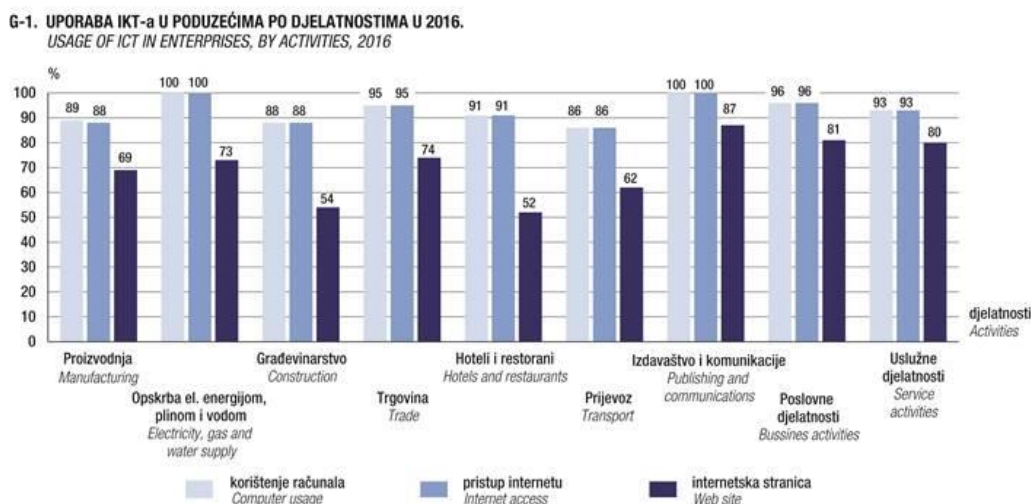


Chart 1: ICT usage in Croatian enterprises in 2016 (Croatian Bureau of Statistics, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-01\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-01_01_2016.htm))

There is on average, high level of ICT integration in business sectors in Croatia; 92% of enterprises use computers; 91% have internet access; but only 69% of enterprises own a web site.<sup>1</sup> Chart 2 shows internet access according to the type of enterprises in Croatia, where small enterprises slightly lag behind others.

<sup>1</sup> Croatian Bureau of Statistics (2016). *Usage of information and communication technologies (ICT) in enterprises, 2016, first results*, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-01\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-01_01_2016.htm)

G-2. PRISTUP INTERNETU U PODUZEĆIMA I PO VELIČINI PODUZEĆA U 2016.  
ACCESS TO INTERNET IN ENTERPRISES, BY ENTERPRISE SIZE, 2016

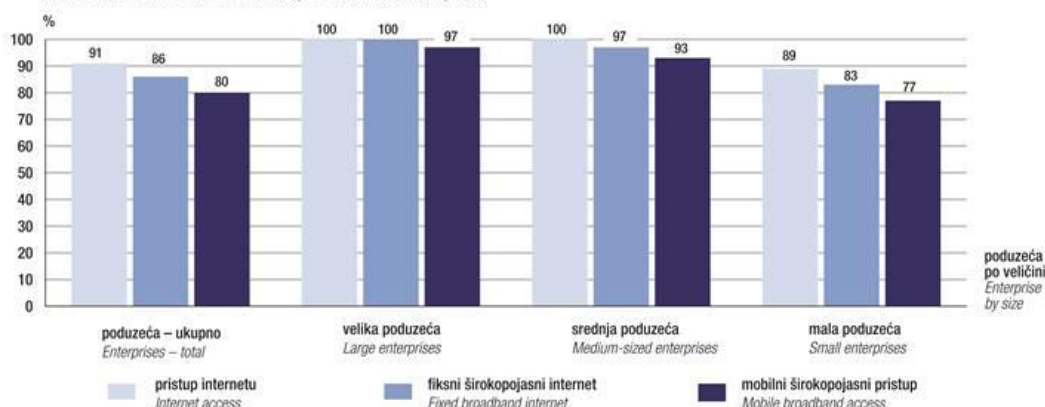


Chart 2: Access to internet in Croatian enterprises in 2016 (Croatian Bureau of Statistics, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-01\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-01_01_2016.htm))

Croatian enterprises are integrating ICT in their business process and business communication with other business entities which enables increase of efficiency. But the total volume of e-commerce compared to conventional commerce is still rather low; only 14% of sales were conducted via the internet. Two thirds of transactions were completed via the electronic data interchange systems (EDIs), while one third was completed by selling via web pages<sup>2</sup> according to the survey of Croatian Bureau of Statistics.

