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TOURISM SECTOR IN LIBYA – A SITUATION ANALYSIS

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Abstract

Libya started its recovery after the conflict called Arab Spring in 2011 and the improvement process may be seen in GDP growth, stabilization of the industry, in the areas of public expenditure and financial management, infrastructure repair, job creation for young people and service delivery and in social processes. Although the country's economy is mostly based on oil and natural gas extraction, other sectors also should be developed to build more pillars for the economy. The aim of the paper is to provide a strategic environmental analysis from the aspects of tourism and hospitality sector, by which the opportunities for improving the role of tourism sector in Libya are outlined. The first step of this development is to create a safer environment that is necessary for the development of different branches of tourism and hospitality sector, the second step is to make efforts for increasing the quality of services. Based on a document analysis and own experiences the authors formulated recommendations that may serve the quality improvement efforts.

Key words: *tourism industry, environment analysis, Libya, job creation, SMEs*

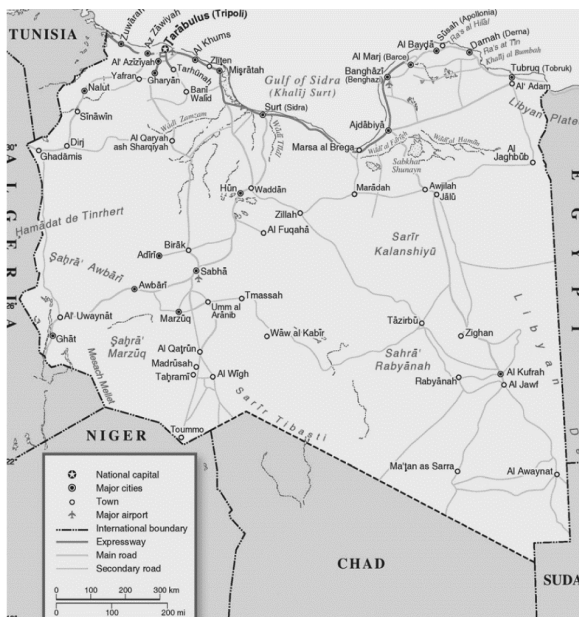
JEL Classification: Z32, M21, E20

Introduction

Libya is a country in the so-called Maghreb region of North Africa bordered by the Mediterranean Sea to the North, Egypt to the East, Sudan to the Southeast, Chad and Niger to the South, Algeria and Tunisia to the West (Figure 1.). The three main parts of the country are Tripolitania, Fezzan and Cyrenaica. With an area of almost

1.8 million square kilometres, Libya's territory is 1.8 million km², this is the 4th fourth largest country in Africa and the 17th largest country in the world. The population is 6.375 million. Libya is among the largest proven oil reserves of any country in the world (Alammari et al., 2017).

Figure 1 Map of Libya



Source: <http://ontheworldmap.com/libya/libya-road-map.html>

Libya is categorized as an upper-middle-income country by the United Nations (UN, 2018). The economy is dominated by oil and gas industries. In 2010, total oil production (crude plus liquids) was approximately 1.8 million barrels/day (IMF, 2010). The revenue from oils and natural gas production represents the main financial resources for the expenditure on infrastructure, education, and job creation. A main official goal of restructuring the Libyan economy is to increase the role of the private economic sector in the economy (Alammari et al. 2017).

Economic changes in Libya may bring results to achieve sustainable investment in the non-petroleum industry sector, mainly into manufacturing industry and agriculture. The main economic development aim of Libya is to reach greater variation in capital, products, and imports, the non-oil sector and raw material, it is likely that the economy will be self-sustainable and will grow at high speed, like other emerging economies (Bala et al., 2017). Nevertheless, Libya achieved real steps towards the economic growth in recent year but this growth is mostly based on oil revenues, which contribute to mostly of GDP growth in Libya and represent 97% of total GDP (Otman and Karlberg, 2007). In developing of structure and in reframing

of the Libyan economy, the economic and political policy on various environmental and social factors has moved forward.

Libya is now entering a new stage of its development. In the past, the country was significantly isolated from the outside world, the focus was put on living conditions and social standards, oil revenues were the main source of national prosperity, and government focused on the distribution of oil revenues to address social needs.

Today, the emerging future of Libya may be described by:

- Increasing integration with the outside world,
- Greater opportunities for individual achievement and involvement in the productive sector,
- Oil revenues supplemented by wealth created in other parts of the economy,
- Government increasingly working with the private sector to enable the creation of wealth in competitive markets (Alammari et al. 2018).

The aim of this paper is to give a summary on the present circumstances of the Libyan economy, focusing on the opportunity for development in the tourism sector. Based on a wide macro-environmental analysis suggestions are formulated for future measures in order to stimulate tourism activities and related industries.

Material and Methods

The paper provides a wide environment analysis of Libya, using desk research as a method, based on literature sources including IMF, OECD, UN and World Bank official reports, documents and databases of the Libyan Central Bank, international statistical websites and authors' working experiences. The literature review was conducted by searches with key words related to Libya, Libyan tourism sector, MENA countries, environment analysis, small and medium sized enterprises, etc. As a second step, besides the document analyses, calculations were made using secondary data in order to explore the macro-environmental factors of Libya which influence the country's economy and the tourism sector in particular. The environment analysis resulted a STEEP analysis, by which tool the conclusions and recommendations were outlined.

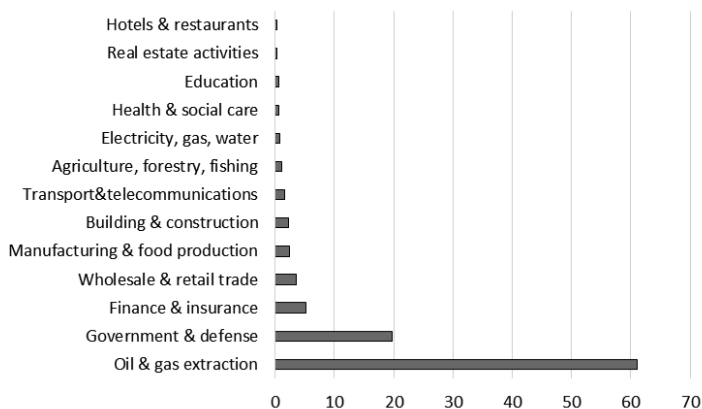
It should be highlighted that relevant and official governmental statistical data are rarely available after the political changes, so most of the newest available data are for 2012.

Results and Debate

Economy of Libya

The main source of GDP is oil and gas extraction, the other sectors represent a much lower share in the national economy. This makes the country as a one-pillared economy (Figure 2).

Figure 2 Sectoral contribution to GDP in Libya in 2011 (%)

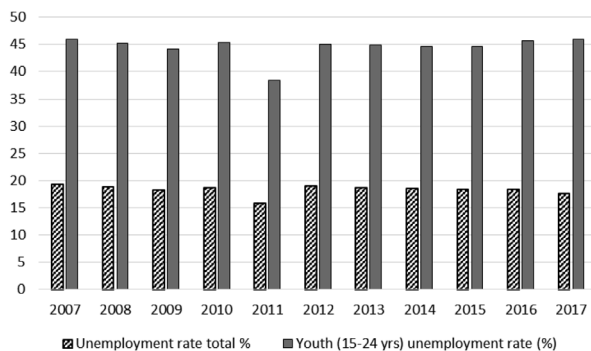


Source: own calculations based on Central Bank of Libya data

The numbers verify that the country's economy is one pillared (oil and gas extraction), and due to the fragile political circumstances a high focus is put on defence and governmental issues. Due to the lack of data gathering, there are no reliable and official Libyan statistical data after 2011 about the country's performance according to the different sectors.

The unemployment rate is around 15-18%, it is fluctuated substantially in recent years, but it tended to decrease in the period between 1999-2018, the unemployment rate was at 15.7% in 2018 (Knoema Atlas, s.d.). On the other hand, unemployment rate is very high in the young age groups, it reaches almost 50% (Fig. 3), which generates many social problems for the young generation, and may lead to serious economic problems in the future.

Figure 3: Unemployment rate in Libya (%) in the period between 2007 and 2017



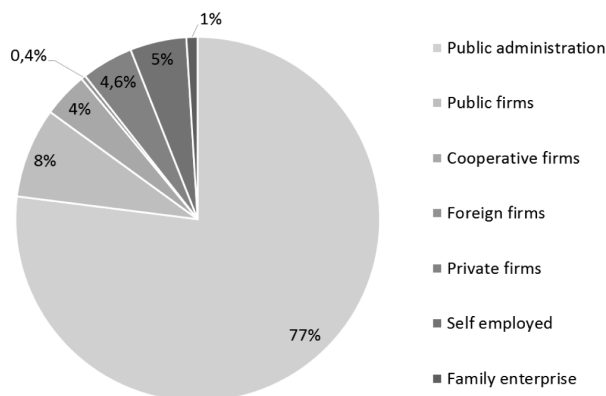
Source: own calculations based on www.statista.com

The vast majority (85 percent) of Libya's active labour force is employed in the public sector, a high rate even by regional standards. The rate for women is even higher (93%). Prior to the uprising, in a population of 6 million, Libya's labour force comprised 2.6 million workers, nearly 50 percent of who were foreign. During the political crisis, an estimated 1 million foreign workers fled Libya (World Bank Group, 2015).

Compared to other middle-income countries, and the countries of the region, the employment in industry and agriculture is considerably lower in Libya, these two sectors account for only 9% and 1% of the labour force, respectively. There is a huge decline in the employment in industry, in 1986 30% of employed worked in industry, in 2012, only 9%, while these numbers for agriculture are 20% in 1986, and only 1% in 2012. The active labour force has grown in services, now it reaches 70%, the sectors of these services are various.

The vast majority (85%) of the employed population works in the public sector (public administration and public firms) which is higher than the regional standards. The proportion of foreign companies is very low, which is reasoned by the national laws. Self-employment and private firms represent almost the same number (4-5%), self employment is rather low, as most of the Libyan citizens are not planning to think in entrepreneurship. These figures are generated by the special, one-pillared structure of the Libyan economy, where state-owned enterprises are dominating (Figure 4). Nevertheless, the situation is similar in other oil-based countries like Iran (Nosratabadi and Illés, 2018).

Figure 4 Libya's labour force by occupation and business types (%)



SOURCE: OWN CALCULATIONS BASED ON WORLD BANK GROUP DATA (2015)

SMEs in Libya

Small and medium sized enterprises, as well as micro enterprises represent the accelerating power to economy through human, financial and technological resources which they control and use, so the issues of keeping and supporting of SMEs have become the priority of governments and policies makers.

In Libya, the political events still affect the economic performance, creating a changing and unclear situation for the whole national economy, the impact between economy and policy are very complicated. Since February 2011, the country has entered internal conflicts with external interventions that destroyed decades of development and economic prosperity. The infrastructure has been destroyed and thousands of people have left abroad, and the country has lost most of its non-oil or oil revenues (Alammari et al., 2016). SMEs in different economic sectors suffer from political instability for long time.

In the Arabic world, the countries adopted different criteria regarding the number of employees as well as the requirements of capital to define the SMEs, which differ from the European Union's definition (Table 1.)

Table 1 Definition of SMEs in some Arabic countries

Country	Enterprise type according to number of employees		
	Micro	Small	Medium
Egypt	1 to 4	5 to 14	15 to 49
Lebanon	1 to 9	10 to 49	50 to 99
Oman	1 to 5	6 to 20	21 to 100
Jordan	1 to 4	5 to 19	20 to 99
UAE	1 to 9	10 to 49	50 to 499
Tunisia	1 to 5	6 to 49	50 to 99
Libya	less than 5 or 10	less than 25	25 to 50

Source: own summary based on Jordan Human Development Report (2011), EIB (2015) and OECD (2016)

In general, until today, there is no SME legislation in Libya, there is strong intention to develop an SME Law, where the main characteristics of micro, small and medium enterprises will be defined. Of course, SMEs significantly contribute to job opportunities and growth, but in Libya, SMEs contribute to GDP only by 5%. Anyway, there is no official information available regarding the contribution to employment, but the estimations of international organizations shows that SMEs account for 11% of total employment in Libya. Comparing to other countries, this consider as a sign of slowly growth of SMEs sector in Libya. In the same time there is no official numbers of number or size of SMEs, but the estimations of 2006 refers to 117 828 enterprises, the average workers per enterprise is 2.5. The main statistics of Libya in different sectors are summarized by Table 2.

Table 2 Statistics of SMEs by sector

Business Census 2006	Hotels		Trade and Commerce		Services		Manu-facturing	
	number	%	number	%	number	%	number	%
Number of enterprises	241	0.2	83 298	70.7	17 539	14.9	16 750	14.2
Number of workers	8 630	2.9	177 641	61.5	61 022	21.1	42 017	14.5
of which, non-Libyan	-	-	36 986	45.5	12 118	15.0	32 044	39.5
Average workers per enterprise	34.7		2.1		3.5		2.5	

Source: own calculations based on OECD (2016)

The lack of accommodation opportunities and the poor performance of tourism and hospitality sector are indicated by these numbers, which refers to the need for improving the infrastructure of tourism sector by micro-small and medium enterprises which is the second main step in the development of the Libyan tourism sector after the creation and stabilization of political safety.

Economic impacts of political instability

The Arab region witnessed a serious political turn in the region movements in the late 2010, known as the Arab spring revolutions. This instable situation is still affect the economies, the societies and the international relations of these countries (Massad, 2012). After the success of the revolution in Egypt, events broke out in Libya on February 17, 2011 and lasted until the end of the old regime ruling for 4 decades. The revolution continued to develop into a kind of civil war between the various factions, which established several states within the state, in addition to the control of terrorist groups, large areas of Libyan territory are in the focus of international debate so far (Elkrghli, 2016). This situation led to that Libya is considered among the worst countries regarding the political instability index: Turkey has the 184th place, Libya is 187th, Iraq is 188th, and at places from 189th and Somalia, Sudan, Pakistan, Afghanistan, Yemen can be found, the last in the row, as 194th there is Syria (UN, 2018).

There is a strong relationship between the political stability and the level of economic performance (IMF, 2010):

- Unemployment is one of the most serious problems that threaten the stability of countries because it is the main cause of many social and political manifestations. Unemployed young people can tend to practice many unethical manifestations such as crimes and violence.
- Inflation has been and remains one of the most important challenges facing political and economic decision makers, as it is directly related to the level of prices and the ability of people to meet their needs, which in turn is one of the main causes of violence and thus political instability.

- Financial and administrative corruption is one of the most important reasons that lead to political instability as well as the disruption of development. It is noted that financial and administrative corruption have facilitated the financing of terrorist operations according to the relationship between terrorist organizations and sources of corruption, a society with fewer administrative and financial corruption tends to be more politically stable.
- Political instability leads to fear of foreign investors and thus their reluctance to enter the politically unstable country, as well as withdrawing their investments to safer countries, giving larger numbers of outflows.
- Libya, as a country rich in oil production and reserves, experienced a good economic level compared to neighbouring countries before the outbreak of political events in 2011. After the revolution, the main indicators changed, due to the fragile political situation and instability (Table 3).

Table 3 Some main economic indicators for the period 2010-2017

Year	Population	GDP per Capita \$	Inflation Rate %	GDP Growth %
2010	6 169 140	12 440	14%	5%
2011	6 193 501	4 730	18%	- 62%
2012	6 198 258	11 710	9%	123%
2013	6 195 970	10 960	7%	-13%
2014	6 204 108	7 800	17%	-24%
2015	6 234 955	5 970	15%	-9%
2016	6 293 253	5 110	14%	-3%
2017	6 374 616	6 540	24%	27%

Source: own summary based on World Bank Microdata Library (Libya)

Tourism sector in Libya

Although Libya has outstanding values in tourism attractions, but due to the present political instability and the previous and present weak the governmental interest in the tourism-marketing sector it is evaluated as a weak point of the country according to global indicators (Naama et al., 2008; Lafferty and Yousef, 2015; Elkrggli, 2016; Alammari et al., 2017; Said, 2017).

Libya has an extremely large land area, has a special natural environment with mountain areas, deserts and the longest seaside in the Mediterranean. Libyan people are friendly and they keep their traditions, culture, music and cuisine. The overall features of Libya would allow competing in the stage of international tourism (Masoud, 2013).

The most significant tourism constituents of Libya are the following:

- excellent natural resources (site, weather, climate, geographic nature, surface, waters, vegetal life, animal life, development and other natural resources);
- good weather and climate (temperatures, wind, humidity, rains, plants and forests);
- outstanding geographic features (mountains, rivers, sea, valleys, rocks and deserts, desert lakes, 2000 km long seaside area) (Said, 2017).

- Nevertheless, Libya is not among the widely chosen touristic destinations. The main reasons of the unfavourable situation are the absence of high quality services (Elkrghli and Elgimati, 2013):
- the lack of airlines services,
- the shortage of excellent hotels,
- the decrease in the quality of services at local hotels,
- the lack of tourism programmes and recreational services,
- the lack of reliable public transport services,
- the poor communication system,
- the absence of appropriate financial services and the barriers of language.

Libya could be one of the most favourable tourism country in the world if the tourism industry would be better respected by the state. The tourism industry could be a good potential for economic diversification and could be a second pillar besides the oil and gas revenues. An environmental report (Khalifa, 2010) highlighted this risk, as Libya is ranked among the most hydrocarbon-dependent countries, and according to recent estimations, the oil depletion is nearer to 20 years.

Libya's tourism ministry representatives stated that there is a strong intention to open Libya to the world, as Libya's tourism potential is excellent. When compared with other Northern African countries, one can see the huge differences. Morocco and Tunisia receive 6 million tourists each year, and Egypt more than 10 million, while Libya receives only a few hundred thousand visitors in the recent years (Goodland, 2013).

Naama et al. (2008) highlighted that human resource training and education is an important task which must be strengthened in the private sector, to match customers' (i.e. the guests') and industry needs, and to open cultural and religious dimensions which could improve the poor industry image. A special feature of Arabic countries was mentioned by Jafari and Scott (2014), namely halal tourism, and religious tourism, which should also be considered in the strategy formulation process. Shakeela et al. (2012) focused on sustainability of the tourism sector, which could raise the respect and prestige of tourism and hospitality sector, but as it was underlined, sustainable tourism needs more and better-educated human workforce.

An important problem of Libya's tourism and hospitality sector is the lack of appropriate accommodation facilities for foreign tourists. As Lafferty and Youssef (2015) mentioned the need for accommodation opportunities and the improvement of human resources in hotel sector is a critical point. According to Alnawas and Hemsley-Brown (2019) hotel performance is assessed indirectly, via customer relationship capability, branding capability and service innovation capability. Chen and Myagmarsuren (2012) stated that market orientation (i.e., customer and competitor orientations) as a business strategy has just recently been adopted in the travel and tourism industry by which performance and value offerings may be stimulated. The future tourism and hospitality sector strategy should focus on these issues as well.

Situation analysis by macro-environmental factors

The main goal of the authors was to show the importance of changing the one-pillar based economy (focusing on oil extraction), and to shift towards building other pillars in other sectors. The main problems are related to the unstable political system, the absence of well-built system of tourism-related infrastructure, the lack of SMEs and the low quality of services. For quality improvements, a conscious situation analysis is needed, to make plans, to check feasibility of the plans, and after preparations to implement and control the realization process. This is a main task of policy developers and responsible persons at government and company managers. The process shall follow the quality assurance methods, with a special focus on controlling (Illés and Szuda, 2015; Xu et al., 2018).

Based on the literature sources, situation analysis and the experiences of authors, the most important quality improvements to solve the tourism-related problems of Libya are the following:

Lack of tourism-related infrastructure

- lack of accommodation in terms of both quantity and quality for international tourists close to the principal attractions (classical archaeological sites, coastal areas, desert sights),
- lack of road signs posting at places of interest in foreign language,
- inadequate road maps of Libya,
- inadequate maps for the principal towns and cities,
- lack of information centres at the site areas,
- despite the large number of restaurants, there are only a few that are of an acceptable standard to international tourists,
- lack of adequate entertainment or cultural activities organized for presentation to visitors,
- poor range of Libyan souvenirs and handicrafts.

Lack of awareness and image

- promotional tools are poor,
- negative image of the country as a tourist destination.

Lack of competent human resources

- lack of good quality personnel.

To get a complex view about the tourism sector, the STEEP analysis was chosen by the researchers, which describes and analyses the social, technological, economic, environmental and political factors, which influence the country's development and particularly the tourism sector itself (Table 4). This analysis of the macro-environment formulates a good basis for starting to generate recommendations and strategic plans for the future.

Table 4 STEEP analysis of Libya

S	+	• living traditions • diversity in culture
	-	• social insecurity civil war, social differences, lack of entrepreneurial attitude, unemployment of young people
T	+	• well-built infrastructure and transport facilities before the Arab spring
	-	• infrastructure problems due to civil war and terrorist attacks • lack of information exchange • poor business information • lack of R&D
E	+	• wealth in oil and non-oil mineral resources • wealth of archaeological resources • wealth in natural resources • growing GDP
	-	• economic crisis • high unemployment rate • one-pillar economy (high dependency on oil and gas sector) • lack of small and medium sized enterprises
E	+	• good natural environmental features • long seaside • touristic attractions • good climate • special attractions (desert, oases)
	-	• impacts of civil war
P	-	• political instability • regional conflicts • civil war • refugee crisis • terrorist attacks

Source: own summary

The most critical problems are related to the politics-generated safety problems and instability, which have impacts on the social and technology factors as well. International tourism is a huge problem for countries without peaceful circumstances, but when conditions are safe, tourism may contribute to world peace and globalization (Becken and Carmignani 2016).

Conclusion

Libya has a huge potential for tourism and hospitality sector as the location of the country is excellent, it can attract many tourists, but the image of the country must be changed. A re-established security could raise growing interest for Libya as a tourist destination.

Although the country has a well-educated workforce, but they do not work in private sectors, or they establish enterprises in other countries. Some policy changes are needed to support them, as Libyans are interested to start business; the entrepreneurial dynamism is high among Libyan people. The political and social security is the most important issue. Supposing the peaceful status of the country two elements should particularly be considered, i.e. securing the borders of the country and balancing between local values and demands of tourists.

Quality improvements in tourism marketing are needed, as it is an important component of income for several sectors, not only tourism sector (such as manufacturing, other services, private transportation, food production etc.). Therefore, there is an urgent need to develop human resources, particularly indigenous personnel, for delivering quality services for tourists, as well as enhancing general skills of the local workforce, the skills and knowledge that education and training shall bring through special trainings and courses for new entrepreneurs.

Activating the legal and technical framework for SMEs support programs will make this sector more flexible and can make of this sector as a tool for economic growth in the reconstruction phase in Libya by expanding tax exemptions and facilitating legal procedures.

Focusing on human resources through training and qualifying employees through state training centres and institutes at reduced or free prices, or to find and help investors to choose projects that are in accordance with the industrial reality and the conditions of economic feasibility.