G-5. UPORABA DRUŠTVENIH INTERNETSKIH MEDIJA U PODUZEĆIMA U 2016.  
SOCIAL INTERNET MEDIA USAGE IN ENTERPRISES, 2016

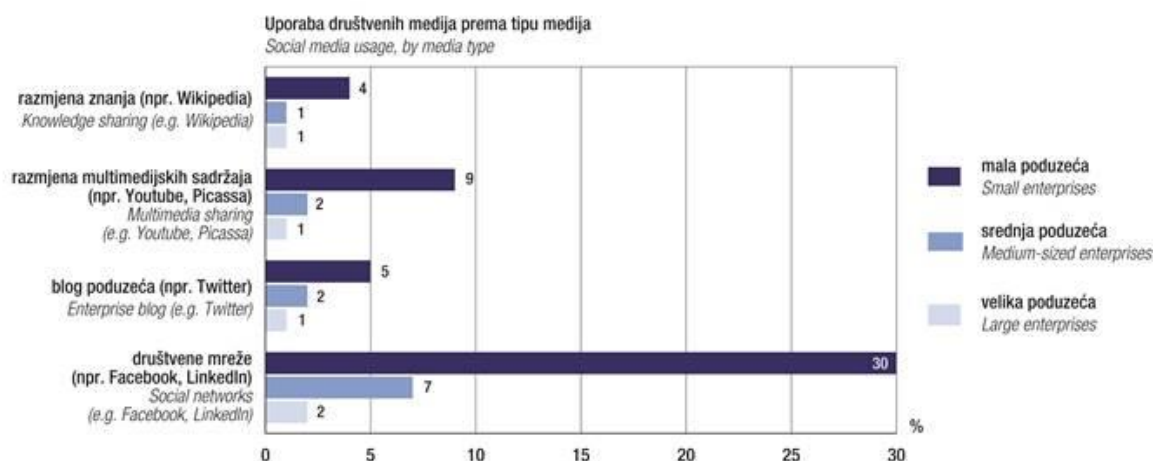


Chart 3: Social media internet usage in Croatian enterprises, 2016 (Croatian Bureau of Statistics, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-01\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-01_01_2016.htm))

Chart 3 points on social media internet usage among Croatian enterprises. Social media are mostly used for advertising and exchanging information with customers via blogs or social networks. They are predominantly used in small enterprises, while medium-sized and large enterprises rarely use social internet media for business purposes, according to the survey of Croatian Bureau of Statistics.<sup>3</sup>

<sup>2</sup> Ibid

<sup>3</sup> Ibid

Investments in ICT and new business models allows inclusion of enterprises in the internet economy and creation of opportunities for development and growth of the business outside the physical market. This is especially important for companies and economies that operate in markets of limited size, such as the Croatian market (Babić et al., 2011, p. 66). With all the changes happening, there are greater changes that need to occur to connect all segments in business and organization (Milardović, 2010). This is the main concern, specifically in businesses that do not have resources and information to adapt in timely manner (Castells, 2001, referenced by Mesarić, 2005, p. 391). Considering the integration of ICT in business, it can generate more profits and higher growth rates, according to research conducted on large Croatian companies (Boban, Babić, 2014).

## 2.2. Usage of ICT in Croatian households and by individuals

Survey from Croatian Bureau of Statistics for 2016 shows increase in the number of internet users among all age groups, except for the user group aged over 65 compared to 2015.

G-5. UPORABA INTERNETA KOD POJEDINACA U 2016.  
USAGE OF INTERNET BY INDIVIDUALS, 2016

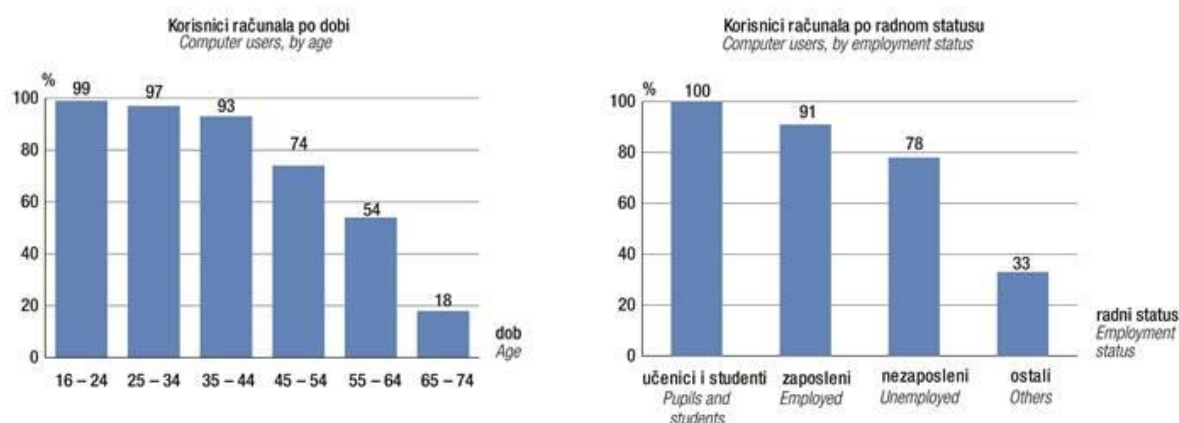


Chart 4: Usage of internet by individuals in Croatia, 2016 (Croatian Bureau of Statistics, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-02\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-02_01_2016.htm))

The comparison of the results with the data from the previous year showed that individuals mostly used the internet for obtaining information on goods and services 91%, obtaining information on health 73%, e-mail usage 79%, for reading daily news and magazines 91%, watching video content from sharing websites such as YouTube 80% and participating in social networks 69% according to Croatian Bureau of Statistics.<sup>4</sup>

There is also an increase of commerce via the internet. In 2016 there were 33% of individuals who purchased goods and services via the internet, which is an increase of 2% compared to 2015.

<sup>4</sup> Croatian Bureau of Statistics (2016). *Usage of information and communication technologies (ICT) in households and by individuals, 2016, first results*, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-02\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-02_01_2016.htm)

G-7. INTERNETSKA KUPNJA KOD POJEDINACA U PRETHODNIH 12 MJESECI, 2015./2016.  
INTERNET PURCHASES INDIVIDUALS, LAST 12 MONTHS, 2015/2016