From marketing point of view, supporting these industries is necessary, by opening up new markets for industrial products, considering that advertising and promotion is one of the means of marketing, it is necessary to reduce their cost to the SMEs owners. The establishment of international exhibitions for the products of small and medium projects in order to identify the needs of local and international markets is also suggested.

Financially, the creation of financing products suitable for small enterprises or adopting programs for financing and lending to SMEs on terms of easy payment by banks in a manner that leads to access to the best productivity and quality.

To take advantage of international experiences in restructuring the economy by focusing on supporting small and medium-sized enterprises in the post-conflict phase is also a helpful tool of quality improvements.

To activate international promotion programs for opportunities in Libya to restore growth and reconstruction of the country may contribute to increased foreign inflows and access to specialized financing institutions.

And last but not least, the Libyan problem is mostly a political and security problem, which should be put into the first place. No economic actions can be done without providing the necessary political ground, which requires cooperation between the various local and foreign parties to end the current conflict.

Bibliography

1. Alammari, A, Darougi A.M., Bayoumi Hamuda H. (2018). Potential Impacts of Climatic Changes on the Touristic Activity Sector in Libya: A Review and Future Research. In: Bayoumi, Hosam (ed.) Proceedings Book of 9th ICEEE, Obuda University, Budapest, pp. 120-137.

2. Alammari, A., Ashour, K. A., Dunay, A. (2017). Tourism in Libya - Barriers of Development. In: Kiglics, N. (ed.) II. Turizmus és Biztonság Nemzetközi Tudományos Konferencia, Tanulmánykötet, Pannon Egyetem, Nagykanizsa, Hungary, pp. 415-422.
3. Alammari, A., Khalif, A. A., Othman, G. (2016). The importance of SMEs in Libyan tourism sector pp. 45-60., In: Felician, Bylok; Anita, Tangl (eds.) The role of management functions in successful enterprise performance. Agroinform Kiadó, Budapest
4. Alammari, A., Othman, G., Tatar, E. (2017). Economic development in Libya. In: Kiglics, N. (ed.) II. Turizmus és Biztonság Nemzetközi Tudományos Konferencia, Tanulmánykötet, Pannon Egyetem, Nagykanizsa, Hungary, pp. 424-429
5. Alnawas, I., Hemsley-Brown, J. (2019) Market orientation and hotel performance: investigating the role of high-order marketing capabilities, *International Journal of Contemporary Hospitality Management*, <https://doi.org/10.1108/IJCHM-07-2018-0564>
6. Bala, U., Chin, L., Ranjanee, S., Ismail, N.W. (2017). The Impacts of Oil Export and Food Production on Inflation in African OPEC. *International Journal of Economics and Management*, 11(S 3). 573-590.
7. Becken, S., Carmignani, F. (2016). Does tourism lead to peace? *Annals of Tourism Research* 61. 63-79. <https://doi.org/10.1016/j.annals.2016.09.002>
8. Central Bank of Libya (2016). Economic Bulletin 4th Quarter 2016. [ONLINE] Available at: <https://cbl.gov.ly/en/wp-content/uploads/sites/2/2016/03/Economic-Bulletin-4th-Quarter-2016.pdf> [Accessed: 02-02-2018]
9. Chen, C. F., Myagmarsuren, O. (2013). Exploring the moderating effects of value offerings between market orientation and performance in tourism industry. *International Journal of Tourism Research*, 15(6), 595-610. <https://doi.org/10.1002/jtr.1900>
10. Elkrghli, S. (2016). The Impact of Libyan Political Conflict (2013/2016) on Businesses' Marketing Performances: The Case of Tourism SMEs, *Advances In Global Business Research*, 13(1) 109-124
11. Elkrghli, S., Elgimati, Y. (2013). The Libyan consumer behavior attitudes towards goods and services during the 17th of February Revolution 2011: The case of Libyan families in the Eastern liberated regions. *Review of Social Studies, Law and Psychology*, 7(1), 6-18.
12. Goodland, R. J. A. (2013). Libya: The Urgent Transition to Environmental Sustainability, 152 p. The Environment General Authority, Tripoli, Libya
13. Illés, B. Cs., Szuda, Cs. (2015). Quality in manufacturing - is a management tool? In: Dunay, A. (ed.) Proceedings of the 5th International Conference on Management. Management, Leadership and Strategy for SMEs' Competitiveness. Szent István Egyetemi Kiadó, Gödöllő, Hungary
14. International Monetary Fund (IMF), (2010). Financial Statistics Yearbook, 2010. Washington DC., USA, 1056 p.
15. Jafari, J., Scott, N. (2014). Muslim world and its tourisms, *Annals of Tourism Research*, 44. 1-19. <https://doi.org/10.1016/j.annals.2013.08.011>
16. Jordan Human Development Report, (2011), Small Businesses and Human Development, Ministry of Planning and International Cooperation, United Nations Development Programme, Amman, Jordan 182. p.
17. Khalifa, A. E. O. (2010). Destination Libya: Developing Libya as an Management, PhD Thesis, University of Wales Institute, Cardiff, UK.
18. Knoema World Data Atlas (s.d.) [ONLINE] Available at: <https://knoema.com/atlas/Libya/Unemployment-rate> [Accessed: 06-02-2019]

19. Lafferty, G., Youssef, J. (2015). Beyond the Arab Spring: Evaluating Libya's long-term tourism prospects, *Tourism Management Perspectives*, 14. 55-62. <https://doi.org/10.1016/j.tmp.2015.03.002>
20. Map of Libya [ONLINE] Available at: <http://ontheworldmap.com/libya/libya-road-map.html> [Accessed: 06-02-2019]
21. Masoud, N. 2013. Libya's Step towards Change. *Journal of World Economic Research*. 2(4), pp. 75-81.
22. Massad, J. (2012) [ONLINE] The Arab Spring' and other American seasons. Al Jazeera, Available at: <https://www.aljazeera.com/indepth/opinion/2012/08/201282972539153865.html> Accessed: 29-08-2012)
23. Mura, L., Kljucnikov, A. (2018). Small Businesses in Rural Tourism and Agrotourism: Study from Slovakia. *Economics & Sociology*, 11 (3), 286-300
24. Naama, A., Haven-Tang, C., Jones, E. (2008). Human resource development issues for the hotel sector in Libya: a government perspective. *International Journal of Tourism Research* 10(5). 481-492. <https://doi.org/10.1002/jtr.683>
25. Nosratabadi S., Illés B. Cs. (2018). Management of Business Model of SMEs' in Iran. In: Bylok, F.; Albrychiewicz-Słocińska, A.; Cichoblażinski, L. (eds.) 8th International Conference on Management: Leadership, Innovativeness and Entrepreneurship in a Sustainable Economy: Book of Proceedings Czestochowa, Poland, pp. 458-462.
26. Otman, W.A., Karlberg, E. (2007). *The Libyan economy: economic diversification and international repositioning* Springer Berlin, Germany
27. Said, W. (2017). The basic constituents of tourism in Libya. *International Journal of Scientific and Research Publications*, 7(5) pp. 755-765.
28. Shakeela, A., Ruhanen, L., Breakey, N. (2012). Human Resource Policies: Striving for Sustainable Tourism Outcomes in the Maldives, *Tourism Recreation Research*, 37(2). 113-122. <https://doi.org/10.1080/02508281.2012.11081696>
29. Statista - The Statistics Portal (s.d.) [ONLINE] Available at: <https://www.statista.com/statistics/808770/unemployment-rate-in-libya/> [Accessed: 06-02-2019]
30. Statista - The Statistics Portal (s.d.) [ONLINE] Available at: <https://www.statista.com/statistics/812198/youth-unemployment-rate-in-libya/> [Accessed: 06-02-2019]
31. UN (2018). *World Economic Situation and Prospects 2018*, UN, New York, USA
32. World Bank Group (2015). *Labor Market Dynamics in Libya, Reintegration for Recovery*. International Bank for Reconstruction and Development/The World Bank Washington DC, USA, 103 p.
33. World Bank Microdata Library (Libya) [ONLINE] Available at: <http://microdata.worldbank.org/index.php/home> [Accessed: 06-10-2016]
34. Xu, H., Liu, Y., Lyu, X. (2018), Customer value co-creation and new service evaluation: the moderating role of outcome quality. *International Journal of Contemporary Hospitality Management*, 30(4), 2020-2036. <https://doi.org/10.1108/IJCHM-08-2016-0467>

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THE APPEARANCE OF SUSTAINABILITY IN COSMETICS COMPANIES (AS EXAMPLES OF UNILEVER AND L'ORÉAL), ESPECIALLY ECO-CONTROL AS A SUB-SYSTEM

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Abstract

The aim of the research is to draw attention to the global phenomenon of pollution. The environmentally conscious behavior of manufacturers and consumers helps a lot in improving the state of the earth and preserving sustainability by thinking about the health of future generations. Good examples of this are the Unilever company's and the L'Oréal Group's sustainability plan. Environmental and eco-control play a key role in quantifying sustainability. Eco-conscious cosmetic factories are increasingly using environmental and eco-control in their activities. They are striving for sustainable development in the international market with examples of smaller cosmetics companies, with natural and organic materials, work processes and technologies for sustainable development. Consumers are striving to live healthier and more environmentally conscious, so they are increasingly choosing natural cosmetics.

Key words: cosmetics market, eco-controlling, environmental pollution, L'Oréal, Unilever

JEL Classification: M11, M31, M40

Introduction

Pollution is a global problem that affects everyone and everything. A global problem that extends to the Earth as a whole, and can threaten the future of mankind with a series of disasters. These problems can be prevented by environmentally conscious behavior. (Buzas et al, 2004)

Environmental awareness can be interpreted at several levels: global level, national / governmental level, organizational / corporate / civil sphere level, and consumer / individual / individual level. The environmental consciousness, the environmentally conscious behavior determines the responsible behavior of the individual in solving the tasks related to the protection of the environment and the preservation of the natural values. (Kerényi, 2003)

So we are all responsible for protecting our environment, so we need to think about the long-term consequences of our current consumption behavior for future generations. Responsible individual behavior can be achieved by developing mindset, environmentally conscious, responsible for the state of the environment, pre-emptive thinking, or minimising potential contamination. (Buzas et al, 2004) *„Promotion of green purchasing is one of the ways to minimise the environmental impact of products and achieve sustainability. The research on green marketing and green purchase behaviour has recently become a subject of study. This review of 80 papers published from 2011 to 2017 on green purchase behaviour revealed that most of the studies were conducted during the last three years. Moreover, the review showed that authors obtained different results of the analysis of the green products in general (including all green products) purchase behaviour. Thus, we suggested that the future researchers consider categories to which particular green products could be attributed, since different factors influence the purchase of separate products differently.“* In case of personal care products it is a remarkable influence the health consciousness as the main determinant with brand and quality variables, in regard to the color and styling cosmetics products. (Liobikienė & Bernatoniene, 2017, p. 109)

Human activity uses the long-term resources of nature at a fast pace, which makes the world ecologically overloaded, resources are gradually exhausted, and traditional economic growth becomes self-destructive. Producers and consumers leave a growing ecological footprint on their wasteful, unsustainable consumer behavior and waste disposal.

Thus, as a social being, man, through consumption, produces waste, pollutants with direct environmental damage to the built environment, to the wildlife, to the inanimate natural environment, by which the existence of man as a biological being is endangered. Unfortunately, this is a straightforward way to create an unhealthy life and a vicious circle, as we have water, air, food, etc. from this unhealthy environment. consumption. This process can only be stopped by conscious environmental management, where environmental public thinking, environmental education and education play an important role. Responsible environmental management can be achieved through the use of environmental management tools: environmentally friendly technologies and environmentally friendly waste management through environmental planning (eg. setting desirable environmental parameters and introducing measures to achieve them), improving the state of the already damaged environment. (Gadó, 2000) *„In many industrial processes, large quantities of volatile and flammable organic solvents are used in various reaction systems and separation steps define a major part of the environmental and economic performance of a process. Accordingly, a growing area of research in the development of green technologies is devoted to designing new, environmentally-friendly, and tunable solvents the use of which would meet both technological and economical demands.“* The most proposed green solvents, including supercritical and subcritical fluids (e.g. CO₂ and water) and natural deep eutectic solvents, with a special emphasis on green extraction of plant biologically active compounds are very important. (Bubalo et al, 2018, p. 52)

Ecology is a footprint of the nature of the population in a given area, taking into account the resources used and the production of waste by setting it in units of land. (Wackernagel & Rees, 2001)

It is necessary to set out to leave as little ecological footprint as possible. By choosing eco-friendly, green and green consumer goods, we can get closer to a healthy lifestyle, minimise the environmental impact of packaging recycling, selective waste management.

The universality of the environment and its system-based approach, which treats the economy, the society and the factors influencing the state of the environment as an unified whole are formulated in the principle of sustainable development. The principle of sustainable development seeks to minimise the risk to life on earth. The most commonly used definition is as follows: “ *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*” (United Nations Brundland Commission, 1987, p. 37) The ecological (environmental) balance is therefore overshadowed by the wasteful consumption of the consumer society, which has the following main characteristics: poor quality, ‘crowd booms’ for very short usage, ever-expanding range of disposable products, high energy machines, material-intensive production and technologies operation. This is supported by prestige consumption, which means that we frequently change our products due to advertising, and for many products the packaging is much more expensive than the goods in it. Empty packaging material is wasted in days. One of the main causes of the ecological global crisis is the current form of growth to the farmer. The solution can be a harmonious, long-term sustainable development. Creating this requires profound social and economic changes, including the transformation of consumer behavior, the loosening of technological constraints, ie the development of environmentally conscious consumption. (Wackernagel & Rees, 2001)

Material and Methods

Regarding methodology expository, descriptive and explortory secondary research was conducted in the cosmetic markets based on the literature used.

I chose secondary literature research as a method. At the moment, I thought it was important to present, through exploratory and descriptive research, the prominent role of health and environmental awareness in product manufacturing and consumer decision-making. Presently, environmental and health awareness are important trends that have a positive impact on all stages of the supply chain, creating and distributing a wider range of cosmetic products to consumers. Conscious manufacturers are increasingly choosing to make cosmetics that have a positive impact on the environment and health. Good examples of this are the Unilever and L’Oréal case studies presented below. Controlling is also developing, and eco-controlling has become a very important sector, which also aims to protect the environment and take sustainability into account.

„Sampling and procedure

The participants for this study were acquired out of a convenience sampling. The research was conducted using an online questionnaire constructed in Qualtrics and distributed on Facebook through various people and in various groups. The questionnaire was filled out anonymously and participation was free. No incentive was offered. The online questionnaire was opened by 453 people and completed by 49,9% of participants (226 participants).

The average age of participants is 24,7 years old with a standard deviation of 8,7. The youngest participant was 13 years old and the oldest was 73 years old. Of the 226 participants, 152 were women (67,3%) and 74 were men (32,7%). Regarding nationality, 92,9% of participants are Belgian, 5,3% of participants are Dutch and 1,8% chose the option ‘other’ when asked what their nationality was.

Design

The goal of this study is to compare the levels of greenwashing perceived by consumers when companies, brand or product make green claims. Therefore, the idea is to present consumers with green claims made by different companies, brands and products. A 3x3 experimental design (3 between-subjects and 3 within-subjects) was used with company-level, brand-level and product-level as independent variables, 'skepticism' as the dependent variable and 'liking of ad' as the control variable." (Daels, 2017, p. 25)

Results and Debate

1. The Role of Natural Organic Cosmetics in Sustainability

Cosmetic products and procedures can produce adverse effects on the ocular surface, ranging from mild discomfort to vision-threatening conditions. Complications of skin and eye products can be related to allergy or toxicity, often attributable to perfumes. Complications of blepharoplasty may be associated with overcorrection, scarring, or uneven contour of the lid margins, conditions that can cause significant ocular surface disease until they are corrected. Ocular surface effects of botulinum toxin injection include dry eye syndromes and also epiphora. More serious complications occur (rarely) and are dose-and location-related. Adverse effects of micropigmentation procedures involve pathological processes or, simply, poor cosmetic results. In certain youth cultures, special-effect contact lenses and even decorative conjunctival implants have gained popularity, presenting a wide variety of dangers, often attributable to poor education about care and hygiene (Coroneo, Rosenberg, & Cheung, 2006, p. 94) Natural cosmetics have become a major trend in recent years. Many celebs and stars use German cosmetics such as Weleda and Wala. There is a growing awareness that man is responsible for the world in which one lives, and an increasing concern for your own health. Research in 2006 found that the proportion of consumers who had tried organic beauty, cosmetic and personal hygiene products did not exceed 10%, but over 50% said they would consider buying in the future. *"More and more consumers concerned about what they put into their bodies will in the future broaden that concern to encompass what they put on their skin, then what they wear (their 'second skin') and then the products they use in their homes ('third skin')." (Wright & McCrea, 2007, p. 50)* It is important to appreciate the delicate balance of the natural world and to strive to maintain this harmony by using environmentally friendly cosmetic products that benefit everyone and cause minimum damage to environment. Concern for physical appearance must be balanced with finding conscientious means in which to care for people's skin and health in general. Natural cosmetics should offer wholesome personal care in the truest sense. An evolving awareness of holistic health have revolutionised the cosmetic market. *"The choice of products responding to the trend towards natural products is immense."* (Wright & McCrea, 2007, p. 225)

2. An International Example: Unilever and Global Sustainability

„As green marketing becomes an essential tool for sustainable business strategy, companies are adopting green marketing practices to achieve better business performance. However, no research has yet operationalized all the organizational facets that are necessary to become a green marketing oriented company.” Highlights of green marketing: strategic green marketing orientation, tactical green marketing orientation and internal green marketing orientation. *„The scale shows internal consistency, reliability, construct validity and nomological validity”* (Papadas, Avlonitis, & Carrigan, 2017, p. 236)

2010 saw Unilever overtly announce its plans for sustainability. Unilever has organised its plans to deal with water, sourcing raw materials, waste, greenhouse gases (GHG), smallholder farmers and distributors in developing countries. Most aspects of the plan have time-bound targets for 2020. The overall plan centres on three main objectives intending to:

- halve the environmental footprint of its products by decoupling growth from environmental impact;
- source 100 percent of its agricultural raw materials sustainably and enhance the livelihood of thousands of people in the supply chain;
- help 1 billion people to improve their health and wellbeing. (Emery, 2012)

Unilever's Sustainable Living Plan had a truly global launch to match its sustainable initiative. Unilever has plans to achieve other objectives by or before 2020 including:

- changing the hygiene habits of 1 billion people in Latin America, Africa, Asia so that they wash their hands with Lifebuoy soap at key times during the day - helping to reduce diarrhoeal disease (the world's second biggest cause of infant mortality);
- making safe drinking water available to half a billion people by extending sales of its low-cost in-home water purifier, Pureit, from India to other countries;
- sourcing 100 percent of its agricultural raw materials sustainably including, by 2015, 100 percent sustainable palm oil;
- improving livelihoods in developing countries by working with Rainforest Alliance, Oxfam and others to link over 500,000 smallholder farmers and small-scale distributors into its supply chain. (Emery, 2012)

This is a holistic plan of action inclusive partnerships with governments, suppliers, NGOs and other stakeholders. The plan takes a sweeping look at all of Unilever's product categories.

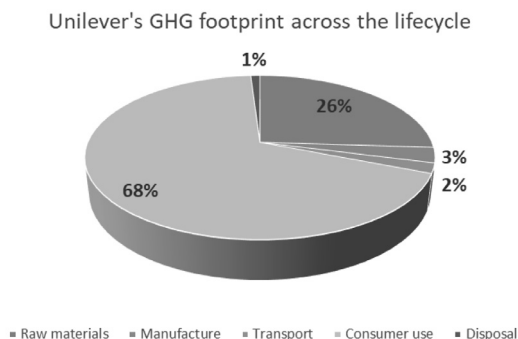
Shown below (Table 1-2, Figure 1-2) the GHG and the waste footprint.

Table 1 An example of Unilever's GHG footprint across the lifecycle

Element of lifecycle	Percentage
Raw materials	26%
Manufacture	3%
Transport	2%
Consumer use	68%
Disposal	1%

Source: Unilever Living Plan, p. 12 in Emery 2012, p. 301 based on my own editing

Figure 1 An example of Unilever's GHG footprint across the lifecycle



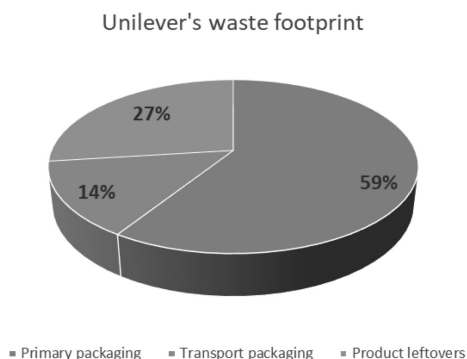
Source: Unilever Living Plan, p. 12 in Emery 2012, p. 301 based on my own editing

Table 2 Unilever's waste footprint

Type of waste	Percentage
Primary packaging	59%
Transport packaging	14%
Product leftovers	27%
Recycled/recovered materials	Minus X%

Source: Unilever Living Plan, p. 16 in Emery 2012, p. 301 based on my own editing

Figure 2 Unilever's waste footprint



Source: Unilever Living Plan, p. 16 in Emery 2012, p. 301 based on my own editing

Primary packaging (59%) + Transport packaging (14%) + Product leftovers (27%) – Recycled/recovered materials (X%) = EQUALS UNILEVER'S PACKAGING FOOTPRINT

As can be seen in Table 3, Figure 3, certain categories, such as soaps, detergents, etc., have the highest footprint. Unilever discovered that food packaging and shower gel bottles were the biggest contributors to its waste footprint. (Emery, 2012) „The container, also known as *primary package* or *inner package*, could be defined as the packaging designed to come into direct contact with the cosmetic product.“ Primary packaging is of paramount importance. There are three widely used cosmetic products, i.e. shampoo, shower gel and emollient cream. „The three products were contained in a tube with flip top cap and in a bottle with a pump. The study was conducted on 221 French adults: 108 women and 113 men. Results showed that the consumption of each cosmetic product was slightly higher when the product was packaged in tube with a flip top cap than in bottle with a pump. The difference of consumption could vary from 5% to 23% when calculated with mean values. This information could be interesting for safety evaluators, safety agencies and commercial services of cosmetic manufacturers.“ (Gomez-Berrada et al, 2017, p. 230)

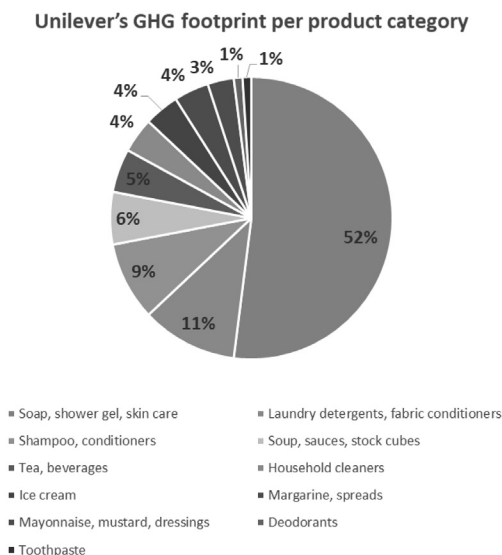
Table 3 Unilever's GHG footprint per product category

Product types	Percentage
Soap, shower gel, skin care	52%
Laundry detergents, fabric conditioners	11%
Shampoo, conditioners	9%
Soup, sauces, stock cubes	6%
Tea, beverages	5%

Household cleaners	4%
Ice cream	4%
Margarine, spreads	4%
Mayonnaise, mustard, dressings	3%
Deodorants	1%
Toothpaste	1%

Source: Unilever Sustainable Living Plan in Emery 2012, p. 302 based on my own editing

Figure 3 Unilever's GHG footprint per product category



Source: Unilever Sustainable Living Plan in Emery 2012, p. 302 based on my own editing

„The sustainably plan recognised that waste reduction would have to occur in all product categories in order to meet waste reduction target, through a combination of reducing, reusing, recycling and eliminating packaging materials.“ (Emery, 2012, p. 301)

„Unilever is setting in motion a ten-year sustainability strategy which, by its nature, has a long-term return on investment, which is likely to be incompatible with the investors seeking short-term returns for their financial support.“ (Emery, 2012, p. 302)

3. Innovating to reduce the environmental footprint, The L'Oréal example

For many years, The L'Oréal Group has been committed to an eco-responsible approach with regard to the impacts of its activities, aiming at excellence in environmental performances. Clear progress was achieved in 2011, in reducing the environmental footprint focusing upon two strategic areas: the efficiency of resource use and technological innovative projects. 2005-2015, as part of its ten-year environmental strategy, the general management of L'Oréal assigned a precise target to its plants and distribution centers, worldwide: reducing by 50% focusing on the following environmental targets:

- Greenhouse gas emissions (in absolute value);
- Waste production per finished product unit;
- Water consumption per finished product unit.

The aim is to reach a billion new consumers in the coming years. (Sahota, 2014)

The group has increased the proportion of plant-based ingredients its portfolio. 55% of registered new ingredients were of vegetal origin in 2011, compared to about 40% in 2010. The amount of ingredients the same year following the rules of green chemistry reached 45% compared to 26% in 2010. L'Oréal strives to develop ingredients of the lowest environmental impact together with the best safety profile for consumers. Five main issues:

- Consumer and employee health
- Fair trade
- Respect of human rights
- Protecting biodiversity
- Environmental protection. (Sahota, 2014)

„Respecting the fundamental principles of green chemistry has become crucial in developing new ingredients.“ (Sahota, 2014, p. 33)

The group used approximately 40% (in volume) of ingredients from renewable vegetal-based ingredients in its finished products in 2010. In 2011 the L'Oréal launched the 97% biodegradable Ultra Doux Almond and Lotus Flower shampoo and conditioner, and the 94% biodegradable Fructis Pure Brilliance shampoo and conditioner. Many cosmetics have been eco-designed, especially rinse-off products. They include The Body Shop Rainforest shampoos and conditioners, Dop Nature shampoos and conditioners, and Biotherm „*Ecume de douche*“ shower gel. (Sahota, 2014)

Since 2007 the group has been committed to a strict policy on using sustainable materials for its paper and cardboard packaging. The Garnier brand for several years has been involved in an eco-design initiative for its products and packaging consisting of successive stages. *„The iconic 50 ml skin care jar initially used 40% recycled glass, reducing the energy consumed to produce the jars.“* (Sahota, 2014, p. 34)

In 2011 Garniers has a lighter plastic design which is even more attractive, whilst reducing the packaging impact on the environment by 30%. *„The Biotherm brand saves several tonnes of packaging by using the eco-design approach. In 2011, 80% of the 50 ml glass jars used for skin care cream contained recycled glass (up to 40%). All (100%) of the cardboard packaging was certified (70% FSC and 30% PEFC, with a target of 100% FSC.)“* /FSC means Forest Stewardship Council, PEFC: Programme for the Endorsement of Forest Certification/ *„The elimination of instruction leaflets, now printed on the inside of the box, saved 24 tonnes of paper in 2011 (the expected saving is 30 tonnes in 2012). The*

plastic PE bottles were also revamped: a 6 g reduction in the 400 ml bottle, from 40 to 34 g, and a 2,5 g reduction for the 200 ml bottle, from 2,5 to 22,5 g. Combined, these reductions have resulted in 10 tonnes of plastic saving in 2011, and an expected saving of 26 tonnes in 2012. Biotherm, a community spirit brand, encourages consumers to recycle by using twist-off pumps; it also provides helpful information on the packaging.” (Sahota, 2014, p. 35)

Since 2005 the group has been increasing the use of renewable vegetal-based ingredients in its products. 55% of new ingredients registered were of plant origin in 2011, compared to 40% in 2010.

Since 2007 L’Oréal has been a member of the Roundtable on Sustainable Palm Oil; since 2010, it has sourced 100% of its palm oil from Certified Sustainable Palm Oil sources. (Sahota, 2014)

„The ingredients portfolio has also been extended to include new organic materials.” Around 500 ingredients are currently in line with Ecocert organic standards in the group portfolio. „The activity of the L’Oréal laboratory dedicated to natural and organic cosmetics is supported by an experimental farm and botanic garden located in the Vercors region of France. These facilities favor the development of products in line with organic farming, enabling more than 350 plant species to be studied.” (Sahota, 2014, p. 37)

Shea was in the top 10 list of the group plant-based ingredients in 2012. „From the very first year, more than 50% of group purchases originated from the „Solidarity Sourcing” program. In total, 13 000 women should directly benefit from the L’Oréal „Solidarity Sourcing” program. By 2013, 100% of procurements will be socially responsible.” (Sahota, 2014, p. 38)

L’Oréal exempt from European regulations on carbon emission quotas. Greenhouse gas emissions have been reduced by 29,8%, water consumption per finished product decreased by 22.6% between 2005 and 2011. In 2011, in line with the goals set of reducing waste per finished product by 50% (2005-2015). (Sahota, 2014)

„At present, 95,7% of the waste is re-used, recycled, or recovered for the production of energy.” (Sahota, 2014, p. 39)

„At present, 88% of L’Oréal’s plants are ISO 9001 certified (2000 version) or possess FDA quality certification.” (Sahota, 2014, p. 39)

The group’s logistics network moves over 5,78 billion products a year from factories, to distribution centers, to customers all over the world. Road represents 58% of the mode of transport used by the group. (Sahota, 2014)

In 2005, L’Oréal committed itself to a 50% reduction in CO2 emissions, waste production and water consumption by 2015. These have already reduced by 29,8, 24,2 and 22,6%. (Sahota, 2014)

4. Unilever and L’Oréal as green companies based on consumer branding examples

„Pretest.

In order to be sure that none of those stimuli already entailed a perception of greenness in consumers, a pre-test was carried out. In the pre-test 15 people answered the following questions about every subject” (Unilever, L’Oréal Group, Dove, Garnier, the shampoo and the hair coloring):

Do you know [company/brand/product]?

If people answered yes: With which three words would you describe [company/brand/product]? (ex. friendly, mean, big)” (Daels, 2017, p. 26)

Therefore, companies not carrying toiletry products were not considered and it became clear that the best choices were Unilever and L’Oréal Group. (Daels, 2017)

„In the questionnaire, these images were used in every condition; each with a manipulation on the company-level, brand-level and product-level according to the condition. The manipulation consisted of a green logo added to the stimuli. The green logos were designed for this study and were made specific to the condition they were used in.

On the company level the logo reads “GREEN COMPANY”, on the brand level the logo reads “GREEN BRAND” and on the product level the logo reads “GREEN PRODUCT”.

„We also conducted analyses in the three separate ‘house of brands’ companies, comparing the different architectural levels within each corporation.” (Daels, 2017, p. 29) This means we compared the skepticism scores between between Unilever, Dove and shampoo; and between L’Oréal Group, Garnier and hair coloring. (Daels, 2017)

„Data-analyses on the ‘house of brands’: Unilever, Dove and shampoo.

We started by calculating the mean score for each item within the Unilever corporation (item 1 to 4 on company, brand and product level) and respectively named them ‘scept_UN1’, ‘scept_UN2’, ‘scept_UN3’ and ‘scept_UN4’.

Then, we calculated the reliability of the skepticism scale. The Cronbach’s alpha is 0,81, therefore we can conclude that the skepticism scale is still internally consistent.

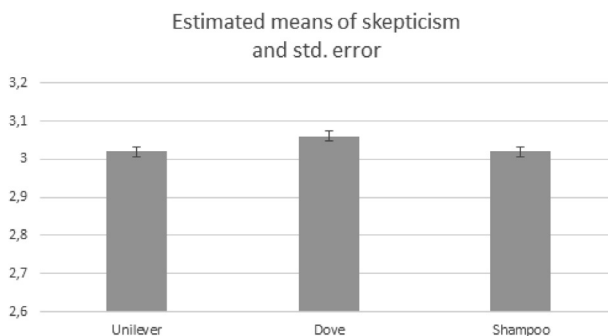
A one-way between subjects analysis of variance (ANOVA) was used to compare the effect of brand architecture level on skepticism towards a green claim. There was a non-significant effect of the brand architecture level, $F(2,223)=0,046$, $p=0,955$.

A post-hoc test (using Scheffe and Bonferroni) also confirmed that differences between conditions were not significant with all p-values $> 0,05$.

A simple linear regression was also calculated to predict skepticism based on brand architectural level. The linear regression was also not significant ($F(1,224)=0,00$, $p=0,998$), with an R^2 of 0,000).

Although results were not significant, the skepticism score in the brand condition is the highest with a score of 3,06 and a standard deviation of 0,78, the skepticism scores in the product and the company condition were equal with a score of 3,02 and a standard deviations of respectively 0,78 and 0,74.” (Daels, 2017, pp. 35-36)

Figure 4 Please note. scores are inverse to ecological value



Source: Research of Daels, 2017, p. 36

„Control:

A univariate analysis of variance was conducted using skepticism as the dependent variable, brand architecture level as the fixed factor and ‘La’ as the covariate. Results indicated a significant effect of ‘La’ on skepticism, $F(1,222)=51,94$, $p < 0,000$.

A Pearson correlation was also computed to assess the relationship between ‘Liking of Ad’ and skepticism. Based on the results, ‘Liking of the ad’ is strongly related to skepticism $r=-0,43$, $p<0,00$.

Data-analyses on the ‘house of brands’: L’Oréal Group, Garnier, hair coloring.

We started by calculating the mean score for each item within the L’Oréal Group corporation (item 1 to 4 on company, brand and product level) and respectively named them ‘scept_LO1’, ‘scept_LO2’, ‘scept_LO3’ and ‘scept_LO4’.

Then, we calculated the reliability of the skepticism scale. The Cronbach’s alpha is 0,83, therefore we can conclude that the skepticism scale is still internally consistent. (Daels, 2017, p. 36)

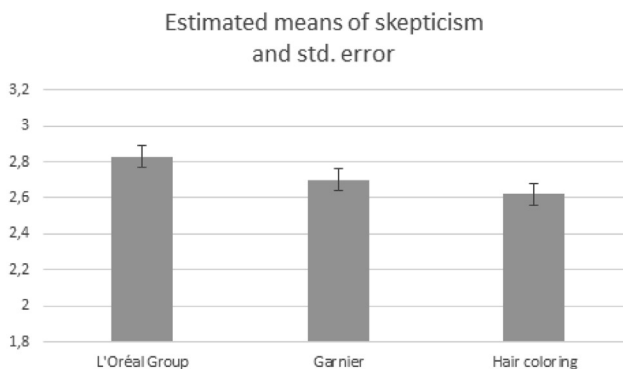
A one-way between subjects analysis of variance (ANOVA) was used to compare the effect of brand architecture level on skepticism towards a green claim. There was a non-significant effect of the brand architecture level, $F(2,223)=1,36$, $p=0,258$.”

A post-hoc test (using Scheffe and Bonferroni) also confirmed that differences between conditions were not significant with all p-values $> 0,05$.

A simple linear regression was also calculated to predict skepticism based on brand architectural level. The linear regression was also not significant ($F(1,224)=2,68$, $p=0,103$), with an R^2 of 0,012).

Although results were not significant, the skepticism score in the company condition is the highest with a score of 2,83 and a standard deviation of 0,73, the skepticism score in the brand condition is the second highest with a score of 2,70 and a standard deviation of 0,80 and the skepticism score in the product condition is the lowest with a score of 2,62 and a standard deviation of 0,78.” (Daels, 2017, p. 37)

Figure 5 Please note. scores are inverse to ecological value



Source: Research of Daels, 2017, p. 36

„Control:

A univariate analysis of variance was conducted using skepticism as the dependent variable, brand architecture level as the fixed factor and 'La' as the covariate. Results indicated a significant effect of 'La' on skepticism, $F(1,222)=46,35$ $p < 0,000$.

A Pearson correlation was also computed to assess the relationship between 'Liking of Ad' and skepticism. Based on the results, 'Liking of the ad' is strongly related to skepticism $r=-0,43$, $p<0,00$. (Daels, 2017, p. 37)

„H1: The level of skepticism towards environmental claims will be higher when made on the product-level than on the brand-level.

The one-way between subjects analysis of variance (ANOVA) of the aggregation of all stimuli was not significant. Therefore, we conclude that there is no significant difference in skepticism levels between the company, brand or product-level.

Although the differences were not significant in the analysis of the aggregation of all stimuli, the skepticism score was slightly higher on the brand-level than on the product-level. In ecological terms, this means that the skepticism level was slightly higher on the product-level than on the brand-level (remember that scores are inverse to the ecological value) which is in line with the expectation." (Daels, 2017, p. 38) This trend was also shown when the analysis was made within the Unilever 'house of brands' and the L'Oréal Group 'house of brands'. „A one-way between subjects analysis of variance (ANOVA) was also conducted within each 'house of brands'. Likewise, the results were not significant, however they were in trend with the hypothesis.

In conclusion, hypothesis 1 was not supported." (Daels, 2017, p. 38)

„H2: The level of skepticism towards environmental claims will be higher when made on the company-level than on the product level.

As said above, the one-way between subjects analysis of variance (ANOVA) of the aggregation of all stimuli was not significant. Thus, we conclude that there is no significant difference in skepticism levels between the company, brand or product level." (Daels, 2017, p. 38)

„Despite the differences not being significant in the analysis of the aggregation of all stimuli, the skepticism score was slightly higher on the company-level than on the product-level. In ecological terms this means that the skepticism level was lower on the company-level than on the product-level." (Daels, 2017, p. 38) This trend was also shown when the analysis was made within the L'Oréal Group 'house of brands'. „In the Unilever 'house of brands' the skepticism scores were equal to the second decimal between company- and product-level. A one-way between subjects analysis of variance (ANOVA) was also conducted within each 'house of brands'. Likewise, the results were not significant and the results were not in trend with the hypothesis.

In conclusion, hypothesis 2 was not supported." (Daels, 2017, p. 38)

„H3: The level of skepticism towards environmental claims will be higher when made on the company-level than on the brand-level.

Again, the one-way between subjects analysis of variance (ANOVA) of the aggregation of all stimuli was not significant. Thus, we conclude that there is no significant difference in skepticism levels between the company, brand or product level.

Even though the differences were not significant in the analysis of the aggregation of all stimuli, the skepticism score was slightly higher on the company-level than on the brand-level. In ecological terms, this means that the skepticism level was lower on company-level than on brand-level. This was also the case when the analysis was made within the L'Oréal Group 'house of brands'." (Daels, 2017, pp. 38-39) In the Unilever 'house of brands' the skepticism scores were higher on the brand-level than on the company-level. „These results are also not in trend with the hypothesis.

In conclusion, hypothesis 3 was not supported." (Daels, 2017, p. 39)

5. The appearance of eco-control in cosmetic companies

The most important objective of environmental accounting is to give a realistic picture of the financial situation and the impact of environmental activities. In ecological accounting, the physical units can show the environmental impact of a company. Environmental Accounting focuses on the impact of environmental protection on the financial situation of a cosmetic company. (Koontz, O'Donnell, & Weihrich, 1984), (Fertetics, 2010) At the enterprise level, environmental accounting is displayed as:

Table 4 Subsystems of environmental accounting

	Financial effects induced by environmental protection		Environmental impacts of the economic activity of the cosmetics company	
	Internal	External	Internal	External
Register				
Analysis	Management Environmental Accounting (Environmental Controlling)		Internal ecological accounting	
Reports		Environmental financial accounting		External ecological accounting

Source: Csutora & Kerekes , 2004 p. 76 based on my own editing

The costs and revenues of environmental accounting can be summarized as follows:

Environmental costs

1. Waste and Emission Treatment

- 1.1. Depreciation of equipment (eg sewage treatment plant)
- 1.2. Operating and maintenance costs: materials and services
- 1.3. Staff costs
- 1.4. Fees, taxes
- 1.5. Penalty and penalty

- 1.6. Environmental liability insurance
- 1.7. Provision for remediation and restoration
- 2. Cost of preventive environmental protection
 - 2.1. Cost of environmental services
 - 2.2. Personal costs
 - 2.3. Research and development
 - 2.4. Plus spending due to cleaner technologies
 - 2.5. Other environmental costs
- 3. Material costs of emissions not included in the product
 - 3.1. Commodity
 - 3.2. Wrapping
 - 3.3. Additives
 - 3.4. Materials used during operation
 - 3.5. Energy
 - 3.6. Water
- 4. Costs of processing non-product emissions

Environmental income

- 1. Subsidies
- 2. Other revenue

Category 1 includes costs related to waste and harmful emissions and the treatment of existing pollution. Cosmetics companies mostly include these in their environmental cost statements.

Category 2 includes pre-emptive (preventive) environmental costs. Their aim is to prevent or reduce future pollution.

Category 3 is the most important for cosmetics companies, but most of all it is in the shadow of oblivion in the absence of a high quality environmental controlling system.

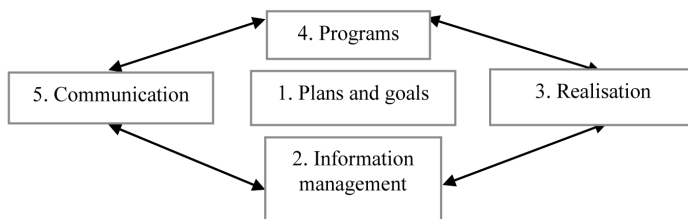
Category 4 includes direct wage and depreciation costs for the processing of waste materials as waste or emissions.

Environmental revenues are amounts received as subsidies, waste sold as secondary raw materials, etc. income.

Some of the listed costs can be recovered from the accounting system of the cosmetics company, others can be determined by calculations. After aggregating the costs, the costs must be shared between the factories and products that cause them. Cost centers are units that can be charged with distributed costs, that is, they can be a group of departments, processes, machines, activities. (Csutora & Kerekes, 2004)

Eco-Controlling defines the strategic tools that provide solutions to various environmental problems, their systematic management from data management to communication, as shown in Figure 6. The successful collaboration of the five modules determines the sustainable process required for the efficient operation of eco-control (and green accounting), which makes the company socially responsible and environmentally friendly. (Gábor & Zéman, 2012)

Figure 6 Eco-controlling concept



Source: Gábor & Zéman, 2012, p. 77 based on my own editing

Maintaining and continually improving the quality of the environment, eliminating adverse effects on the environment is a strategic constraint for cosmetics companies. By damaging our environment, we disrupt the ecological balance of nature, by which other elements of quality of life, such as, the quality of health is also damaged and depreciated.

Taking management of the environment by the management makes a significant contribution to improving the quality of life of the society, and with the initiative it can gain a significant competitive advantage by preserving and increasing its market position. In the framework of strategic planning, management should implement investment actions such as: professional storage of hazardous waste, which places a heavy burden on the organization in the first period. (Hanyecz, 2001), (Harangozó, 2008)

Ecocontrol, an environmental controller, is an integral part of a strategic management controlling system that assumes full environmental and quality assurance. Its tasks are with its special tools:

- supporting the preparation of long-term environmental actions, projects and action plans for strategy planning;
- performing the tasks of calculation and economic estimation of environmental impact studies;
- building and operating a long-term control system for the effectiveness of the measures;
- planning of annual operational tasks related to environmental protection, deviation of plan / fact;
- providing information to the management of the organization and the management of the environmental apparatus;
- integrating the eco-control sub-system into the organisation's strategic and operational controlling system.

The tools of the eco-control sub-system differ from the traditional controlling toolbox. The eco-control supporting strategic control mainly uses the financial and management accounting information systems and the calculation and estimation methods of eco-accounting to forecast and monitor the effects of environmental actions. The environmental costs of the cosmetic organization are also represented by quantifiable parameters in eco-control. These include tangible assets for environmental protection, as well as depreciation, environmental damage and warranty costs, and changes in the amount of hazardous waste. (Körmendi & Tóth, 2016)

The relationships between financial, managerial and eco-accounting are illustrated in Table 5.

Table 5 Classification of corporate accounting systems for cosmetics

	Financial Accounting	Management Accounting	Environmental Accounting
Objects	Accounting for changes in assets and resources required for farming and for accounting for the results of farming.	To satisfy the information needs of users within the economic unit (different levels of management), decision support	Collecting, processing and analyzing environmental data
Goals	Informing market players of the real property, financial and income situation of the company.	Helping Leaders: - continuous management work - developing strategic plans	Facilitating ecological optimization of decisions
Means	Preparation and analysis of financial accounting statements (balance sheet, income statement, cash flow)	Cost accounting, analysis, design	Cost-benefit analysis, ecological accounting, eco-balances, etc.
Research areas	It examines the cosmetic body as a homogenous unit.	Within a business unit, there are some aspects (organizational unit, activity, product, geographic area) that differentiate between components.	The organization and its environment
Methods	Standardized methods	Procedures that are tailored to the specificities of a given cosmetic company	A non-mature interdisciplinary approach

Source: Körmendi & Tóth, 2016, p. 166 based on my own editing

Conclusion

The sustainability of the environment is a common cause of mankind, for which both manufacturers and consumers, governments and nations are responsible. Global pollution can be combated globally with local co-operation to provide a viable, sustainable environment for the next generation. The Unilever company has already started this route with its long-term sustainability plan. Producing and delivering organic cosmetics to consumers is a very important task for both manufacturers and the entire supply chain, as the use of these products leads to a lower ecological footprint. It is important to preserve fresh water stocks and reduce greenhouse gases, etc. use of the environment, any damage to the environment.

So manufacturers of large international cosmetics, for example Unilever, have already started on the green road. They are striving for sustainable development in the international market with examples of smaller cosmetics companies, with natural and organic materials, work processes and technologies for sustainable

development. Consumer mindsets have also changed significantly: people are striving to live healthier and more environmentally conscious, so they are increasingly choosing natural cosmetics as opposed to many chemicals containing cosmetics.