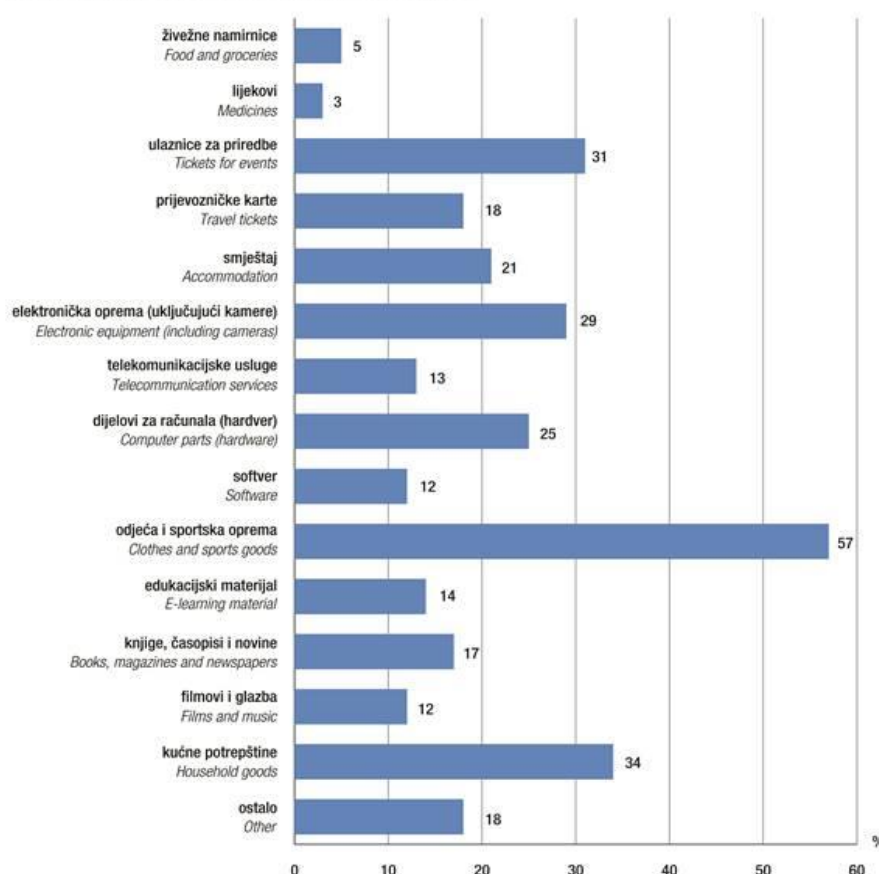


Chart 5: Internet purchases from individuals in Croatia, (Croatian Bureau of Statistics, [http://www.dzs.hr/Hrv\\_Eng/publication/2016/02-03-02\\_01\\_2016.htm](http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-02_01_2016.htm))

Based on the information from the Croatian Chamber of Commerce, only 25% of Croatian consumers buy online, compared to 53% on average in EU. On the other hand, only 15% of Croatian companies have online shops. However, considering shipping prices that are usually double then in the rest of EU, it is evident why Croatian consumers do not have consistency of online shopping and paying extra for a product that can obtained in the nearest shopping mall. (Končić, 2015).

### 3. METHODOLOGY OF RESEARCH

The research is focused on internet tools usage in small and medium sized enterprises in Croatia. The main idea is to highlight current business practice, major obstacles as well as areas for improvement. Research was done with primary purpose of finalizing graduate thesis, from which here are shown a couple of indicative results.<sup>5</sup> An online survey was carried out and a questionnaire was sent to 1500 small and medium sized enterprises in Croatia. It was collected 275 replies, which made satisfactory return of 18,3%. Survey was conducted from September of 2015 until April 2016. The enterprises were chosen as potential users for Google AdWords advertising according to size; namely from the pool of small or medium enterprises in Croatia.

<sup>5</sup> Kobak Walaitis, B. (2016). *Internetski alati u funkciji unapređenja komunikacije malih i srednjih poduzeća: primjer Google AdWords oglašavanje*, Vern – University of Applied Sciences, Zagreb.



#### 4. RESEARCH RESULTS

The main objective of the research was to create insight about current business practice concerning internet tool usage in small and medium Croatian enterprises. Based on gathered information some suggestions for further research and for improvement of marketing and business practice should be made. From total sample of 275 enterprises, out of which 89% have web site, which is better than Croatian average of 69% (see 2.1.). From all web sites; only 52% are adjusted for mobile devices, while 28% were not, but 20% are in the process of change (Chart 6). That means that only a half of respondents are aware of importance of having mobile friendly website in order to create some experience for their visitors. Namely, it is estimated<sup>6</sup> that half of the internet searches are coming from mobile devices. On the other hand, second half of websites will lose potential audience even without looking at the content on their web page. Chart 7 is revealing reasons for not using internet tools; where lack of resources was in the first place (57%), lack of time on second (20%), and no need for internet on third place (17%).

Website adjusted for mobile devices

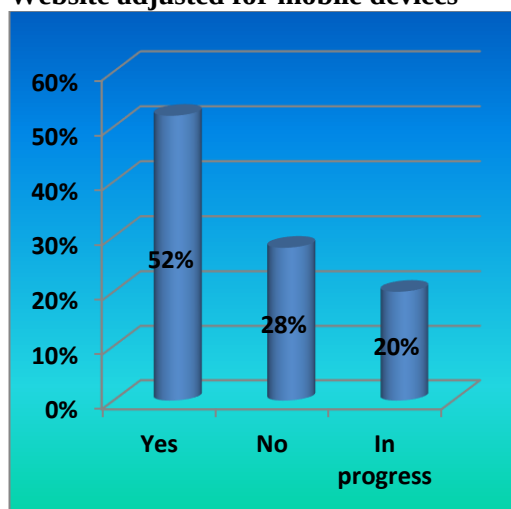


Chart 6: Website adjusted for mobile devices (Walaitis, 2016, p. 56)

Reason for not using internet tools

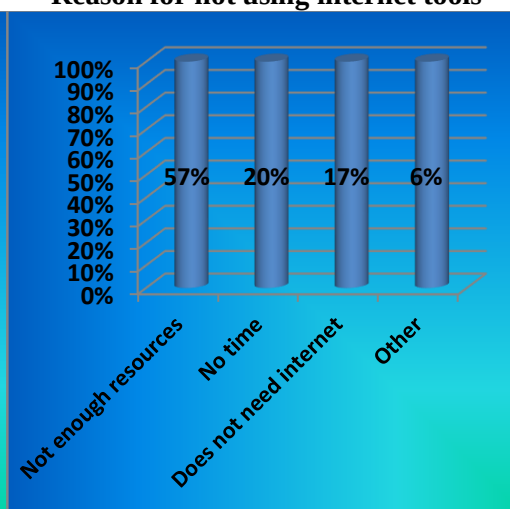


Chart 7: Reasons for not using internet tools (Walaitis, 2016, p. 63)

Sadly enough, most of internet tools are free, and there is an opportunity for small and medium enterprises to raise awareness about available options for building communication and relationship with the consumers. Furthermore, time should not be an issue, since all of this activities need to be integrated in the standard business activities and not require extra time.

*Chart following on the next page*

<sup>6</sup> Poslovni dnevnik (2016). *Evo zašto hrvatski poduzetnici i dalje gube novac*, <http://www.poslovni.hr/poduzetnik/evo-zasto-hrvatski-poduzetnici-i-dalje-gube-novac-315082>.

**Google tools usage in small and medium sized businesses in Croatia**

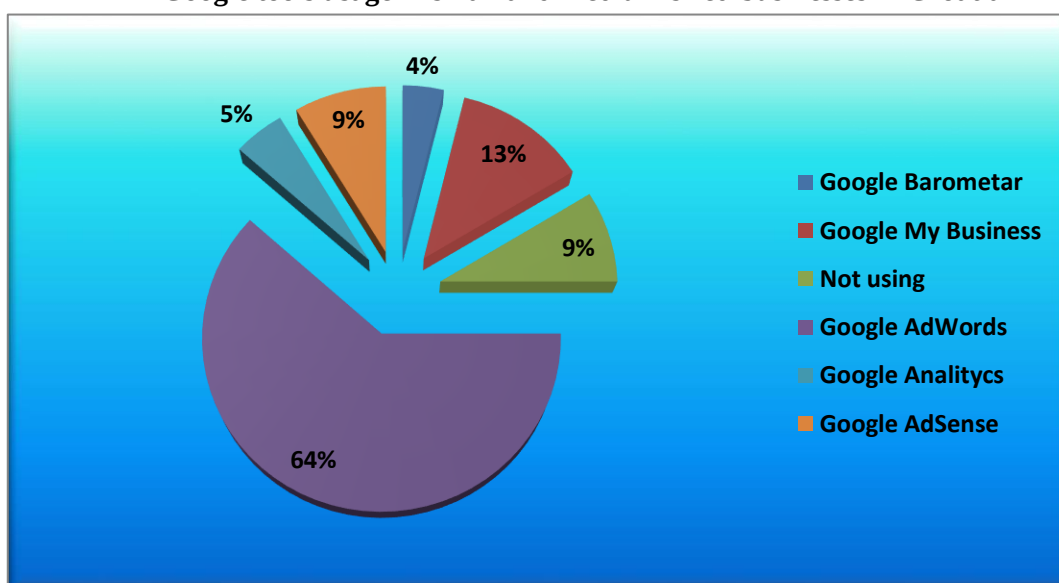


*Chart 8: Google tools usage in SME, Croatia (Walaitis, 2016, p. 59)*

Chart 8 is showing the most used Google tools, which was a multi answer question in the research. All tools except Google AdWords are free to use. Google AdWords used 64% of businesses, even though it was only tool that needs resources to be used. It can be connected to push channels with intention to sell. The rest of the mentioned tools have very low usage, which implies that small and medium enterprises in Croatia lack information and understanding about benefits of offered tools and new options for communication with consumers.