In my study, I have shown that L'Oréal has also started on the path of sustainable development. Globally and locally – such a long-term policy brought – significant improvements in water, waste, energy savings, and so on without any compromise on the innovation, the safety, and the quality of the products that L'Oréal offers to consumers worldwide. „Global decisions, local and specific adaptations at all levels are key.” (Sahota, 2014, p. 46) They have led L'Oréal to make significant improvements in economic, environmental and social policies. (Sahota, 2014)

„In the last 30 years, countless studies have been done treating the many aspect and forms of green marketing, green positioning, greenwashing and their benefits and limitations. Greenwashing in itself is the practice of making false, unsubstantiated or misleading claims about the environmental benefits of a product, service, technology or company practice. The perception of greenwashing is about whether consumers believe communication about the environmental benefits of a product, service, technology or company practice or are skeptical about the truthfulness of such claims.

Considering that brands invest a lot in fostering trust, in developing a positive brand image and promoting the right brand associations, and can be thought of in the same way we describe humans, we believe people will have little difficulty thinking of brands in term of trustworthy, responsible or environmentally conscious.

It is possible that the use on an eco-label also influenced the perception of greenwashing (a.k.a skepticism) for the participants in the company condition, making it unreliable. Therefore, we believe further research should be conducted to better understand the perception of greenwashing in the highest levels of brand architecture (the parent company) and for different forms of brand architecture.” (Daels, 2017, pp. 40-43.)

Environmental and eco-control play a key role in “quantifying” sustainability, as environmental control alone is the foundation for economical environmental protection, but it can increase its quantitative and economic efficiency based on the environmental management system; environmental management tool. However, eco-control is an activity that involves simulating the effects of certain systems on ecosystems, measuring and evaluating effects, monitoring and processing information. (Boross et al, 2001)

Bibliography

1. Boross, Z., Bácsfalvi, M., Bordáné Rabózki, M., Csengő, C., Gyökér, I., Horváth, E., Véry, Z. (2001). Controlling a gyakorlatban. Budapest: Verlag Dashöfer.
2. Bubalo, M. C., Vidović, S., Redovniković, I. R., & Jokić, S. (May 2018). New perspective in extraction of plant biologically active compounds by green solvents. Food and Bioproducts Processing, 109, 52-73. Downloaded: 5 Februar 2018, source: <https://www.sciencedirect.com/science/article/pii/S0960308518300658>
3. Buzás, G., Fabula, L., Hazayné Ladányi, É., Hubai, J., Kerekes, S., Kobjakov, Z., Vass, N. (2004). A környezet-gazdaságtan alapjai. Budapest: Perfekt Gazdasági Tanácsadó, Oktató és Kiadó Részvénytársaság.

4. Coroneo, M., Rosenberg, M., & Cheung, L. (2 April 2006). Ocular Effects of Cosmetic Products and Procedures. *The Ocular Surface*, 4, 94-102. Downloaded: 5 Februar 2018., source: <https://www.sciencedirect.com/science/article/pii/S1542012412700319>
5. Csutora, M., & Kerekes, S. (2004). *A környezetbarát vállalatirányítás eszközei*. Budapest: KJK Kerszöv.
6. Daels, C. (2017). The influence of brand architecture on perceived greenwashing. Should you position your company, brand or product as environmentally friendly? Gent, Belgium: A dissertation on to Ghent University.
7. Emery, B. (2012). *Sustainable marketing*. Essex, UK: Pearson.
8. Fertetics, M. (2010). Benchmarking a fenntarthatóságért. *Magyar Minőség*, 19(1), 49-52. Downloaded: 25 April 2018, source: http://quality-mmt.hu/wp-content/uploads/2016/06/2010_01MM.pdf
9. Gábor, A., & Zéman, Z. (2012). Zöld gazdaság és versenyképesség a kontrolling eszközök támogatásával. *A falu*, 27(2), 75-79
10. Gadó, G. (Ed.) (2000). *A természet romlása - a romlás természete Magyarországon*. Budapest: Föld Napja Alapítvány.
11. Gomez-Berrada, M. P., Ficheux, A. S., Galonnier, M., Rolfo, J. E., Rielland, A., Guillou, S., Ferret, P. J. (1 November 2017). Influence of the container on the consumption of cosmetic products. *Food and Chemical Toxicology*, 109(1), 230-236. Downloaded: 5 May 2018, source: <https://www.sciencedirect.com/science/article/pii/S0278691517305161>
12. Hanyecz, L. (2001). Kontrolling a vállalat irányítási folyamataiban. *Marketing & Menedzsment*, 35 (5-6), 23-29
13. Harangozó, G. (2008). Környezeti kiválóság a termelő vállalatok szintjén. *Magyar Minőség*, 27(4), 5-21. Downloaded: 25 April 2018, source: http://quality-mmt.hu/wp-content/uploads/2016/06/2008_04mm.pdf
14. Kerényi, A. (2003). *Környezetten, természet és társadalom - globális szempontból*. Budapest: Mezőgazda Kiadó.
15. Koontz, H., O'Donnell, C., & Weihrich, H. (1984). *Management*. New York, USA: McGraw-Hill Inc.
16. Körmendi, L., & Tóth, A. (2016). *A kontrolling alapjai*. Budapest: SALDO Pénzügyi Tanácsadó és Informatikai Zrt.
17. Liobikienė, G., & Bernatoniene, J. (20 September 2017). Why determinants of green purchase cannot be treated equally? The case of green cosmetics: Literature review. *Journal of Cleaner Production*, 162, 109-120. Downloaded: 11 March 2019 source: <https://www.sciencedirect.com/science/article/pii/S0959652617311563>
18. Papadas, K.-K., Avlonitis, G., & Carrigan, M. (2017. November). Green marketing orientation: Conceptualization, scale development and validation. *Journal of Business Research*, 80, 236-246. Downloaded: 2 May 2018, source: <https://www.sciencedirect.com/science/article/pii/S0148296317301777>
19. Sahota, A. (Ed) (2014). *Sustainability: How the Cosmetics Industry is Greening Up*. London, UK: Wiley.
20. United Nations Brundtland Commission. (1987). *Report of the World Commission on Environment and Development, Our Common Future*. Oslo: United Nations. Downloaded: 25 March 2019, source: http://netzwerk-n.org/wp-content/uploads/2017/04/0_Brundtland_Report-1987-Our_Common_Future.pdf

21. Wackernagel, M., & Rees, W. (2001). Ökológiai lábnyomunk. Budapest: Föld Napja Alapítvány.
22. Wright, S., & McCrea, D. (Eds) (2007). The Handbook of Organic and Fair Trade Food Marketing. Oxford, UK: Blackwell Publishing.

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STRATEGIC MANAGEMENT PRACTICE AND MICRO-SMALL ENTERPRISES FINANCIAL PERFORMANCE IN IMO, SOUTH EAST NIGERIA

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Abstract

This study explored the influence of strategic planning on the financial performance of micro-small enterprises in Imo State, South East Nigeria. It specifically examined the effect of strategic management on business profitability, income and sustainability and also the challenges that micro small enterprises face in implementing strategic management. Structured questionnaires were distributed to business managers and also, company financial statements were also analysed. Data was analyzed using a linear regression approach and correlation analysis and findings showed that there is a positive significant relationship between strategic management and business profitability, revenue and sustainability. In addition, lack of knowledge on the promulgation and implementation of strategic management and plans are a major challenge hindering micro-small enterprises from implementing strategic management.

Keywords: *Strategic management, micro-small business, financial performance, entrepreneurship, business development.*

JEL Classification: M20, M21, O16

Introduction

Strategic planning can be described as an organization's process of defining its direction or strategy and making decisions on the allocation of resources in order to pursue this strategy. It extends also to control mechanisms that guide the implementation of strategy. It is also an organizations ability to involve different actors in the strategy process. Strategic planning is a process, thus it has inputs, outputs, activities and outcomes. This process, like all processes, has constraints. Strategic planning provides inputs for strategic thinking and this process guides the actual strategy formation (Kohtamaki, Tornikoski and Varamala, 2009). It involves the deployment of the internal resources of an organization and its strengths in order to utilize external opportunities and minimize internal and external threats. Furthermore, it helps business organization commit to given goals and promulgate

policies to achieve them. It presents consensus on key issues and presents strategic ways to address them.

Financial performance can be described as the degree to which the financial objectives of a business organization are accomplished. It is the measurement of the achievement of a business firms' policies and operations in financial terms. It serves as a veritable way of measuring how far an organization is achieving its financial goals and objectives. According to Song, Im, Bij and Song (2011) or Korauš et al. (2019), financial performance is measured over time and is measured with key parameters such as profitability and liquidity.

Strategic planning and financial planning are interrelated elements in business analysis. Financial planning is often used to describe expected financial performances of an organization. A strategic financial plan also lays down steps that need to be taken in order to achieve given financial performance benchmarks. Strategic planning and management have become increasingly important for small businesses especially in these times of economic turbulence and uncertainty. In addition, continuous competition amongst business firms and less available economic recourse have made it imperative that proper strategic planning and management measures be put in place and implemented in order for a small business to survive and thrive in the Nigeria economy. Strategic planning offers immense possibilities for micro-small and medium scale organizations, especially in developing economies. According to Rudd, Greenly, Beatson and Lings (2008), strategic planning could help organizations in breaking down financial performance benchmarks into smaller and achievable objectives, which helps the organization to align short-term activities towards the achievement of medium and long term objectives. Furthermore, strategic planning management helps small business organizations to remain focused on their long term targets, and these long term targets serve as a guide for setting short-term steps that are being taken by these small businesses.

Strategic management involves a set of stages which helps business firms to create, implement and control the achievement of long-term objectives. These steps include; strategic analysis, the formulation of strategy, strategy implementation and then evaluation or feedback. Strategic analysis involves the business firm laying out long term objectives and targets with specific timelines. This is the first stage in strategic planning and it involves the making of long term plans for the organization and is usually carried out by the top management cadre of the firm. The second stage, which is the formulation of strategy, involves the process of breaking down long term plans into specific steps which are aimed at ultimately meeting the big target. These steps usually have timelines attached to them, and is aimed at ensuring that the firm achieves its long-term target. The strategy implementation stage, which is the third stage, involves the actual execution of these actions and steps that have been outline in the second state. This stage is vital because it is the careful execution is required in order to achieve stated objectives. It involves the careful monitoring of everyday tasks in order to ensure that they move they organization towards achieving its broader objectives. The fourth stage, which evaluation or feedback stage involves the process of measuring achievements against targets in order so as to ensure that the organization is in the right track of achieving its targets. According to Parnell (2013), this aspect of strategic management receives relatively small attention on the part of most business managers. This is attributed to the fact that many managers are ill-equipped, inexperienced and incompetent in carrying out management and organizational analysis that is aimed at proper evaluation of company performance.

The Nigerian economy is private-sector driven, meaning that the private sector plays an indispensable role in the functioning of the economy. Private sector organizations provide employment, bring about capacity utilization and also attract foreign direct investment (FDI) to the economy. Micro-small and medium enterprises make up the most significant part of the private sector in terms of number of people employed and also contribution to GDP (Anyakoha, 2017). Thus MSE growth indirectly cascades into larger scale economic development.

Strategic planning in the Nigerian context is vital for MSEs in order to withstand the challenges associated with operating a business, meeting targets and achieving sustainability. According to Olanipekun (2014), due to changes in government policies and also international markets, MSEs need to have long term plans that can also enable them to adapt effectively to changes in the business environment. The study further mentioned that business organizations in Nigeria are becoming part of the global community and thus involved in complexities involved in decision making, thus it is imperative that strategic management is inculcated. The Nigerian economy is resource-driven, thus making it imperative that the economy will be sensitive to changes in commodity prices, especially crude oil, which is the main export commodity. MSEs in Nigeria are heavily dependent on their implementation strategy based on several techniques to analyze and formulate strategies such as SWOT analysis and Porter's competitive strategies (Okumus, 2003).

The importance of strategic planning in business development is limited territorially to developing economies in Africa alone. It is imperative to point out that strategic planning also entails building sustainable cooperative networks between business organizations in order to help build a robust regional industrial base, stimulate increased capacity utilization, which aggregates towards regional economic growth. In a related study, Mura, Haviernikova and Machova (2016) mentioned that changes in economic development of different countries are influenced by the different ways of doing business. The study further proposed a basic model for entrepreneurial network cooperation amongst small and medium scale business enterprises in Slovak republic between 2014 and 2015, with results showing that successful implementation of cooperative entrepreneurial networks within the country entails the formulation of strategy and its effective implementation must be done simultaneously. Furthermore, the launching of network cooperation and implementation of strategic plans will be beneficial for the small businesses as well as the economy as a whole. A developing economy like Nigeria can borrow a leaf from this as businesses, especially those in similar sectors within states can form strategic networks that are aimed at knowledge exchange and local capacity utilization.

Despite the contribution of MSEs to economic development in Nigeria, they are however characterized by inconsistent performance and high failure rate. Though some experts blame these on lack of financial and human resources, a lack of strategic management significantly contributes to these problems. Low level of longevity, sustainability also stagnation on the part of small businesses has been linked to lack of strategic management, and it is on the backdrop of this that this study is done with the aim of ascertaining the influence of strategic management on financial performance of MSEs.

Micro-small and medium scale enterprises (MSEs) constitute major economic bedrock in Nigeria. They contribute significantly to gross domestic product, tax revenue for the government and also help in capacity utilization as well as giving new and prospective entrepreneurs the opportunity to venture into entrepreneurship. Furthermore, according to Aremu and Oloodo (2015), MSEs help

in creating employment for the society, especially for fresh graduates, as they gain working experience from these organizations. It is therefore critical that these organizations do well financially in order for there to be economic balance in the country. However, in recent times, MSE's average financial performance in Imo State, Nigeria has witnessed a considerable slowdown due to various factors which include economic recession, exchange rate crisis, and also management challenges. The average financial performance of micro-small and medium scale businesses in Nigeria have been inconsistent over the years. Also, the survival rate of this class of business organizations is relatively low as only 53% of small businesses in Nigeria exist for more than 5 years (Central Bank of Nigeria, 2017). This low rate of survival has been attributed to harsh economic conditions, intense competition from bigger and foreign owned business firms in similar economic sectors and also internal factors within the business organization. According to Analoui and Karami (2003), these internal factors within the business organization are the biggest challenge many micro-small and medium scale enterprises face and these include lack of good management skills on the part of business owners and inadequate management of financial resources and bad business practices. Small businesses amount for 59% of employment and also more than 48% of the operations of big business organizations are outsourced to MSEs for the purpose of increasing efficiency and reducing costs. Small businesses in Nigeria also utilize local resources within the country, thus encouraging the use of local content in an import dependent economy like Nigeria. Strategic management has not been optimally adopted, especially amongst micro-small and medium scale enterprises in Nigeria in the achievement of long term targets. This has increased the challenges hampering small business organizations from meeting up with financial performance objectives, especially in the period of unfriendly economic climate. Furthermore, many business managers are unable to effectively lay out a proper strategic plan with time-bound steps that will help in achieving these targets. This has made it difficult for small businesses to keep focused on long term targets and implementing the optimal steps to achieve these targets. Furthermore, strategic management is needed in order for micro-small businesses to develop to the next level, as decisions pertaining expansion, use of loans for expansion and external funding needs have to be made.

According to Dvoulety and Orel (2019), in their study of entrepreneurial activity and its determinants in Africa using the Global Entrepreneurship Monitor (GEM), results showed that the overall rate of entrepreneurship Africa is higher than in Europe, on average of 31%. However, inspite of the findings of the study, African economies, especially Nigeria have not developed at target growth rates, and also, new businesses on the average have not achieved sustainability as new businesses on the average do not last more than 5 years (Anyakoha, 2018). It is on the backdrop of these that strategic management planning practice is being studied as a veritable solution towards improving the financial performance of micro-small and medium scale enterprises in Nigeria and also improving the sustainability of these enterprises.

Table 1 presents the average income and profitability figures for selected 300 MSE firms in Imo State, Nigeria.

Table 1 Average annual income and annual profit of 182 selected MSEs in Imo State

Year	Average annual income (Nigeria Naira)	% change in average annual income	Average annual profit (Nigeria Naira)	% change in average annual profit
2007	4,212,800.10	-	1,202,872.05	-
2008	9,213,141.30	125	2,401,212.65	100
2009	11,818,010.19	22	3,009,500.03	25.32
2010	12,212,947.21	3.38	4,521,201.45	50.24
2011	12,347,189.54	8.19	4,791,559.12	5.97
2012	10,818,315.89	-12.9	3,021,333.12	-36.94
2013	11,817,204.24	9.26	3,001,218.72	-6.6
2014	13,084,717.66	10.17	4,907,203.90	63.51
2015	12,303,401.22	-5.96	4,104,520.10	-16.36
2016	8,777,156.08	-28.6	2,890,245.21	-29.58
2017	6,222,809.49	-29.1	1,909,200.44	-33.94

Source: author survey data (2019)

The figures in table 1 show that the average annual turnover and profit of MSEs in the two states under study have not been growing consistently. There are also years in which there are significant reductions in earnings and profits. This can be attributed to external factors such as macroeconomic performance of Nigeria and also internal issues, such as a lack of proper medium to long term growth plan being in place. According to Amurle and Gakure (2013), business managers ought to have long term plans of growth and profitability and also short term implementation measures that will help them in achieving these targets.

Strategic management helps business organizations to anticipate future challenges as well as opportunities that the enterprise will face in future. Furthermore, it helps for increased innovation and creativity that will foster competitiveness as well as visibility for these organizations. The decision of making strategic plans is usually the responsibility of the top management echelon of every organization concerned. Top management is concerned with the formulation and implementation of strategy. In addition, due to the dynamic and ever changing nature of the business environment, it is imperative that plans and targets as well as implementation measures are continuously adjusted in order to keep abreast with changing times.

The implementation of strategic management in the Nigeria business environment is at a critically low level. In order to achieve sustainable profitability and growth, it is imperative that business firms in Nigeria take relevant steps need to be taken in order to make for proper strategic management. These include, having a detailed, well written and well planned strategic document, which could be a business plan. This document will contain important aspects of enterprise organization such as human resources, market analysis, marketing goals, target customer base, product development, innovation, production technology, financing, budgeting, time schedule and risk evaluation issues.

Strategic planning, which is a facet of strategic management would help MSEs in Nigeria to quickly and adequately react to economic policy changes, macro-economic changes within the country and also changes in the global economic system. Furthermore, strategic planning could also lead to improved performance as well as better management of resources. According to Beaver (2003), the ability to efficiently manage lean resources is essential for the growth of small scale businesses, as they have limited scope for external funding. The study further asserted that in order to optimally manage lean resourced, there is a need to have a detailed and elaborate framework of how and why resources will be allocated to different segments of the firm in order to achieve performance targets. Also, Chiloane-Tsoka and Boya (2014) mentioned that strategic planning serves as a performance driver in small businesses as it enhances economic performance and organizational innovation. The study further mentioned that the more there is strategic planning, the more new product development projects lead to better organizational performance.

Despite the numerous benefits that abound from the use of strategic management in running an organization, there is still significantly a low level of usage in business firms in Nigeria, especially amongst micro-small and medium scale enterprises in Imo State. This low level of usage is characterized by lack of sustainability of new businesses as most businesses do not survive beyond the first 5 years of commencement of operation. This scenario has been attributed to factors such as inability to formulate strategy document on the part of business leaders, inexperience in strategy formulation and also inability to break down long-term strategy into short term implementation steps and measures. This study is thus aimed at examining if the adoption and use of strategic management significantly and positively influences organizational financial performance and also the challenges that beset MSEs in implementing strategic management measures.

Materials and Methods

This research used a combination of primary and secondary data obtained from a sample of 200 MSEs that were selected using stratified random sampling in Imo State. This state was selected for the study due to the fact that it have the highest concentration of MSEs in the south east region of Nigeria. The organizations used for this study belonged to different sectors of the economy, including manufacturing, non-professional services, construction sector, telecommunications sector, oil and gas, fashion services and information communication technology (ICT). This was done in order to capture different sectors of the economy that MSEs in the area of study are engaged in. Furthermore, a sector spread was done in order to capture the challenges that beset the different productive sectors of the state's economy. A total of 200 structured questionnaires were distributed to the various organizations on their use of strategic management. One research assistant was employed to assist in the distribution and collection of questionnaires, as well as review of company financial statements. A total of 182 of these questionnaires were filled and returned, making a response rate of 91%. Furthermore, the financial statements of these organizations were obtained and analysed in order to compare the financial performance of the organizations who adopt strategic management and planning to those who do not make use of it. A linear regression model was used to ascertain the relationship between the use of strategic management and financial performance of MSEs. Data was analysed using Statistical Package for Social Science (SPSS) version 18 to run

regression analysis. Cronbach coefficient alpha was used to check internal consistency of scale. Furthermore, R-square tests was carried out to check how much of the variance in the dependent variable is explained by the model while F-tests was done in order to test hypothesis. The hypotheses propounded for this study are as follows:

- H1:** Strategic management has significant positive effect on MSE profitability
H2: Strategic management has significant positive effect on MSE revenue
H3: Strategic management has significant positive effect on MSE sustainability

Limitation of Study

This study is limited to micro-small and medium scale enterprises in only Imo state of Nigeria. According to the Central Bank of Nigeria (2015), Micro-small enterprises are business firms that have not more than 50 employees and which has an annual turnover of not more than N100,000,000 (\$285,714.29). The study did not go beyond this cadre of business organizations that are located in Imo State. Furthermore, the study addressed the context of strategic management and its effect on MSE financial performance. It did not consider other challenges faced by MSEs such as government policies, international market forces as well as infrastructural challenges. The findings of this study area also limited to micro-small enterprises located within Imo state. However, some of the findings could be applicable to large business organizations, as well as business organizations located in other geographical areas.

Results and Debate

- The findings are shown below in line with the specific objectives of the study.
- Effect of strategic management on business profitability of micro-small enterprises.
 - Effect of strategic management on business revenue of micro-small enterprises.
 - Effect of strategic management on business sustainability.
 - Challenges faced in formulating and implementing strategic management measures.

Table 1 Cronbach alpha

Area	Number of observations	Cronbach's α
Profitability	7	0.637
Revenue	9	0.721
Sustainability	6	0.744

Source: Survey data 2019

Table 2 presents the correlation between the strategic management and the different elements of MSE financial performance.

Table 2 MSE financial performance and strategic planning

Specific objective	Independent variable vs dependent variable	Correlation coefficient (r)
Strategic management and business profitability of MSEs	Use of strategic management and business profitability	0.518
Strategic management and business revenue	Use of strategic management and business revenue	0.632
Strategic management and business sustainability	Use of strategic management and business sustainability	0.557

Source: Survey data 2019

The linear regression model adopted for this study is shown below thus:

$$Sm = \beta_1 BP + \beta_2 BR + \beta_3 BS + \delta$$

Where Sm = Strategic management

BP = Business profitability

BR = Business revenue

BS = Business sustainability

In the above model, strategic management is the independent variable while business profitability, business revenue and business sustainability are the dependent variables. The result of the linear regression is shown in table 3.

Table 3 Effect of strategic management on business profitability, revenue and sustainability

Model	Estimate	Standard Error	t-value	P-value
Intercept	15.8857494	4.5584	3.16	0.00170
Business Profitability	3.5703316	0.907748	3.617	0.10553
Business Revenue	1.000679	0.024113	0.144	0.9446
Business Sustainability	0.085992	0.077419	1.623	0.214

Source: Survey data 2019

Table 4 Challenges in using strategic management in micro-small enterprises

	Specific Challenge	Frequency of respondents with challenge	Percentage
1	Low level of knowledge of strategic management	115	63.2
2	Insufficient partner buy-in to strategy	132	72.5
3	Resistance to change due to inflexible strategy	98	53.8
4	Insufficient management attention	102	56.0
5	Weak or inappropriate strategy	86	47.3
6	Inexperience in implementing strategic management	109	59.9
7	Lack of resources for strategy implementation	112	65.9
8	Ineffective communication	141	77.5
9	Lack of monitoring and evaluation	113	62.1

Source: Survey data 2019

Test of hypothesis

The result of the hypotheses tested for this study are shown below

Table 5 Result of hypotheses

Hypothesis	F	Sig
Strategic management significantly improves profitability	2.557	.001
Strategic management significantly improves business revenue	6.427	.001
Strategic Management significantly improves business sustainability	2.445	.001

Source: SPSS analysis

According to the figures shown in table 5, all the values at the Sig. Column were between 0.001 and 0.005. Hence the three hypotheses propounded for this study were accepted. It therefore means that strategic management has a significant and positive effect on business profitability, sustainability and revenue of MSEs in Imo state. This also means that the inculcating strategic management in managing MSEs will have a positive significant impact on its key financial performance indices.

The findings from this study show that the use of strategic management has a positive correlation with business profitability, revenue and sustainability. This is in line with the postulations of Derbaliev and Trpkova (2011) who mentioned that the adoption of strategic management and planning helps business firms to properly focus on activities that increase profitability because it clearly maps out the desired end-results to be achieved and the steps need to be taken in order to achieve

them. The strategic planning process involves “*planning backwards*” – which entails the having an end result in view and working towards achieving these results. In addition, strategic management also helps in cost reduction and this also helps in increased profitability. This helps MSEs to also reduce dependence on external funding for needed business expansion. It is also in line with the assertions of Aremu and Olodo (2015) who mentioned that the use of strategic management helps increase income of business organizations as operational activities are geared towards generating increased revenue for the business firms. Furthermore, strategic planning helps business managers to properly focus on operating activities as well as investment operations that maximize earnings for the business firms. The findings also show that adoption of strategic management helps in bringing about sustained growth in revenue and earnings. This is in line with the findings of Dyson, Meadows and Tapinos (2005) who mentioned that in order to bring about sustainable positive financial performance in business firms, it is imperative that firms adopt strategic management in order to maintain sustainable growth.

The findings from this study showed that ineffective communication poses the biggest challenge for effective implementation of strategic management. This is due to the fact that management needs to get employees of the firm to be in tune with the firm’s strategy as every business activity should be geared towards the strategic goals of the organization. According to Kohtamaki et. al. (2009), communication is a key ingredient for organization success as it helps keep everyone in tune with the goals and objectives of the firm. From the response of the respondents, another significant challenge to strategic management is insufficient partner buy-in to strategy. It is important that all stakeholders should be in agreement with strategy adopted by the management of the organization in order to achieve optimal success. Low level of knowledge about strategic management was also seen as a significant challenge in strategic management. This is in line with the findings of Parnell (2013) who mentioned that strategic management involves just propounding a single strategy without considering environmental factors, contingency plans and specific roles to be played by different stakeholders. This lack of knowledge thus makes it difficult for business managers to propound and implement effective strategic plans that will move their organizations forward. Furthermore, inadequate monitoring and evaluation also constitutes a significant difficulty in creating and implementing strategic management. In addition, lack of resources and resistance to change due to inflexibility of plans further constitute significant challenges to effective strategic management Nigeria micro small enterprises.

The findings of this study also showed that weak strategy constitutes a major challenge in the implementation strategic management for MSEs. This is due to fact that a strategy that does not adequately consider the business dynamics of the present day, environmental challenges as well as industry specific issues that the business has to contend with in order to achieve sustainability and profitability. In addition, robust strategy is necessary in order to properly include every facet of the business as well as every conceivable challenge that could be encountered by the business. A robust strategy is also dynamic as it makes room for adjustments due to the continually changing business environment.

Conclusion

This study highlighted the impact of strategic management on the financial performance of micro-small enterprises in Nigeria (profits and revenue) and the challenges that these business face in implementing strategic management. Results from the study show that implementation of strategic management has positive significant effect on the financial performance of micro small enterprises in Imo State of Nigeria. Furthermore, business managers expressed difficulties that they face in making use of strategic management in their business enterprises. These include lack of resources, low level of knowledge, inadequate monitoring and evaluation, insufficient management attention as well as inflexibility of strategy. This study has also created a need for further research whereby workable solutions could be proffered in order to enable managers of micro-small enterprises to inculcate strategic management in their business operations. It also presents a scenario that management schools should look into pertaining to training prospective and existing business managers on how to make and implement strategic plans for their businesses.

Bibliography

1. Amurle, G and Gakure, R. (2013). Strategic Planning Practices in ICT SMEs in Kenya: What Other SMEs Can Learn. *Prime Journal of Social Science*, 2(6), 336-349.
2. Analoui, F and Karami, A. (2003). *Strategic Management: In Small and Medium Enterprise*. London: Thomson Learning.
3. Anyakoha, C. (2018). Achieving Sustainable Development in Nigeria Via Innovative Education. The Role of Business Education. *Acta Oeconomica Universitatis Seyle*, 7(1), 7-20.
4. Arasa, R and K'Obonyo, P. (2012). The relationship between Strategic Planning and Firm Performance. *International Journal of Humanities and Social Science*, 29(2), 201-213.
5. Aremu, M. And Olodo, H. (2015). Impact of Strategic Management on the Performance of Small and Medium Scale Enterprises (SMEs) in Nigeria. *Journal of Sustainable Development in Africa*, 17(1), 101-114.
6. Beaver, G. (2003). Management and the Small Firm. *Strategic Change*, 12(2), 63-68.
7. Bounds, M.; Goldman, G and Thompson, C. (2012). The Status of Strategic Planning in Small and Medium Enterprises: Priority or Afterthought. *The Southern African Journal of Entrepreneurship and Small Business Management*. 5(1), 34-53.
8. Central Bank of Nigeria (2017). *Statistical Bulletin*. Lagos. Central Bank of Nigeria.
9. Central Bank of Nigeria (2016). *Statistical Bulletin*. Lagos. Central Bank of Nigeria.
10. Chiloane-Tsoka, E and Boya, K. (2014). An Exploration of Strategic Competitiveness of SMEs: A South African Perspective. *Problems and Perspectives in Management*, 12(4), 347-354.
11. Derbaliev, S and Trpkova, M. (2011). Strategic Planning in Transition Economies: Empirical Evidence from the Macedonia Context. *Business and Economic Horizons*, 4(1), 27-29.
12. Dyson, R.; Meadows, M and Tapinos, E (2005). The Impact of Performance Measurement in Strategic Planning. *International Journal of Productivity and Performance Management*, 54(5), 370-384.

13. Kohtamaki, M; Tornikosk E and Varamala, E. (2009). The Strategic Management Competence of Small and Medium Sized Growth Firms. *International Journal of Entrepreneurship and Small Business*, 7(1), 139-150.
14. Koraus, A., Gombár, M., Kelemen, P., Backa, S. (2019). Using quantitative methods to identify security and unusual business operations. *Entrepreneurship and Sustainability Issues* 6(3), 1101-1012.
15. Mura, L; Haviernikova, K and Machova, R (2017). Empirical Results of Entrepreneurs' Network: Case Study of Slovakia. *Serbian Journal of Management* 12 (1), 121-131.
16. Okumus F. (2003). A Framework to Implement Strategies in Organizations. *Management Decision Journal*, 41(9), 871-882.
17. Olanipekun, N. S. (2014). Strategy management and business success. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 3 - 6, 26-33.
18. Parnell, J (2013). Uncertainty, Generic Strategy, Strategy Clarity and Performance of Retail SMEs in Preu, Argentina and the United States. *Journal of Small Business Management* 51(2), 215-234.
19. Rudd, J.; Greenly, G.; Beatson, A and Lings, I. (2008). Strategic Planning and Performance: Extending the Debate. *Journal of Business Research*, 61(2), 99-108.
20. Sola, O. (2012). Strategic Management of Small and Medium Scale Enterprises' Demographic Profiles: A Factor Analytic View. *Business and Management Review*, 1(12), 51-59.
21. Song, M.; Im, S; Bij, Hh and Song, L. (2011). Does Strategic Planning Enhance or Impede Innovation and Firm Performance. *Journal of Product Innovation Management*, 28(4), 503-520.

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THE COMPETITIVENESS OF COUNTRIES IN INTERNATIONAL MARKET AND TECHNOLOGY RELATIONSHIP

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Abstract

In this study the relationship between technological progress and competitiveness was analyzed by using panel co-integration method with eleven countries with annual data covering the period 2006-2016. As a technology indicator, scientific and technical journal articles, which the World Bank specified as one of the technological indicators, was used in analysis. To conduct panel co-integration analysis, Levin, Lin, Chu unit root test and Im, Pesaran, Shin unit root test and Johansen co-integration test were applied. According to Levin, Lin, Chu unit root test and Im, Pesaran, Shin unit root test, variables are stationary. As a result, a positive relationship was found between technological progress and competitiveness.

Key words: *Technology, Competitiveness, Panel, Data*

JEL Classification: F 40, F49, F60

Introduction

Throughout history, the concept of competitiveness, which first started in the field of agriculture, shifted to the industrial field with the industrial revolution which started in the late 18th century and early 19th century. Nowadays, globalization and technological innovation removed the borders between countries and it increased competition between both corporate and country basis. In a highly competitive environment, traditional production systems replaced into new production systems based on knowledge R & D and innovation. This change in production systems has also caused a change in competition. Today, in order to achieve competitive advantage, it is not enough to produce any goods or services at a lower cost, but such things as productivity, quality, speed and flexibility have become very important. Therefore, competitiveness in the field of information and technology gain importance from day to day. Accordingly, companies and countries need to allocate more resources to R&D and innovation so that they can gain sustainable competitive advantage.

J. Schumpeter stated that new product development, production, management and similar processes have significant effects on competitiveness and that technological developments and in this sense, it will have positive effects on economic growth (Bozkurt, 2015). Moreover, according to Schumpeter, the technological change process is the most important driving force for the operation and development of market economies, and technological change is the most important competitive tool in market economies (Avcı & Uysal, 2016). According to Porter (1998), competitive advantage with low-cost labor or scale economies remained in the old times. Today, the only way to gain competitive advantage is innovation and change. Competitive advantage can only be sustained through progress and development. To maintain a competitive advantage requires a firm to apply creative destruction on themselves. It means that the firm (industry or country) should develop new supremacy and destroy its former advantages. If they do not do it themselves, there are many competitors who will do it for them (Porter, 1998).

The study consists of four parts. In the first part, literature Review, in the second part material and methods, in the third part result and debate and in the final part conclusion was given.

Literature Review

Although it is difficult to make a general definition, because technology is related to many different disciplines, it can be defined as technology is a way of improving human life (Turanlı, 2010). The concept of technological change is usually expressed as changes in the production process as a result of the application of new knowledge in science and technology (Ege & Ege, 2017).

Technological change process has three phases which are invention, innovation and diffusion. The invention represents the creation of a new thinking that has the potential to be implemented in the economy. It is assumed that the frequency of inventions is determined by the accumulation of scientific knowledge and that the inventions are spread over time (Taymaz, Voyvoda, & Yilmaz, 2008). Innovation, which is the next step of invention, is the realization of a new or significantly improved product (goods or service), or process, a new marketing method, or a new organizational method (Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, 2005). Last but not least, diffusion is the attempt by firms in the market to imitate and adopt new production techniques that are cheaper and more profitable. When the market reaches saturation with new processes and products, the inventors will enter new product and technical search path in order to be able to maintain their competitive position in the market (Petrović, Milićević, & Djeri, 2017).

There is various effect of technological change on competitiveness. The first of them is that it reduces labor costs. The most common result of using new technology is the decrease in labor cost per unit output. This allows a rapid increase in production through the use of advanced technologies, but it does not cause any decline in the total number of employees. For instance, when a computer starts to be used in production commonly, many new business opportunities such as computer engineering, programming and technical service have been created. What should be noted here is that the need for qualified workforce is increasing as the labor cost decreases with

technological change (Troof, 1985) because qualified labor force is needed to produce advanced technology products and to use them in the most effective way.

The other effect of technological change on competitiveness is the decline in capital costs. In the past years, firms have had to keep high stocks of raw materials, semi-finished goods and finished goods because there was absence of advanced technological developments. Companies that have to keep high stock, need more capital and this leads total costs increase, especially during periods when interest rates were high. With new technologies, it is possible to produce in a shorter time before. So, it is not necessary to keep high stock anymore and capital cost have started to decrease (Chabowski & Mena, 2017; Korauš et al., 2019).

Another effect of technological change on competitiveness is that it increases product and service quality. Especially with the use of new technologies in engineering fields, product quality has increased and it has become possible to manufacture in different shapes, sizes and designs. In addition, new technologies enable diversification of products and services to satisfy changing consumer needs. Providing a wider range of products and services to consumers will make companies more competitive (Cho & Ramirez, 2016).

In addition to the above, it can be said that competitiveness is based on technological innovation. Therefore, it is accepted that technological innovation is one of the most fundamental determinants of international competitiveness as well as rapid production (Ekmekçi & Ansal, 2009).

In the literature, Wyszowska-Kuna studies on technological change and competitiveness and they examined the relationship between technology and international trade for five OECD member countries including Germany, Sweden, the Netherlands, Japan and France. Technological advantage and comparative advantage index were calculated for 19 production sectors in those countries. It was tested if technology capacity has impact on trade. Although results were insignificant for France, For Germany, Sweden, the Netherlands and partly for Japan, it was found that creating a technological advantage provides a competitive advantage on foreign trade (Wyszowska-Kuna, 2017).

Kulikova developed a model to investigate the short and long-term effects of technological change and cost-related macroeconomic indicators (such as wages and exchange rates) on international competition for 16 OECD countries 1966-1987 period. It was found that while macroeconomic indicators such as wages and exchange rates provide short-term advantages on competition, technological developments provide long-term advantages on competition (Kulikova, 2014).

In the study of Mehmet Ozan SARAY and Remzi HARK 2015, relationship between technology density of exports and export and patent activities was examined for Austrian economy. It was concluded that there were more patent applications in the technology intensive sectors and this situation increased export (Mehmet Ozan SARAY & Remzi HARK, 2015).

Adlyte tested if there was a relationship between technological innovation activities and trade performance by using the time series data for manufacturing industry in the UK for the period 1954-1985. technological innovation activities was found to improve the UK's competitive power and thus trade performance (Adlyte, 2015).

Falkowski examined the relationship between export performance and technological change for 27 countries including Turkey. In the study, patent application was used as indicators of technological change. In all countries, but Japan, patent activity has positive impact on export performance of countries (Falkowski, 2018).

Petrović, Milićević, and Djeri investigated the impact of technological innovation performance on competitiveness for informatics by using the survey method. It was found that sector there were positive relationship between innovation activities and competitive power for the companies in the informatics sectors (Petrović et al., 2017) .

Material and Methods

In this paper, panel co-integration test will be executed to reveal the relationship between the variables. panel data includes both time series and cross section series (Baltagi, 2005). The equation can be shown as

$$Y_{it} = \rho_i Y_{it-1} + \delta_i X_{it} + \varepsilon_{it} \quad (1)$$

$i = 1, \dots, N$ (the index for cross-sectional units and N is the number of units in the model)

$t = 1, \dots, T$ point of observation for the unit. (T is the number of observations per unit)

ε_{it} (the error term is white noise disturbance for the i at time t)

If $|\rho_i| < 1$, (Y_i does not contain a unit root)

if $|\rho_i| = 1$, (Y_i contains a unit root)

Firstly, unit root tests of the series are needed to reveal if there is a good relationship between the variables used in the model. Augmented Dickey-Fuller (ADF) tests is used to investigate unit root presence in panel data analysis, and many unit root tests in panel data analysis are based on the ADF test. But in the panel data analysis, the process is more complicated than in the time series analysis. The most important factor in panel data analysis is heterogeneity. In particular, every variable in the analysis may not have the same features, that is, they may be different in terms of being stationary or non-stationary (Asteriou & Hall, 2007). That is to say, analysis may be resulted in insignificant results while some units have unit root, some units do not have unit root. Some of the studies suggesting unit root testing in panel data models are some studies such as (Im, Pesaran, & Shin, 2003; Levin, Lin, & James Chu, 2002). Levin, Lin and Chu assume that ρ_i is the same for the panel cross sections, that is $\rho_i = \rho$ for all i , while Im, Pesaran and Shin assume that ρ_i may be different for each i . The main equation for LLC and IPS unit root tests, can be shown as

$$Y_{it} = \alpha_i Y_{it-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta Y_{it-j} + X_{it} \delta + \varepsilon_{it} \quad (2)$$

For the LLC unit root test, the null and alternative hypothesis may be shown as;

$$\begin{aligned} H_0: \alpha_i &= 0 \\ H_1: \alpha_i &= \alpha < 0 \end{aligned} \quad (3)$$

for the IPS unit root test, the null and alternative hypotheses may be shown as;

$$\begin{aligned} H_0: \alpha_i &= 0, \forall_i \\ H_1: \alpha_i &= 0 \text{ } i = 1, 2, \dots, N_i \\ &: \alpha_i < 0 \text{ } i = N + 1, N + 2, \dots, N \end{aligned} \quad (4)$$

While the null hypothesis shows that all cross sections series of the panel contain unit root, alternative hypothesis, does not contain unit root.

The Pedroni cointegration analysis method is used to investigate whether there was a long-term relationship between the series. In the cointegration analysis, Pedroni proposed a test which allowed heterogeneity in the cointegration vector (Asteriou & Hall, 2007). This test does not only analyze dynamic and stationary effects to be different between the cross-sections of the panel, but also analyzes the differentiation of the cross-section under the alternative hypothesis (Asteriou & Hall, 2007). Pedroni tests are described as permitting multiple regressors, varying the cointegration vector across different parts of the panel, and also allowing for the heterogeneity of faults along the cross-sectional units. Seven different cointegration tests were presented to cover these tests and they are also divided into two different categories which are within dimension and between dimension. The first category contains four tests which are the within dimension tests and the second category includes three other tests which are between dimension tests (Asteriou & Hall, 2007). The first test is a type of variance ratio test, the second is similar to the Phillips Peron (PP) (rho) statistic and the third is similar to the PP (t) statistic. The fourth statistic is a parametric statistic similar to the Augmented Dickey Fuller (ADF) (t) statistic. In the second category, the three tests are similar to the PP (rho) statistic and the other two are similar to the PP (t) and ADF (t) statistics (Pedroni, 1999, 2004).

Pedroni co-integration analysis may be seen in Equation 5.

$$Y_{it} = \alpha_i + \delta_{it} + \beta_i X_{it} + e_{it} \quad (5)$$

In the first difference, Y and X are variables are stationary. α_i and δ_i parameters indicate the individual effects of the cross sections.

The error term e_{it} indicates stationarity and the co-integration relationship between the variables. Stationarity tests of error terms can be seen equation 6 and 7.

$$e_{it} = \rho_i e_{it-1} + u_{it} \quad (6)$$

$$e_{it} = \rho_i e_{it-1} + \sum_{j=1}^{P_i} \psi_{it} \Delta e_{it-j} + u_{it} \quad (7)$$

In the hypothesis tests, the main aim is to see if the $\rho_i = 1$ or not. Then, the null hypothesis shows no correlation between dependent and independent variables. But, for the alternative hypothesis there are two different conditions. The first condition is that the ρ_i coefficients will be different for all cross sections. For equation 6, hypotheses for the ρ_i can be written as

$$H_0: \rho_i = 1$$

$$H_a: \rho_i = \rho < 1 \quad (8)$$

The second condition is that some of the ρ_i coefficients will be different for not all cross sections. For equation 7, hypotheses for the ρ_i can be written as

$$H_0: \rho_i = 1$$

$$H_a: \rho_i < 1 \quad (9)$$

In this study, the effects of technological level on competitiveness were investigated. For technological level indicator, the number of scientific and technical journal articles were used. For technological level indicator, data were collected from World Bank database ('World Bank Country and Lending Groups – World Bank Data Help Desk', n.d.) and competitiveness data were collected from the Global Competitiveness Reports (Schwab & -Martín, 2017). As a country group, eleven countries which are Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Turkey, South Korea, Vietnam were chosen for the time period between 2006-2016. But Iran was excluded from analysis because of lack of data. The data were obtained from the World Bank database ('Indicators | Data', n.d.).

Results and Debate

According to the literature on panel analysis, in order to make the analysis results reliable, it is necessary to ensure the stationarity of the series used in the analysis. So, a stationarity test is really important for analysis. "Levin Liu Chu" and "Im, Pesaran and Shin" unit root tests were used in stationary analyzes. Stationarity results are shown by Table 1 and Table 2.

Table 1 *Levin Liu Chu Unit Root tests*

Variables	Intercept	Intercept and Trend	None
Competitiveness (Level)	5.08890*	16.5574*	2.12361
Scientific Journal (Level)	2.12409	2.09897	8.57086
Δ Competitiveness	13.0129*	11.6631*	11.6678*
Δ Scientific Journal	5.74173*	7.63842*	1.10825

Sources: Own research, 2019

NOTES:

Values with * indicates significant at 1%

Values with ** indicates significant at 5%

Values with *** indicates significant at 10%

Table 2 *Im, Pesaran and Shin Unit Root Tests*

Variables	Intercept	Intercept and Trend
Competitiveness (Level)	1.10244	5.27667*
Scientific Journal (Level)	5.93106	3.24531
Δ Competitiveness	7.24807*	2.60165*
Δ Scientific Journal	3.08990*	1.32229***

Sources: Own research, 2019

NOTES:

Values with * indicates significant at 1%

Values with ** indicates significant at 5%

Values with *** indicates significant at 10%

According to the results of the unit root test of Levin Liu Chu, Scientific Journal has unit roots at their own level. But competitiveness has unit root for none although it has no unit root intercept, intercept and trend. At the first difference, competitiveness is stationary. Scientific Journal is also stationary for both trend and trend and intercept, but none.

As it can be seen on Im, Pesaran and Shin tests in Table 2, competitiveness is stationary at first difference at %1 significant level. Scientific Journal is significant at first difference at %1 significant level for Intercept but it is significant at first difference at %10 significant level (Güvenek & Alptekin, 2010).