**Tracking consumer behavior changes/Strategy changes regarding new trends**

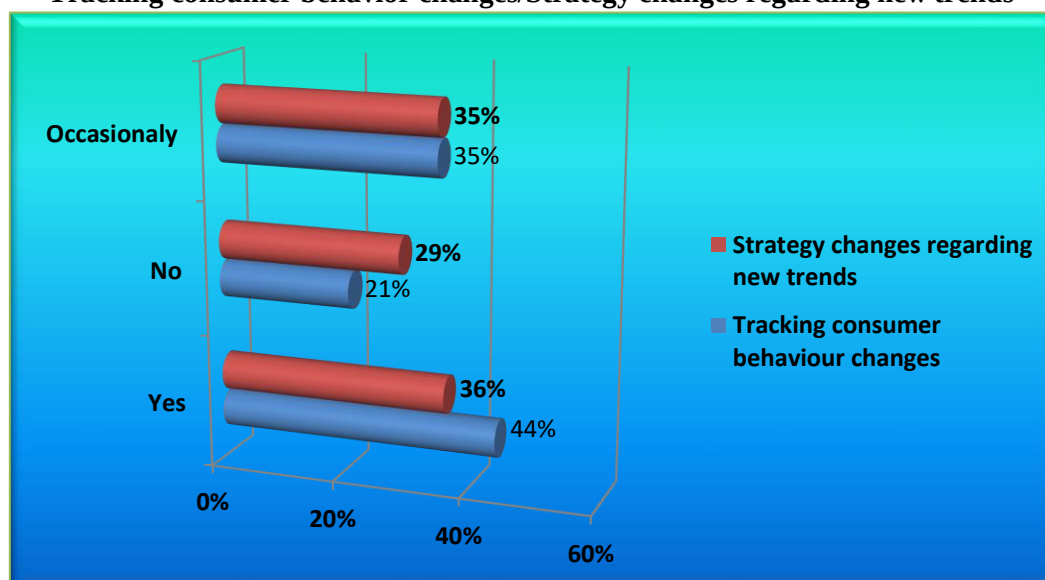


*Chart 9: Tracking consumer behavior changes/Strategy changes regarding new trends (Walaitis, 2016, p. 60-61)*

From Chart 9 could be noticed that only 44% of small and medium enterprises in Croatia track changes in consumer behavior, and only 36% of them change their strategy regarding new trends.

Shown data clearly point that majority of small and medium enterprises in Croatia are lacking information and knowledge about available possibilities about internet tools and consumer behavior. There is a plenty to choose from to help business to stay on track and to follow trends and consumers.

## 5. CONSLUSION

In modern economy enterprises must adopt new business models and methods if they want to succeed. Traditional marketing, sales and communication channels need to be fused with internet channels in an attractive and convenient way for consumers, and affordable and efficient way for companies. Marketing strategy and communication need to be reinvented in order to appeal to more demanding customers.

Behavior of Croatian consumers is following the global trends in spending more time on internet and using it for different purposes; from entertainment, gathering information and shopping.

At the same time, 44% of Croatian small and medium enterprises are aware and track changes in consumer behavior, while only 36% change their strategy accordingly. Majority of small and medium enterprises in Croatia lack information and knowledge about options and possibilities of usage different internet tools and therefore missing benefits of available tools, as well as opportunities to develop communication according to customers' expectations. In order to survive in competitive environment, Croatian enterprises need to be fast in adapting to new consumers' behavior and usage of appropriate marketing communication strategy and tools.

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