Table 3 Pedroni Intra Dimension Results

Variables	Statistics	Probability
Panel v	1.769527	0.0384
Panel ρ	-0.788309	0.2153
Panel PP	-3.083099	0.0010
Panel ADF	-6.111392	0.0000

Sources: Own research, 2019

Table 4 Pedroni Inter Dimension Results

Variables	Statistics	Probability
Group ρ	0.939863	0.8264
Group PP	-3.965596	0.0000
Group ADF	-9.211697	0.0000

Sources: Own research, 2019

For intra-dimension results, Panel PP and Panel ADF are significant and for Inter Dimension results, Group PP and Group ADF are significant. It means that four of seven statistics are significant. According to the Pedroni cointegration test for model, The H0 hypothesis (no cointegration between the series) in which the long-lasting effect of Scientific Journal on competitiveness was rejected, hence H1 was accepted. It can be concluded that there is long term relationship between variables for eleven countries.

Conclusion

In today's highly competitive marketplace, it is imperative for businesses to innovate new ways to streamline their supply chain and optimize productivity. With the aid of modern technologies, you can create better visibility within your supply chain, which will enable you to have more control over your business and stay ahead of the competition. Technology can help to simplify your supply chain management, which will enable your business to operate more efficiently, give you more visibility and control over your inventory, and help to reduce your operational costs. Additionally, through a more stable and efficient supply chain, you can greatly enhance customer satisfaction and retention.

In many studies using different methods on the relation between technology and competitiveness in the literature, it has been concluded that the increase in technological innovation activities has a positive effect on competitiveness and are positively affecting productivity of countries, companies or industries. In this study, in order to reveal the relationship between these two variables, panel co-integration model was used with annual data covering 2006-2016 period. In order to understand the stationarity of the variables, unit root tests were applied and it was seen that all variables are stationary in the first difference. Johansen cointegration test was applied to series which are stationary at their first difference and cointegration was found for the models. By using Johansen co-integration test, it was revealed there was long term relationship between variables. Therefore, it can be concluded that there is a long-

run relationship between the variables which are included in the model. Therefore, any economic policy applied to the mentioned variables will affect in long-term. In other words, policy activity on these variables will show its effect in long term. In the direction of the results obtained from the analysis, countries need to allocate more resources to R & D and innovation, which are important inputs for technological change, so that they can gain sustainable competitive advantage. It is necessary to keep up with technological change by investing in education to develop the human capital which is one of the element to develop the technology.

Bibliography

1. Adlyte, R. (2015). How to Measure Country's Investment to Technologies: Defining Indicators. International Multidisciplinary Scientific Conference on Social Sciences & Arts SGEM, 379-385.
2. Asteriou, D., & Hall, S. G. (2007). Applied Econometrics: A Modern Approach Using Eviews and Microfit Revised Edition (First Edition edition). Basingstoke: Palgrave Macmillan.
3. Avcı, M., & Uysal, S. (2016). Türk İmalat Sanayinin Teknolojik Yapısı Üzerine Bir Değerlendirme. *Journal of social sciences and humanities researches*, 17(36), 49-66.
4. Baltagi, B. H. (2005). *Econometric Analysis of Panel Data* (3rd ed). Hoboken Wiley.
5. Bozkurt, Y. D. D. K. (2015). Dışsal teknolojik şoklar ve ekonomik büyüme: gelişmekte olan ülkeler için ampirik bir analiz. *Ege Stratejik Araştırmalar Dergisi*, 4(1), 47-69.
6. Chabowski, B. R., & Mena, J. A. (2017). A Review of Global Competitiveness Research: Past Advances and Future Directions. *Journal of International Marketing*, 25(4), 1-24.
7. Cho, H., & Ramirez, M. (2016). Foreign Direct Investment and Income Inequality in Southeast Asia: a Panel Unit Root and Panel Cointegration Analysis, 1990-2013. *Atlantic Economic Journal*, 44(4), 411-424.
8. Ege, A., & Ege, A. Y. (2017). The Turkish economy and the challenge of technology: a trade perspective. *New Perspectives on Turkey*, 57, 31-60.
9. Ekmekçi, U., & Ansal, H. (2009). Teknolojik yetkinliklerin doğrudan yabancı yatırımlardan bilgi transferine etkileri. *The Impact of Technological Capabilities on Knowledge Transfer from Foreign Direct Investments.*, 8(4), 37-48.
10. Falkowski, K. (2018). Competitiveness of the Baltic States in International High-Technology Goods Trade. *Comparative Economic Research*, 21(1), 25-43.
11. Güvenek, B., & Alptekin, V. (2010). Enerji Tüketimi ve Büyüme İlişkisi: OECD Ülkelerine İlişkin Bir Panel Veri Analizi, 1(2), 172-193.
12. Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), 53-74.
13. Indicators | Data. (n.d.). Retrieved 3 March 2018, from <https://data.worldbank.org/indicator>
14. Korauš, A., Dobrovič, J., Polák, J., Kelemen, P. (2019). Security position and detection of unusual business operations from science and research perspective, *Entrepreneurship and Sustainability Issues* 6(3), 1070-1079
15. Kulikova, N. N. (2014). Impact of the Innovation Economy to Educational Technologies. International Multidisciplinary Scientific Conference on Social Sciences & Arts SGEM, 391.

16. Levin, A., Lin, C.-F., & James Chu, C.-S. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics*, 108(1), 1–24. [https://doi.org/10.1016/S0304-4076\(01\)00098-7](https://doi.org/10.1016/S0304-4076(01)00098-7)
17. Mehmet Ozan Saray, & Remzi Hark. (2015). Evaluation of Competitiveness Power of OECD Countries in High-Technology Products. *Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, Vol 5, Iss 1, Pp 347-372 (2015), (1), 347.
18. Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition. (2005) (3rd ed.). France: Organisation for Economic Co-operation and Development.
19. Pedroni, P. (1999). Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors. *Oxford Bulletin of Economics and Statistics*, 61(S1), 653–670.
20. Pedroni, P. (2004). Panel Cointegration: Asymptotic And Finite Sample Properties Of Pooled Time Series Tests With An Application To The Ppp Hypothesis. *Econometric Theory*, 20(3), 597–625.
21. Petrović, J. (1), Milićević, S. (2), & Djeri, L. (3). (2017). The information and communications technology as a factor of destination competitiveness in transition countries in European Union. *Tourism Economics*, 23(6), 1353–1361.
22. Porter, M. E. (1998). *Competitive Advantage of Nations*. New York: Free Press.
23. Schwab, K., & Martín, X. S. (2017). *WEF_GlobalCompetitivenessReport_2017-2018*. Geneva: World Economic Forum. Retrieved from
24. Taymaz, E., Voyvoda, E., & Yilmaz, K. (2008). Türkiye İmalat Sanayiinde Yapısal Dönüşüm ve Teknolojik Degisme Dinamikleri (ERC Working Paper No. 0804). ERC - Economic Research Center, Middle East Technical University. Retrieved from
25. Troof, M. (1985). *Technological Forecasting and Social Change* | Vol , Issue , Pages (July 1985) |
26. Turanlı, R. (2010). *Bilim-teknoloji-inovasyon temelli ekonomi ve toplum*. İstanbul Ticaret Odası.
27. World Bank Country and Lending Groups - World Bank Data Help Desk. (n.d.). Retrieved 4. March 2018, from <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
28. Wyszowska-Kuna, J. (2017). The Role of Intermediate Demand and Technology for International Competitiveness of the KIBS Sector: Evidence from European Union Countries. *Journal of International Trade and Economic Development*, 26(7–8), 777–800.

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DOES COMPLEMENTING FISCAL CAPACITY WITH INSTITUTIONAL QUALITY ACCENTUATE SOCIAL PROTECTION SPENDING? INSIGHT FROM NIGERIA DATA

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Abstract

It has been argued that extreme poverty and inequality can be reduced through proper social protection programmes. This study sought to analyze fiscal capacity, institutional quality and social protection spending in Nigeria using the Autoregressive Distributed Lag (ARDL) Bound Testing to cointegration approach. Variables such as per capita GDP, gross saving rate, inflation rate, debt service, real per capita expenditure on infrastructure were included in our model as predictors of social protection spending. Findings suggests that increase in fiscal capacity and per capita GDP accentuates social protection spending which largely depends to great extent on quality of institution.

Key words: *Fiscal capacity, institutional quality, social protection spending, sustainability, Autoregressive Distributed Lag model*

JEL Classification: H53, H55

Introduction

Social protection when effective is used to assuage poverty and protect the vulnerable (Buck, 2012; Mathers & Slater, 2014). Following successful experiences, countries have either initiated new social protection programmes or expanded existing ones. In Africa, social protection is viewed as an effective mechanism to

support poverty reduction and also protect the deprived from furthering into poverty. In Nigeria, with the return of democratic governance in 1999 and a reorientation of policy towards growth and development, several steps have been taken to extend social protection measures further than the formal sector to address poverty and vulnerability. Despite the fact that social protection programmes constitute an investment in people, the identification of the resources to support their execution represents a major challenge particularly in developing countries. A country's ability to appropriately embark on social protection programmes is a matter of fiscal capacity. Jutting & Prizzon (2013) contend that social protection spending, especially in emerging countries is determined by fiscal capacity and quality of institutions. The institutional capacity needed for the execution and delivery of the interventions frequently poses challenge (Cichon, et al 2006; Barrientos, et al 2010; World Bank, 2001, 2012). The effect of fiscal capacity and institutional quality on social protection has become very important, especially in Nigeria. Despite the increasing interest, there has been limited research made in these fields to explore their influence.

Existing studies assessing the effect of fiscal capacity and institutional quality on social protection spending are based on panel data methodology. Some researchers confirm that in some countries, the benefits of social protection programmes is being implied by improved fiscal capacity in the presence of strong institutions ((Murshed, et al 2017, Dodlova and Lay, 2016; Gebregziabher and Niño-Zarazúa, 2014; Aguzzoni, 2011). On the converse, other researchers have found little or no evidence to confirm this relationship (Dabla-Norris, et al, 2015; Ostry, et al, 2014, *inter-alia*).

A perusal of literature revealed that studies exist on the relation between social protection and economic growth. Beside studies on the interaction among fiscal capacity, institutional quality and social protection spending adopted panel data methodology and such approach do not offer enough evidence on the influence of fiscal capacity and institutional quality on social protection expenditure in Nigeria. The contradiction of the predictions rekindles the importance of investing this relationship using alternative empirical methodology. Considering the above, in this paper, we sought to examine an impact of fiscal capacity and institutional quality on social protection spending in Nigeria applying Autoregressive Distributed Lag (ARDL) Bound Testing approach.

One of the foremost theories that sought the adoption of economic approach to finding out the composition of government overheads and budgeting is the Marginal Utility Approach where expenditure should be so distributed in such a way that the last monetary unit expended yields the same real value. But in conducting such expenditure, economic welfare is usually achieved when attention is focused on the vulnerable in the society. Thus policies are evaluated in accordance to their impact on people's capabilities such as social protection. It inquires whether people are well-nourished, and if the conditions for this capability, such as food entitlements and having sufficient food supplies, are being met. It also inquires whether people have access to real political participation, to community activities that support them to cope with struggles in daily life, to a high-quality educational system and that foster real friendships. For some of these capabilities, the major input will be fiscal capacity and institutional framework in decision making, allocations of resources economic production, but for others it can also be political practices and institutions. The government-led growth theory also contends that government spending is used, both as a stimulant for capital investments and a source of needed social welfare in the society. For the market to operate smoothly to produce growth and enhance well-

being; these infrastructure and services are mandatory; yet in most cases it is beyond the capacity of the individuals to provide. Hence, the needed services and infrastructure are usually provided through public expenditure so as to guarantee well-being in the society.

A research conducted by Dodlova and Lay (2016) examined the rise of the social protection agenda in Zambia using analytical process involving two alternative drivers: shifting dynamics within political settlement and the promotional efforts of a transnational policy coalition. They compared the incidents of social cash transfers and social health insurance to investigate how the interplay of these drivers has generated uneven commitment to the respective policies. It was concluded that social protection has not displace existing interests, philosophies and rent-allocation practices and cash transfers are gaining localized support whereas. Aguzzoni (2011) extended the social protection system and found that social capital expenditure did not significantly reduce poverty. This is an indication that apart from amount spent on social protection, quality of institution is necessary in aiding its poverty-reduction goal. Whereas Skocpol (1987) provides systematic analyses of the history of social provisioning in the United States of America as distinct from that of Europe and explained why social insurance was not comprehensive in the United States excluded health insurance. Others such as Thome, et al, (2013) measured the local and regional multiplier impact each amount transferred to a deprived household can generate while (Mideros, et al, 2015) estimated the rate of returns to investments on social protection.

In the work of Murshed, et al (2017), the causal link between fiscal capacity and social protection expenditure in emerging countries was determined with panel approach and found that greater fiscal capacity robustly raises social protection spending, thus providing strong evidence for social sector spending being amplified by improved fiscal capacity in the presence of a well-functioning democracy. This study follows Gebregziabher and Niño-Zarazúa (2014) that investigated social spending and aggregate welfare in developing and transition economies applying panel data from 55 developing and transition countries to present evidence to suggest that social spending improves the inequality-adjusted human development while public health outflow reduces child mortality. In relation to the studies, Dabla-Norris, et al, (2015) and Ostry, et al, (2014) show that the recent growth experiences of cross-section of developed and developing countries suggest that inequality is injurious to growth. Inequality exposes economies to financial crises, greater inequality which results in less human development, which is damaging to growth. On the causes of recent rises in income inequality, Dabla-Norris, et al. (2015) pointed out that unskilled labour-saving technical progress, financial globalization and less regulation of labour markets, including the non-formalization of work, are the chief culprits. Dincecco and Katz (2016) studied state capacity and long-run economic performance in Europe and noticed that for effective performance of fiscal policy programmes, the government undertook two political transformations over this period, which are, fiscal centralization and restricted government spending. It was also found that substantial direct correlation exists between fiscal centralization and economic growth and that capacity is essential in long-term growth.

The interaction between social protection and agriculture was examined by Tirivayi, et al, (2016) with survey analysis from 1999-2012. It was revealed that both agriculture and social protection interventions are needed to combat hunger and poverty among poor small holder farmers. The study provides further evidence on how social protection impacts agricultural production and how agricultural

interventions lessen risks and susceptibility at the household and local economy levels. However, the availability of evidence was uneven across outcomes and regions. Similarly, Barrientos (2013) ascertain the degree to which developing social transfer programs in emerging countries can advance the productive capacity of households in poverty and contribute to micro-level growth using a basic framework to link transfers to growth interceding processes and productive capacity outcomes. Result had it that social transfer programs can have affirmative effects on the productive capacity of deprived groups. A variant of the study by Besley and Persson (2010) used simple analytical structure in which state capacities are modelled to highlight that a country's capacity to fight risks is largely dependent on natural resources and the degree of political stability.

Chiripanhura and Niño-Zarazúa, (2015) also adopt panel data from 31 African countries to test whether donor aid facilitates political business cycles and investigated their influence on growth. Through guaranteeing support to a particular regime, donor agencies may unknowingly instigate political business instability. With forbearance and sometimes collusion by donors, aid seems to allow certain governments to instigate macroeconomic inducements that ensure victory without fear of losing aid support. Similarly, Dincecco and Prado (2012) investigated welfare, fiscal capacity, and economic performance using Ordinary Least Square method. The outcome was robust to a wide range of sub-samples, controls and specifications.

The interaction among inequality, regime type and redistributive transfers in emerging countries was examined by Dodlova and Giolbas (2016) with panel data. It was opine that there is higher likelihood of redistribution in democracies than in autocracies and with an initial higher inequality, there could be more redistribution in democracies but not necessarily in autocracies. They tested these predictions using data from emerging countries for the period 1960-2010 and found that democracy increases redistribution and there was more redistribution with rising inequality. Using panel data from Morocco, Ghana, Guinea-Bissau and South Africa, Murshed, et al (2017) examined the causal relationship between fiscal capacity and social protection. The results revealed positive significant impact of fiscal capacity on social protection. Knack and Keefer (1995) examined the association between institutions and economic progress using different proxies for institutions. Adopting the OLS method of estimation, it was found that political rights and civil liberties are not enough for measuring institutions. With property rights, it found that property rights are significant determinant of growth. This suggests that country's adoption of right to property will hike growth. In similar vein, Grogen and Moers (2001) concluded that institutions are the major determinant of FDI and economic progress of 25 countries for the period 1990-1998. Institutional factors and people's preferences in social protection was conducted by Gassman et al. (2016) and further examined to what length the provision of social protection depends on the quality of institutions and people's preferences using panel data from 52 low and middle-income countries and 28 high income countries. They found that both factors have impact in all the countries and the estimates were robust to the different dependent variables and different measures for the quality of institutions. In an earlier study, Ali and Crain (2001) explained the interconnections among economic freedom, institutional distortion and growth using extreme bound analysis with a sample of 119 countries. The result provide evidence that civil liberties and political administration have no substantial impact on growth while economic freedom plays important role in improving growth.

Vijayaraghavan and Ward (2001) tested the empirical relation between institutions and economic growth from 1975-1990 for 43 countries and used different measures of institutional quality like structure of governance, property rights, political freedom and size of the government. The research revealed that well defined property right and size of government are important determinants of institutional quality which improve economic performance. In the same vain, Adkins, et al. (2002) investigated the determinants of inefficiency employing stochastic frontier analysis by using two samples one having seventy three and second having seventy six countries. They discover that institutions are helpful in enhancing economic freedom and efficiency which in turn increases economic growth. In similar way, Khan and Khawaja (2011) studied the relation among predation, quality of institutions and economic growth using game theory model. The result shows that predation is significant hurdle in the way of economic progress as it retards per capita consumption, enhances inequality and reduces overall output. It was contended that the comparative advantage which is possessed by the predators can be eliminated by high quality institutions and enhance economic growth. Gwartney, et al (2004) is of the notion that differences in institutional quality account for differences in growth rates among countries and that increase in economic freedom index is a long run phenomenon. Ulubasoglu and Doucouliagos (2004) explored the relation between institutions and economic performance using a sample of 119 countries. They used simultaneous model for econometric analysis with two proxies for institutional quality, one for political freedom and the other for economic freedom. They discovered that political freedom has positive impact on human capital and total factor productivity and physical capital. Similarly, Le (2009) investigated the nexus among institutions, remittances, trade and economic growth for 67 developing economies. Using diverse estimation techniques, it was shown that better institutions have the potency to spur growth; eventhough remittances had negative impact on growth. Robinson, & Acemoglu (2006). (2006) however contented that variations in economic performance among countries are as result differences in the quality of economic institutions. Islam (2012) investigated the relationship between compensation to civil servants and economic growth using threshold regression methodology. The study found that growth is having virtuous and vicious circles with numerous equilibria, an indication that a cut in civil servants salary as part of budget balancing austerity measures may lower economic performance.

From the literature review, apart from the fact that findings are ambiguous and inconclusive, studies in this area so far are mainly based on long term estimations. Beside, fiscal capacity and social protection expenditure are mostly analyzed and paying less attention to institutional quality. In the examination of the relationship between fiscal capacity and social protection, evidence have shown that institutional quality plays a great role and its influence is used measured both in the short run and long run period. While previous studies have focused on long term effect based on adopted methodology, the short term effect has not been accounted for. Studies also adopted the panel approach with short time dimension which distorts actual impact This study contributes to existing literature by adopting the ARDL methodology to estimate both short-run and long-run effects. This approach is used in measuring short term effect while making projections for the long term impact.

Material and Methods

There have been various theoretical contributions made with regard to the study on social protection. Some of these theories include social welfare theory and human capability theory. The theory of welfare economics backed by the government-led growth or demand-led growth theory opine that government expenditure is used both as a stimulant for capital investment and enhancing social welfare (Stoesz, 1999). The theory is used to explain how economic, political and structural institutions determine social welfare. The theory emphasizes the role of interest groups in the distribution of welfare in the society. Traditionally, it was believed that greater government consumption was negatively correlated with growth because of crowding-out effects and distortions to incentives (Tavares and Wacziarg 2001). But as argued by (Ostry et al. 2014) the experience of most countries in recent times indicates that redistributive policies, including social protection expenditures, appear to no longer harm growth prospects.

The human capability theory opines that government intervention is needed due to market failure in allocating resources. To sustain high levels of growth, the demand for goods and services must be sustained. But in most economies, these goods are beyond the capability of the private individuals, hence the need for government intervention to guarantee well-being in the society. This may be rooted in either systematic discrimination or unequal access to opportunities. In the presence of market imperfections and inequality of opportunity, the dichotomy between the efficiency and equity arguments against inequality cannot be maintained, thereby justifying social protection and redistributive policies. Where there is a distributive conflict between the rich and the poor, a high degree of inequality may damage future growth prospects (Alesina and Rodrik 1994). Rodrik (1999) is of the view that social conflict is indicated by inequality, unless managed by well-functioning institutions, can lead to growth collapses. A degree of social protection is therefore required to avoid distributive and social conflicts, particularly with greater globalization and when level of inequality is on a continuous rise. As far as the determinants of social protection expenditure are concerned, it is predicated both on economic capacity as well as institutional factors which are not mainly concerned on how the state and society respond to inequality and poverty but also on the quality of governance. In this regard, economic capacity and institutional quality which make up the two ingredients of state capacity largely determine the existence and extent of social protection spending (Murshed, et al 2017).

The empirical model is established on the premise that fiscal capacity and institutional quality influences social protection spending. Data used are time series covering 1981-2017 sourced from Central Bank of Nigeria Statistical Bulletin, World Development Indicator and the Freedom House. Variables of interest are social protection expenditure (expenditure on pensions and gratuity), fiscal capacity (total revenue as a ratio of GDP), GDP per capita, debt service, gross savings rate, institutional quality (political rights and civil liberty (scaled 0-1) and capital expenditure on infrastructure (capital expenditure as ratio of total expenditure).

The ARDL Bounds methodology was used to specify our model. The methodology is constructed taken into consideration the fact that there is possibility of the past value of the dependent variable to explain what happens to the present value. Differently put, the approach can be used to explain both short-run effect and long-run effect. In the simplest ARDL evaluation model, the linear relationship for an explanatory variable is specified as:

$$y_t = \theta y_{t-p} + \sum_{j=0}^M \beta_j - x_{t-M} + \mu_t \quad (1)$$

Taking into consideration variables of interest, fiscal capacity and institutional quality impact on social protection spending alongside other control variables using ARDL bond test is specified as;

$$SPS = s(FC, INST, K) \quad (2)$$

Considering additional variables the relationship between dependent and explanatory variables is specified functionally as:

$$SPS = s(FC, GDPPC, DSNIG, GSR, INST, RPCID) \quad (3)$$

In line with ARDL bound test, the model for estimation is specified as:

$$\begin{aligned} \Delta \ln SPS_t = & \beta \ln SPS_{t-1} + \emptyset \ln FC_{t-1} + \theta \ln GDPPC_{t-1} + \lambda \ln DSNIG_{t-1} + \psi \ln GRS_{t-1} \\ & + \alpha \ln INST_{t-1} + \pi \ln INF_{t-1} + \gamma \ln RPCID_{t-1} + \sum_{i=1}^n \beta_i \Delta \ln SPS_{t-i} \\ & + \sum_{j=0}^M \emptyset_j \Delta \ln FC_{t-j} + \sum_{k=0}^p \theta_k \Delta \ln GDPPC_{t-k} + \sum_{l=0}^q \lambda_l \Delta \ln DSNIG_{t-l} \\ & + \sum_{v=0}^s \psi_v \Delta \ln GRS_{t-v} + \sum_{j=0}^p \alpha_j \ln INST_{t-j} + \sum_{u=0}^d \pi_u \Delta \ln INF_{t-u} \\ & + \sum_{x=0}^b \gamma_x \Delta \ln RPCID_{t-x} + \varepsilon_t \end{aligned} \quad (4)$$

where SPS = social protection spending, FC = fiscal capacity, GDPPC = GDP per capita, DSNIG= debt service, GSR = gross savings, INST = institutional quality (political rights and civil liberty, scaled 0-1), RPCID = expenditure on infrastructure development, ln = natural logarithm, Δ = first difference operator. The summation of $(\beta_i - \gamma_x)$ represents the short-run dynamics of the model, while the coefficients $(\beta - \gamma)$ represents long-run relationship and ε_t is the serially uncorrelated disturbance with zero mean and constant variance.

To further test the existence of possible causal relationship, we employed the Pairwise Granger Causality test. The framework is specified following Engle and Granger (1987) and Kilic (2011) as:

$$LN SPS_t = \sum_{i=1}^k \alpha_{1i} LN SPS_{t-i} + \sum_{i=1}^k \alpha_{2i} LN FC_{t-i} + \alpha_{3i} INST_i + \varepsilon_{1t} \quad (5a)$$

$$LN FC_t = \sum_{i=1}^k \beta_{1i} LN FC_{t-i} + \sum_{i=1}^k \beta_{2i} LN SPS_{t-i} + \beta_{3i} INST_i + \varepsilon_{2t} \quad (5b)$$

$$INST_i = \varphi_{1i} INST_i + \sum_{i=1}^k \varphi_{2i} LN SPS_{t-i} + \sum_{i=1}^k \varphi_{3i} LN FC_{t-i} + \varepsilon_{3t} \quad (5c)$$

ε_{3i} are residuals which were assumed to be normally distributed and white noise. K denotes the optimal lag length.

Results and Debate

Table 1 Descriptive statistics

	LNSPS	LNRPCI D	LNFC	LNGDPP C	LNDSNI G	GSR	INFL
Mean	2.9562	0.8597	6.9549	13.1622	27.0248	19.1644	20.8723
Median	4.1619	0.9161	7.7821	13.1176	27.0569	19.2629	12.5467
Maximum	5.3381	1.6845	9.3162	13.5707	28.6206	38.9326	72.8355
Minimum	-2.4079	-0.4780	2.5337	12.7702	25.7431	4.5026	5.3822
Std. Dev.	2.4019	0.5754	2.1950	0.2941	0.66439	8.3464	19.4498
Skewness	-0.7503	-0.5452	-0.5875	0.1356	0.24011	0.3687	1.4619
Kurtosis	2.0993	2.5317	1.8675	1.2740	3.36621	2.6661	3.6082
Jarque-Bera	3.5738	1.6429	3.1070	3.561044	0.4255	0.7644	10.4053

Source: Authors Computation

Table1 shows that all the variables have mean values less than 100. Apart from social protection spending, capital expenditure on infrastructure and fiscal capacity shows negative skewness. The minimum values for social protection spending, capital expenditure on infrastructure, fiscal capacity, per capita GDP, debt service and gross savings rate is -2.4, -0.4, 2.5, 12.8, 25.7, 4.5 and 5.4 respectively. As part of the pre-estimation test, the unit root of the variables was ascertained. For robustness of results and justify the suitability of the ARDL model, three tests were adopted and the results presented respectively in Table 2A. Table 2B and Table 2C.

Table 2A Result of ADF Unit Root Test

Variables	Level Form		First Difference		
	5% critical value	ADF test statistics	5% critical value	ADF test statistics	Order of integration
LNSPS	-3.0048	-1.3996	-2.9918	-7.6796	I(1)
FC	-2.9604	-1.2639	-2.9639	-3.6347	I(1)
GSR	-2.9604	-3.7903			I(0)
LNDSNIG	-2.9604	-2.1867	-2.9639	-7.1789	I(1)
LNRPCID	-2.9604	-1.6022	-2.9639	-6.6087	I(1)
LNGDPPC	-2.9604	-2.3155	-2.9639	-5.6721	I(1)
INFL	-2.9918	-4.2095			I(0)

Source: Authors Computation

Table 2B Result of Philips-Perron Unit Root Test

Variables	Level Form			First Difference			Order of integration
	5% critical value	ADF test statistics	p-values	5% critical value	PP test statistics	p-values	
LNSPS	-2.9810	-1.3726	0.5798	-2.9918	-8.4044	0.0000	I(1)
FC	-2.9604	-1.4628	0.5387	-2.9639	-3.8980	0.0057	I(1)
GSR	-2.9604	-3.7850	0.0074				I(0)
LNDSNIG	-2.9604	-2.0807	0.2533	-2.9639	-9.1446	0.0000	I(1)
LNRPCID	-2.9604	-1.6022	0.4695	-2.9639	-6.6087	0.0000	I(1)
LNGDPPC	-2.9604	-2.8168	0.0675	-3.5683	-6.5356	0.0000	I(1)
INFL	-2.9604	-2.7183	0.0824	-2.9639	-6.6839	0.0000	I(1)

Source: Authors Computation

Table 2C Result of Break Point Unit Root Test of the Variables

Variables	Level Form			First Difference			Order of integration
	5% critical value	ADF test statistics	p-values	5% critical value	ADF test statistics	p-values	
LNSPS	-4.4436	-4.5596	0.0369				I(0)
FC	-4.4436	-9.0639	< 0.01				I(0)
GSR	-4.8598	-5.0004	0.0331				I(0)
LNDSNIG	-4.8598	-5.7313	< 0.01				I(0)
LNRPCID	-4.4436	-3.3862	0.4505	-4.4436	-7.1116	< 0.01	I(1)
LNGDPPC	-4.4436	-6.8093	< 0.01				I(0)
INFL	-4.4436	-6.3624	< 0.01				I(0)

Source: Authors Computation

In Table 2A, social protection spending, fiscal capacity, debt service, real per capita expenditure on infrastructure development, and GDP per capita are stationary at first difference while gross saving rate and inflation were found to be stationary at level. Also in Table 2B, social protection spending, fiscal capacity, debt service, real per capita expenditure on infrastructure development, inflation rate and GDP per capita were found to be stationary at first difference while gross saving rate were found to be stationary at level. This also implies a mixture of I(0) and I(1) variables which invariably explains the method of cointegration test to be adopted leads to the rejection of the null hypothesis that the variables has a unit root using the Philips-Perron unit root test. In Table 2C, almost all the variables are stationary at level form except real per capita expenditure on infrastructure development. Since the tests reveal that some of the variables in the model are I(1) while others I (0), it justifies the conduct of test for the existence of long run association among the variables. The test was conducted using Bound test approach and result presented in Table 3.

Table 3 Result of Bound Test (Cointegration of the Variables)

F-statistic	4.778396		
Critical Value Bounds			
Significance	0 Bound	1 Bound	Decision
10%	2.03	3.13	Cointegrated
5%	2.32	3.5	Cointegrated
2.5%	2.6	3.84	Cointegrated
1%	2.96	4.26	Cointegrated

Source: Authors Computation

The result in Table 3 shows that there is no long run association among the variables in the model.

Table 4 Result of ARDL Short-run and Long-run effects

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFC)	0.1640	0.1169	1.4030	0.1824
D(LNGDPPC)	1.9174	0.3995	4.7984	0.0003
D(LNDSNIG)	-0.1197	0.1441	-0.8305	0.4202
D(GSR)	0.0074	0.0132	0.5632	0.5822
D(LNRPCID)	-0.4716	0.3552	-1.3278	0.2055
D(INFL)	0.0303	0.0106	2.8525	0.0128
D(INST)	1.1689	0.7248	1.6125	0.1291
CointEq(-1)	-1.2845	0.2145	-5.9859	0.0000

Source: Authors Computation

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFC	0.1277	0.0925	1.3797	0.1893
LNGDPPC	1.4926	0.1797	8.3042	0.0000
LNDSNIG	-0.0932	0.1064	-0.8754	0.3961
GSR	0.0205	0.0132	1.5551	0.1422
LNRPCID	0.3837	0.2226	1.7233	0.1068
INFL	0.0236	0.0109	2.1683	0.0479
INST	1.5250	0.5745	2.6544	0.0189
C	-15.3185	2.7601	-5.5498	0.0001

Source: Authors Computation

Result in Table 4 indicates that in the short-run, most of the variables are not statistically significant except inflation rate and per capita gross domestic product, whereas in the long run, GDP per capita, inflation rate and institutional quality were statistically significant. Comparing the short run and long run, ARDL results indicates that in the short run, fiscal capacity has positive impact on social protection spending. However, the long run coefficient of 0.1277 shows an insignificant positive relationship with social protection spending. The result implies that increase in fiscal capacity increases of GDP growth by about 12.8%, on the average, holding other explanatory variables constant. It is important to note that the long run effect has no lagged-effect, in other words the effect of immediate past value of the variable does not contribute to current changes in social protection spending. The findings collaborates Murshed et al. (2017) that greater fiscal capacity robustly raises social protection spending. Moreover, GDP per capita has significant and positive impact on social protection spending both in the short run and long This conform to expectation that as GDP per capita improves over time, more investment will be encouraged in social protection and total output will increase. Again, the long run coefficient shows evidence of no lagged-effect as it is less than one. The estimated short run and long run coefficients of -0.1197 and -0.0932 respectively for debt service suggest that as the debt service increases, the amount of social protection spending reduces. Studies such as Murshed et al. (2017) testify that the burden of external debt servicing crowds-out spending on social protection spending. However, the estimated coefficients of gross savings rate has insignificant but positive impact on spending on social protection in the short run as well as long run periods indicates that an increase in gross savings rate will on average increase social protection spending about 0.744% and in the short-run and long run respectively. The estimated coefficient for real per capital expenditure on infrastructure development in the long run implies that rising capital expenditure in infrastructure will improve investment in social protection spending by 38%. But in the short run increase in real per capital expenditure on infrastructure development leads to 0.47% decrease in social protection spending. The institutional quality variables appear positive only in the long run with coefficient 1.5250, indicating that strengthening quality of institutions increases social protection by 1.52 units. Put differently, in the long run the degree of political right and civil liberty will further improve social sector spending. This finding is in line with literature that greater political right, civil liberty, rule of law and good governance promotes higher social sector spending.

Table 5 Result of Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision Rule
LNFC does not Granger Cause LNPS	24	9.67131	0.0013*	Reject H0
LNPS does not Granger Cause LNFC		0.49679	0.6162	Do not reject H0
INST does not Granger Cause LNPS	24	4.38121	0.0272*	Reject H0
LNPS does not Granger Cause INST		8.32772	0.0025*	Reject H0

Note: * $p\text{-value} < 0.05$

Source: Authors Computation

Result in Table 4 indicates that there is causality running from fiscal capacity to social protection spending. This means that fiscal capacity granger causes the amount spending on social protection. In the relationship between social protection spending and fiscal capacity, results further indicates that there no causality running from social protection spending to fiscal capacity implying that social protection spending does not granger causes the fiscal capacity. On the other hand, there exist bidirectional causality among institutional qualities and social protection spending. This implies that quality of institutions goes a long way in influencing spending in social protection and that any policy option that can stimulate changes in social protection expenditure can also be used to control changes in quality of institutions.

Conclusion

This study analyze reveal that fiscal capacity is an effective channel through which direct investment impact on social protection. This is evidenced by the positive but insignificant coefficient of total revenue on social protection spending. The burden of external debt services exerts negative impact on social sector spending while higher per capita income accentuates social sector expenditure. Taken together, these findings reinforce the intuition that countries with greater fiscal capacity can afford more social sector expenditure. Interestingly, institutional quality had positive and significant impact on social sector spending, suggesting that as far as the determinants of expenditure is concerned, quality of institutions is important. This is also evidence that supports the effect of total government revenue on welfare through investment in social protection. Thus, effective government spending through quality institutions attracts and encourages international donors in rendering assistance in social protection. There is therefore the need for government to establish quality and enduring institutions to improve the effectiveness of social protection spending. This reinforces the fact that fiscal capacity and institutional quality should not be treated in isolation.

Bibliography

1. Adkins, Moomaw, & Savvides, (2002). Institutions, freedom, and technical Efficiency, *Southern Economic Journal*, 92-108.
2. Aguzzoni, (2011). The concept of fiscal space and its applicability to the development of social protection policy in Zambia, Social Security Department, International Labour Office. Geneva: ILO, XIV: 1-15.
3. Alesina & Rodrik, (1994). Distributive policies and economic growth, *Quarterly Journal of Economics*, 109(2), 465-490.
4. Ali & Crain, (2001). Institutional distortions, economics freedom and growth. *Cato Journal*, 21, 415.
5. Belás, J., Korauš, M., Kombo, F., Korauš. A. (2016). Electronic banking security and customer satisfaction and in commercial banks. *Journal of Security and Sustainability Issues* 5(3), 411-422.
6. Besley & Persson, (2010). State capacity, conflict, and development, *Econometrica*, 78 (1), 1-34, <https://doi.org/10.3982/ECTA8073>
7. Buck, (2012), World economic forum: Recognizing the importance of social protection. Available from: <http://www.helpage.org/newsroom/latest-news/world-economic-forum-recognising-the-importance-of-social-protection/>.

8. Chiripanhura & Niño-Zarazúa, M. (2015). Aid, political business cycles and growth in Africa. *Journal of International Development*, 27, 1387-421, doi: 10.1002/jid.3188.
9. Cichon, ILO, & ISSA. (2004). *Financing social protection*. Geneva: ILO.
10. Dabla-Norris, Kochkar, Suphaphiphat, Ricka, & Tsounta, (2015). *Causes and consequences of income inequality: A global perspective*. IMF Staff Discussion Note. Washington, DC: International Monetary Fund.
11. Dincecco & Katz, (2016). State capacity and long-run economic performance, *Economic Journal*, 126(590), 189-218.
12. Dincecco & Prado, (2012). Warfare, fiscal capacity and performance. *Journal of Economic Growth*, 17(3), 171-203.
13. Dodlova & Giolbas, (2016). Regime type, inequality and redistributive transfers in developing countries. Paper presented at the UNU-WIDER Symposium on Social Protection, Mexico City, 8-10
14. Engle & Granger, (1987), Co-integration and error correction: Representation, estimation, and testing, *Econometrica*, 55 (2), 251-276, <https://doi.org/10.2307/1913236>
15. Dodlova & Lay, (2016). Political regimes and pro-poor transfers in developing countries. Paper presented at the UNU-WIDER Symposium on Social Protection, Mexico City, 8-10.
16. Gassman, Mohnen, & Vinci, (2016). Institutional factors and people's preferences in social protection. UNU-MERIT, Working Paper 2016-003. Maastricht: UNU-MERIT.
17. Gebregziabher & Niño-Zarazúa, (2014). Social spending and aggregate welfare in developing and transition economies, UNU-WIDER Working Paper 2014/082. Helsinki: UNU-WIDER.
18. Grogan & Moers, (2001). Growth empirics with institutional measures for transition countries. *Economic Systems*, 25(4), 323-344.
19. Gwartney, Holcombe, & Lawson, (2004). Economic freedom, institutional quality and cross-country differences in income and growth. *Cato Journal*, 24, 205.
20. Islam, (2012). Quality of civil administration and economic growth: A threshold analysis. *The Journal of Developing Areas*, 46(2), 315-350.
21. Jutting & Prizzon, (2013). Social cohesion, does it matter for growth and development, in Katia Bender, Markus Kaltenborn and Christian Pfleider (ed.) *Social protection in developing countries: Reforming Systems*. Routledge.
22. Khan & Khawaja, (2011). Predation, institutional quality and economic growth. *The Pakistan Development Review*, 809-820.
23. Kilic, (2011) Testing for co-integration and nonlinear adjustment in a smooth transition error correction model, *Journal of Time Series Analysis*, 32, 647-660, <http://dx.doi.org/10.1111/j.1467-9892.2011.00722.x>
24. Knack & Keefer, (1995). Institutions and economic performance: cross-country tests using alternative institutional indicators, *Economics & Politics*, 7 (3), 207-227
25. Le, (2009). Trade, remittances, institutions, and economic growth. *International Economic Journal*, 23(3), 391-408.
26. Mathers & Slater, (2014). *Social protection and growth: Research synthesis*. Commonwealth of Australia.
27. Mideros, A., Gassmann, F., & Mohnen, P. (2015). Estimation of rates of return on social protection: ex ante microsimulation of social transfers in Cambodia, *Journal of Development Effectiveness*, 0(0), 1-20.
28. Mura, L., Marchevska, M., & Dubravaska, M. (2018). Slovak Retail Business Across Panel Regression Model. *Marketing and Management of Innovations*, 4, pp. 203-211.

29. Murshed, Badiuzzaman & Pulo, (2017). Fiscal capacity and social protection expenditure in developing nations (No. 2017/60). WIDER Working Paper.
30. Ostry, Berg, & Tsangarides, (2014). Redistribution, inequality and growth. IMF Staff Discussion Note. Washington, DC: International Monetary Fund.
31. Robinson & Acemoglu, (2006). Economic origins of dictatorship and democracy. Cambridge, UK, Cambridge University Press.
32. Rodrik, (1999). Where did all the growth go? External shocks, social conflict and growth collapses, *Journal of Economic Growth*, 4(4), 385-412.
33. Skocpol, (1987). A society without a state? Political organization, social conflict, and welfare provision in the United States. *Journal of Public Policy* 7(4), 349-371.
34. Stoesz, (1999), *Social work*, 34 (2), 101-107
35. Tavares & Wacziarg, (2001). How democracy affects growth, *European Economic Review*, 45(8), 1341-1378.
36. Thome, Filipinski, Kagin, Taylor & Davis, (2013). Agricultural spillover effects of cash transfers: What does LEWIE have to say? *American Journal of Agricultural Economics*, 95(5), 1338-1344.
37. Tirivayi, Knowles, & Davis, (2016). The Interaction between social protection and agriculture: A review of evidence. *Global Food Security*, 10, 52-62.
38. Ulubasoglu & Doucouliagos, (2004). Institutions and economic growth: A systems approach, In *Econometric Society, Australasian Meetings Paper* 63.
39. Vijayaraghavan & Ward, (2001). Institutions and economic growth: Empirical evidence from a cross-national analysis. *Clemson University*.
40. World Bank, (2001). Social protection sector strategy: From safety net to springboard. Washington, D.C.: World Bank.
41. World Bank, (2012). Managing risk, promoting growth: Developing systems for social protection in Africa. Washington, D.C.: World Bank.
42. World Health Organization, (2015). World Health Statistics, World Health Organization.

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GRADUATES' EMPLOYABILITY SKILLS IN BUSINESS MANAGEMENT AND SUCCESS INITIAL CAREER

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Abstract

Employability skills are developed during their studies and improved during the internships. Graduates should have them to secure their future career. The objectives of this research are to examine the main factors of employability skills in business management and to investigate the internship exposure associated with success initial career. The 47 samples consist of graduates in business management study program from 2017 until 2018 in Higher Education Institution. Exploratory Factor Analysis is applied to observe the permanent factors of employability skills. Furthermore, Chi-Square is implemented to examine the internship exposure associated with success initial career. The result argues that the employability skills constructed by core competency, communication, teamwork, and problem-solving. The experiences in an internship may associate with the upcoming profession.

Key words: *Higher Education, Employability Skills, Internship, Initial Career, Factor Analysis*

JEL Classification: *I23, M53*

Introduction

Graduates in Business Management have prepared specific competency to enter the labour market in order to acquire their first job after completing their study in order to reduce unemployment Greblikaite, Sroka, and Gerulaitiene (2016). They may obtain particular competency during the education process in their study then they can enhance their competency by doing an internship. Some researchers argue that competency has an identical sense with employability skills. Employability skill of a graduate can be defined as a set of ability that creates he/she more securely gets an occupation which satisfied and appropriates with his or her choice based on the background of education standard. Furthermore, employability skills consist of three skills in terms of knowledge, skills, and attitudes (Brewer, 2013; Dacre Pool & Sewell, 2007; Meyer, 2018; Wickramasinghe & Perera, 2010).

Based on the main goal of the Higher Education Institution (HEI) in preparing skilled graduates by empowering them with employability skills. HEI may set up the integrated process from designing the curriculum, assessment, evaluation, and internship program in a systematic path. The central concept of developing employability may correlate with the idea that higher qualified graduates have the

greater opportunity to secure their employment (Jacques De Jongh & Meyer, 2017; Ranki, Vrbka, Valaskova, & Olah, 2018). HEI should provide the specific knowledge, skills, and attitude to the students. One should also mention the vital role of pedagogical innovations as tools in successful international teaching and learning and in successful communication between teachers and students (Radin & Riashchenko, 2017). The specific knowledge refers to the generic skills in specific study discipline, and which can potentially develop their generic skills. To provide this, HEI considers providing classical class and practical laboratory. Besides that, the HEI also must support the graduates with job experiences. In supporting this case, the students must do an internship to sharpen their competency and get the first experience from the workplace. Furthermore, the evaluation is implemented to measure the competency in last year study. Finally, the students will be trained to compose best curriculum vitae, interview tips, and soft skills (Dacre Pool & Sewell, 2007). However, the fast changing in the labour market condition and increase interest in employability skills may make difficulties to the vocational education to reach labour standard requirements. In addition, the companies may search for highly skilled graduates who can react to the rapid transformation and complex requirements in the modern workplace (Boahin & Hofman, 2013).

In the connection between employability and job opportunity, employability supports the ability to get initial employment, to maintain the employment and to adapt between jobs and regulations within the workplace to meet the job requirements (Wickramasinghe & Perera, 2010). A source of skilled graduates who are readily entering the workplace is an important way to link numbers of graduate HE and match with the labour demand of Industries. On consequence, the gaps in demand of the companies and supply employable graduates of higher education may decrease in the future. It happens obviously that the HEI developing countries have challenges to provide graduates in line with the quick uprising and multifarious skills required by the companies. Besides that, higher education has to make a breakthrough in order to link and match the competency's graduates with the demand of companies.

To highlight this important goal, HEI has a significant role to develop employability skills of the graduates entering the workplace. The higher level of employability skills may result in the higher opportunity of a successful career. Consequently, the HEI should prepare graduates to be more competitive in the labour market (Moravcikova, Krizanova, Klietkova, & Rypakova, 2017; Sewell & Dacre Pool, 2010; Stverkova, Pohludka, Kurowska-Pysz, & Szczepańska-Woszczyna, 2018). Other prevailing evidence, the HEI also need to measure the employability skill of graduates. The appropriate time to identify the level of employability skills is when the students undertaking the internship (Connor & Shaw, 2008; Neelam et al., 2018). Internship program supports strongly to develop employability skills' and even skills to become entrepreneurial graduates (Meyer, 2017). Studies reveal the advantages and disadvantages gained by interns. According to beneficial impacts, interns may get practical work exposures (Kapareliotis, Voutsina, & Patsiotis, 2019), less nervous about entering the workplace, more confident, and connection between theories and their application. However, the based on the drawbacks sides, interns may have difficulties to adapt in the workplace, performing under the capabilities, treated like regular staff, not suitable job expectation, and not well be supervised (Kapareliotis et al., 2019; Neelam et al., 2018).

Graduates involving in the internship would develop their employability skills (Callanan & Benzing, 2004) then the graduates have a beneficial to secure their first job quicker (Knouse & Fontenot, 2008). In connection the effect of internship

experiences on the better opportunity for first employment, some studies have revealed that students had an internship exposure would get better position for employment (Gault, Leach, & Duey, 2010). Besides that, internship experiences play an important role to develop early preparation and to succeed in entering the job market. The time when doing an internship is suggested as the most appropriate time for assessing employability skills and practical learning. After involving internship program, fresh graduates may have successful job indicated by extrinsic and intrinsic success (Gault, Redington, & Schlager, 2000). In addition, most business graduates who had involved in internships may found jobs immediately comparing to most graduates without having internships (Knouse, Tanner, & Harris, 1999). Furthermore, JJ De Jongh, Meyer, and Meyer (2016) opine that government support (Lakner et al., 2018; Sadaf, Oláh, Popp, & Máté, 2018) in the form of tax incentives can also contribute to businesses supplying more internships.

The suitable time to measure the employability skills of graduates is when doing an internship. Scholars also support the previous statement that setting internships in business school to develop competency, attitude, and knowledge is considered as a significant element of higher education (Kapareliotis et al., 2019). The internship period is suitable for describing the employability skills, identifying the practical gap between classical simulation class and real workplace. It takes time to examine the employability skills until getting an initial job (Neelam et al., 2018). The research deals with the question, firstly, How does the scientific method to measure the level employability skills of graduates in Management and Business? Secondly, How is the correlation between internship experience and the initial success career of the graduates?. This research is an important part to analyze the graduates' skills in the last year in their study to obtain get success job in early careers. Based on the research questions, the objectives of this research are first, to examine the main factors of employability skills in business and management, and second, to analyze the correlation internship exposure on success initial career.

The research would construct the employability skills of graduates in Business and Management study program based on the previous empirical results and theoretical perspective. Then, it will examine the level of employability skills and evidence the correlation between the internship experience and success initial career. Finally, it will provide the empirical evidence and implication of the study.

Theoretical background

Citing references from scholars, this part defines the employability skills of business management for graduates in HEI. The definition starts from the general to specific definition. In general, employability skills refer to the knowledge, skills, and attitudes required by the industries (Dacre Pool & Sewell, 2007). It is including communication skills, teamwork, problem-solving, business ethics. Employability also refers to the ability to work properly and structured (Blanchard & Thacker, 2007; Jackson & Chapman, 2012), supported with technological implementation skills, efficacy, confidence to support a specific job (Hamel & Prahalad, 1994), self-awareness, critical thinking, professionalism, and problem solving (Heijke, Meng, & Ris, 2003; Jackson & Chapman, 2012; Knouse & Fontenot, 2008) emphasized skills namely teamwork, verbal communication, written communication (Griffin & Annulis, 2013).

Employability skills used in this research refers to skills as key competencies, knowledge knows how, and attitude in order to work in a workplace as part of an internship program. The source comes from different types of terminology namely :

- ASEAN: Employability skills
- Australia: Key competencies/employability skills/generic skills
- European/OECD: Key competencies
- ILO: Core skills for employability
- United States: Basic skills, necessary skills, workplace know-how
- United Kingdom: Core skills, key skills, common skills (Brewer, 2013)

Core skills for employability in Business Management in this research are for handling export import particularly and business process in general in the domestic and or international company. The foundations to construct employability skills in this research are described in table 1.

Table 1 Employability Skills of Business and Management

No	Broad skill category	Abilities	Codes
1	Core Competencies (CC)	1. To understand the business process in a company 2. To prepare documents in business process 3. To archive business documents 4. To apply database/application software in business process	1. CC1 2. CC2 3. CC3 4. CC4
2	Communication Skills (C)	1. To have good English communication skills to support the business process. 2. To communicate with the supervisor to receive and complete the tasks 3. To communicate with other staff to finish the assignments 4. To coordinate with other staff to complete the jobs	1. C1 2. C2 3. C3 4. C4
3	Teamwork Skills (T)	1. To interact with co-workers 2. To commit working in a company based on company culture 3. To work together with other staffs in a company 4. To help other staff in completing a job in the workplace	1. T1 2. T2 3. T3 4. T4
4	Problem Solving Skills (P)	1. To think creatively in doing the job 2. To complete the job independently 3. To adapt to the new workplace 4. To have the initiative to get the job done	1. P1 2. P2 3. P3 4. P4

Source: (Brewer, 2013; Brinia, Stavropoulos, & Athanasoula-Reppa, 2018; Chhinzer & Russo, 2018) adapted to support this research.

Some scholars found the advantages of doing an internship with the graduates. Internship may offer benefits to the trainees to apply the knowledge during their studies, to obtain realistic exposure of work, clear perspective in workplace (Knouse & Fontenot, 2008) to adopt professional attitude in workplace, to develop their competencies and skills (El-Temtamy, O'Neill, & Midraj, 2016), and to assist in choosing future occupations after graduation (Pineda-Herrero, Quesada-Pallarès, Espona-Barcons, & Mas-Torelló, 2015; Sanahuja Velez & Ribes Giner, 2015). The internship may contribute to improving the graduates' competencies, to acquire a new perspective on a new career in the workplace (Dajnoki, Máté, Fenyves, & Kun,

2017). In addition, the company also offers a suitable position or job to the graduate because it knows the skills of the candidate (Sanahuja Velez & Ribes Giner, 2015; Zhao & Liden, 2011).

It is obviously argued that graduates who involved in an internship may obtain an opportunity to secure future jobs promptly (Gault et al., 2010; Knouse & Fontenot, 2008). The success of the job consists of two perspectives namely extrinsic and intrinsic. Intrinsic success refers to positive feelings of satisfaction with colleagues, supervisors, and the job overall. In addition, the extrinsic success of job refers to salary, benefits, and compensation (Knouse et al., 1999). Success initial career refers to the salary and waiting time after graduation. The success initial career in this research is constructed from time to get the first job after graduation and the salary.

Based on the literature review, this study figures out the two questions, firstly, How does the scientific method to measure the level employability skills of graduates in Management and Business?. Next, How is the association level between internship experience and the initial success career of the graduates. Then, this study tests the internship exposure associated with the first success occupation.

Material and Methods

Sample

The samples utilized in this research included 47 graduates of 72 graduates involved in the internship program. All of the samples were graduates students in international business management study program, in the Business Administration Department at Politeknik Negeri Semarang. There were 67 respondents submitting back the surveys but there were 20 missing data. The assessment of employability skills was examined when the graduates did an internship in the final semester until they report their first job after graduation. The assessor was the supervisor of graduates in the workplace. The period time of collecting data was two years from 2016 until 2018 when the students conducted an internship in the last semester then they would report their initial job after graduation.

Variables and Measurement

This study examines the employability skills and successful job. The employability skills are constructed by four indicators namely core competencies, communication, teamwork, and problem-solving as well stated in table 1. Each factor is constructed by four observed variables. The perceived value of employability skills was measured through ten-point bipolar scale items. 1 point scale refers to not competent and 10 depicts scale represent competent. The questionnaire has passed the validity test in this case Pearson correlation values exceed than 0.288. In addition, it also has required the reliability in which all the Cronbach's alpha are above than 0.70.

Furthermore, the success initial career is constructed based on the first salary, waiting time to obtain an initial job, and types of the first workplace. The salary is classified based on the range of salary. It is used to make the graduates pleased to state his/her first salary. Waiting time depicts the interval months from graduation until getting the first job. In addition, the types of the initial workplace are categorized into a domestic company, international manufacturer, and government institution.

Tools of Analysis

The data obtained is analyzed with Statistic Descriptive, Chi-Square, and Exploratory Factor Analysis (EFA).

Statistic descriptive is applied to describe employability skills in term of mean, modus, minimum, maximum, frequency distribution, and index. Index refers to the Index Three Box Method (ITB) which describes the level of competency of employability skills in third categories namely low (10-30), medium (40-70), and high (70 – 100). Chi-Square is applied to examine whether two variables in a nominal scale are associated (Field, 2009).

EFA is used to check or confirm particular indicators in the structure of each variable. In addition, this method will be used to examine each indicator in each variable before the variables will be tested to get a better fit to the data. Consequently, the result of EFA may provide the best model in order to be interpreted as a whole model. (Howitt & Cramer, 2011). If goodness-of-fit is adequate, the model argues for the plausibility of postulated relations among variables; if it is inadequate, the tenability of such relations is rejected. If goodness-of-fit is adequate, the model argues for the plausibility of postulated relations among variables; if it is inadequate, the tenability of such relations is rejected. In addition, the model fit in EFA is measured by chi-square and The Comparative Fit Index (CFI) also compares the hypothesized model with a null model but is a normed index in that its values are normed to vary between 0 and 1. The value of CFI is adjacent to 1 so it indicates a good or acceptable fit. However, if the value is closed to 0 so it indicates an unacceptable fit. (Byrne, 2016; Field, 2009; Howitt & Cramer, 2011).

Results and Debate

Employability Skills

The internship program is an obligatory for each student as part of their full training in his/her study. The training period program lasts three months in a domestic or international company. The students conducted the training program in types of division in the domestic and international companies as depicted in table 2.

Table 2 Workplace of Students Performing Internship

Division	Internship Company		Total
	Domestic	International	
Export-Import	2	13	15
Administration	8	1	9
Operation	3	5	8
Warehouse	3	5	8
Marketing	2	1	3
Purchasing	0	2	2
Finance	0	1	1
Human Resource	1	0	1
Total	19	28	47

Source: Primary Data, analysed in 2019. n = 47.

About sixty per cent of students conducted an internship at international companies and others did at domestic one. Nearby thirty-two per cent of students involved in work training in the export-import division at a domestic and international company. The second division in order array was administration, then, operation and warehouse division were as similar as a number in the third order. The other students also took an internship in marketing, purchasing, finance, and human resource division.

During involving the internship program, the employability skills of student would be assessed by their supervisors as part of evaluation progress. The employability skills in the assessment consist of four factors namely core competency skills, communication, teamwork, and problem-solving (Brewer, 2013; Brinia et al., 2018; Chhinzer & Russo, 2018). The assessment from the supervisor is used to depict the employability skills of the students. The assessment of employability skills when the students conducted internship are described in table 3.

Table 3 Employability Skills Assessment on Student

No	Employability Skills	Mean	Min	Max	Index	Interpretation
1	Core Competencies					
	CC1	8.23	5	10	83.04	High Competent
	CC2	7.96	6	10	78.30	High Competent
	CC3	8.30	6	10	81.70	High Competent
	CC4	8.11	7	10	81.09	High Competent
	Average Core Competencies				81.03	High Competent
2	Communication					
	C1	7.89	6	10	78.94	High Competent
	C2	8.36	7	10	91.67	High Competent
	C3	8.72	6	10	87.23	High Competent
	C4	8.17	6	10	77.87	High Competent
	Average Communication				83.93	High Competent
3	Teamwork					
	T1	8.26	6	10	82.55	High Competent
	T2	8.34	6	10	87.86	High Competent
	T3	8.26	6	10	82.55	High Competent
	T4	8.30	6	10	82.98	High Competent
	Average Teamwork				83.77	High Competent
4	Problem Solving					
	P1	8.13	6	10	81.28	High Competent
	P2	8.15	6	10	81.49	High Competent
	P3	8.49	6	10	84.89	High Competent
	P4	7.87	6	10	78.72	High Competent
	Average Problem Solving				81.60	
	Average Employability Skills				82.58	High Competent

Source: Primary Data, analysed in 2019. n = 47.

Core competencies of students are categorized as high competent as well as communication, teamwork, and problem-solving skill. In general, the employability skills of students in business management are highly competent.

After describing the level of employability skills, Exploratory Factor Analysis (EFA) is applied to investigate the model fit and permanent factors of employability skills. Values of Chi-Square and CFI are applied to examine the good fit of the EFA model. Furthermore, the loading factor is likewise used to confirm that the abilities as the permanent factor of employability skills. The first step is to examine the good fit model.

Table 4 Chi-Square of Factor Analysis

Statistic Indicators	Value
Chi-Square (χ^2)	222.832
Degrees of Freedom	98
Probability Level χ^2	0.0000
CFI	0.779

Source: Primary Data, analysed in 2019. n = 47.

Chi-Square (χ^2) which is stated in Table 4 describes that the unobserved variables constructed by observed variables are unlikely not associated with each other because the probability significant level is 0.0000 under 0.05. CFI value is about 0.8 thus it describes that the model is a good fit (Kahn, 2006; Rigdon, 1996). It represents that core competency, communication, teamwork, and problem-solving construct well the employability skills in management and business. This study also contributes empirical evidence to support indicators namely core competencies, communication, teamwork, and problem-solving skills of employability skills (Brewer, 2013; Brinia et al., 2018; Chhinzer & Russo, 2018)

After examining the best fit of a model, it is necessary to examine that observed variables (factors) can construct the unobserved variables. The value of loading factors each observed variable represent the indicators of each factor permanent or not permanent. The role thumb of permanent factor is the loading factor above 0.5 (Kahn, 2006)

The result of the loading factor in Exploratory Factor Analysis is illustrated in table 5.

Table 5 Loading Factor Analysis of Employability Skills Model

Employability Skills	Codes of Indicator	Loading Factor	Interpretation
Core Competency	CC1	0,341	Not permanent
	CC2	0,830	Permanent
	CC3	0,313	Not permanent
	CC4	0,670	Permanent
Communication	C1	0,717	Permanent
	C2	0,816	Permanent
	C3	0,260	Not permanent
	C4	0,808	Permanent
Teamwork	T1	0,884	Permanent
	T2	0,755	Permanent
	T3	0,890	Permanent
	T4	0,849	Permanent
Problem Solving	P1	0,814	Permanent
	P2	0,712	Permanent
	P3	0,745	Permanent
	P4	0,834	Permanent

Source: Primary Data, analysed in 2019. $n = 47$.

Based on the result analysis in table 5, it obviously concludes that the permanent factors of core competency are the ability to prepare documents in business process and to operate database and software application to support the business process. Software application in this term refers to the export-import handling, warehouse management system, and administration module related to support the business process. Afterwards, the perpetual factors of communication consist of three abilities namely to speak English fluently, to communicate with the supervisor to receive and complete the assignment and to coordinate with other staff to finish the jobs. Teamwork and problem-solving have as well four factors constructing them. Teamwork has four factors including abilities explicitly to work together, to interact with co-workers, to help other staff in the workplace, and to commit working in the company. Lastly, the problem solving has similarly four factors comprising abilities namely to have the initiative to finish the job, to think creatively, to adapt in the workplace, and to complete the job independently. These results support the findings from previous research explicitly Brewer (2013), Brinia et al. (2018), Chhinzer and Russo (2018), and El-Temtamy et al. (2016).

Based on the result, the Higher Education Institution should emphasize to provide practical subject to use the current database and software application at least as similar as used in the internship workplace. It is a beneficial implication because the graduates would have a similar perspective of workplace application on the campus (El-Temtamy et al., 2016). HEI also may develop the soft skill of students in order to improve communication skills, teamwork, and problem-solving in business simulation as a subject before doing an internship in the real workplace.

Extrinsic Job Success

The students performed an internship program for three months at eight semesters during the final year of their study. Furthermore, they would compose an undergraduate thesis based on the topic at internship workplace. Finally, they graduated as an International Business Management Bachelor. The course program would trace their first job after graduation. The success of initial employment refers to the concept of extrinsic job success in term of waiting time, first wage and type of workplace (Gault et al., 2000).

Graduates secured the initial career within four months on average. The standard deviation describes graduates required between two and five months in order to secure the first job. They secured the earliest job fast only one month in minimum and the seven months in maximum. This result supports the results of previous research that the graduates may secure the opening job after completing internship program (Gault et al., 2010; Knouse & Fontenot, 2008).

Table 6 First Salary and Workplace Types of Graduates

Salary in Indonesian Rupiah (IDR)	Types of Workplace			Total
	Domestic	International	Government Institution	
2 000 000 – 4 000 000	16	15	2	33
4 000 000 – 6 000 000	5	0	5	10
6 000 000 – 8 000 000	2	0	0	2
more than 8 000 000	0	2	0	2
Total	23	17	7	47

Source: Primary Data, analysed in 2019. *n* = 47.

Approximately seventy per cent of fresh graduates secured the first career at domestic companies and international companies as around 16 people in similar number, and 2 graduates secured career at a government institution. They obtained the salary from two until four million IDR. Second order, around twenty-one per cent of graduates obtained initial occupation at domestic and government institution in an exactly five people in number with accepting salary between four and six million IDR. Finally, the graduates as a similar number in figure achieved the first career in domestic and international companies. The graduates working in international company obtain salary higher than paid in a domestic corporation.

Table 7 First Position and Workplace Types of Graduates

First Position	Domestic	International	Government Institution	Total
Operation Staff	5	3	0	8
Customer Service Staff	5	1	1	7
Analyst Staff	0	0	6	6
Marketing Staff	2	4	0	6

Administration Staff	5	0	0	5
Financial Staff	4	1	0	5
Export Import Staff	0	2	0	2
Purchasing Staff	0	2	0	2
Warehouse Staff	0	2	0	2
Account Manager	0	1	0	1
HRD Staff	0	1	0	1
Logistic Staff	0	1	0	1
Relation Officer	1	0	0	1
Total	22	18	7	47

Source: Primary Data, analysed in 2019. n = 47.

Table 7 illustrates the first position of graduates in various types of workplace. Eight graduates have the first position as operation staff at domestic and international companies. Seven graduates secured a position as CSO in any types of workplaces. Six graduates achieved a position as analyst staff at a government institution, as similar in a number of graduates secured marketing staff in a domestic and international corporation. Five graduates as respectively achieved a position as administration and financial staff at a domestic and international company. In descending number, graduates worked for as export-import staff, purchasing staff, and warehouse staff as respectively in 2 people. Finally, one graduate secured a position as an account manager, HRD staff, logistics staff, and relation officer as correspondingly 1 person. In this evidence, the graduates may achieve the perspective of occupation types in the workplace so they may select their future career after graduation. It relates to the previous research results (Pineda-Herrero et al., 2015); Sanahuja Velez and Ribes Giner (2015)

To conclude the finding, the internship exposure has correlated with the first career of graduates and choice of future career (Knouse & Fontenot, 2008; Sanahuja Velez & Ribes Giner, 2015). This research examines the association level of the experience as staff in the internship workplace with the initial career. The result of chi-square analysis which examines the degree correlation between internship exposure and first career is depicted in table 8.

Table 8 Result of Associated Internship Exposure and First Career

Statistic	Value	df	Sig. (2-sided)
Pearson Chi-Square	60.670 ^a	84	.974
Likelihood Ratio	56.557	84	.991

Source: Primary Data, analysed in 2019. n = 47.

The Pearson Chi-Square is 0.974 which concludes it is significant. The significant describes that there are no differences between experiences as staffs in internship and first career of graduates. This finding reflects that graduates had the experience to work as staff in the internship program then they may secure the first

career as an officer which is not different from the position in the internship program. This result support internship experience is likely correlated with the first careers of graduates and choice of forthcoming occupation (Knouse & Fontenot, 2008; Sanahuja Velez & Ribes Giner, 2015).

Conclusion

This research suggests that employability skills of graduates in management and business constructed by four indicators namely core competency, communication, teamwork, and problem-solving as a good model. In specific indicators based on loading factors, abilities to archive the business documents and operating supporting software in the business process are permanent factors of core competency. Fluency in English, communication skill with the supervisor, coordination talent with co-workers indicates a permanent factor of communication skill. At that point, abilities to collaborate, to interact, to assist colleagues, and to commit working are the eternal factor of teamwork skill. In conclusion, capabilities in taking initiative, to think brightly, to adapt in the workplace, and to finish the job independently are the permanent factors of the problem-solving skill. The experiences involving an internship program may sharpen the employability skills and secure future career fast for graduates. This research may contribute the method to assess the level of employability skills of graduates in Higher Education Institution, particularly in Business and Management course program. The Business and Management program should emphasize practical class namely business simulation before the students conduct the internship program. The upcoming suggestion that the duration of the internship should be extended at least for six months in order to improve the level of employability skills of graduates. In the upcoming research, it may analyse the impact of employability skills of a successful career in the intrinsic framework. It may be possible to analyse the perspective of employability skills in market labour.

Bibliography

1. Blanchard, P., & Thacker, J. (2007). *Effective training: Systems, strategies and policies*. In: Pearson Education, Upper Saddle River, NJ.
2. Boahin, P., & Hofman, A. (2013). A disciplinary perspective of competency-based training on the acquisition of employability skills. *Journal of Vocational Education & Training*, 65(3), 385-401.
3. Brewer, L. (2013). *Enhancing youth employability: What? Why? and How? Guide to core work skills*: ILO.
4. Brinia, V., Stavropoulos, P., & Athanasoula-Reppa, A. (2018). Trainees' perception of vocational training institutes degree apprenticeship: An empirical approach. *Higher Education, Skills and Work-Based Learning*, 8(4), 365-375.
5. Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*: Routledge.
6. Callanan, G., & Benzing, C. (2004). Assessing the role of internships in the career-oriented employment of graduating college students. *Education+ Training*, 46(2), 82-89.
7. Chhinzer, N., & Russo, A. M. (2018). An exploration of employer perceptions of graduate student employability. *Education+ Training*, 60(1), 104-120.

8. Connor, H., & Shaw, S. (2008). Graduate training and development: current trends and issues. *Education+ Training*, 50(5), 357-365.
9. Dacre Pool, L., & Sewell, P. (2007). The key to employability: developing a practical model of graduate employability. *Education+ Training*, 49(4), 277-289.
10. Dajnoki, K., Máté, D., Fenyves, V., & Kun, A. (2017). Deconstructing Attitudes towards Immigrant Workers among Hungarian Employees and Higher Education Students. *Sustainability*, 9(9), 1639.
11. De Jongh, J., & Meyer, N. (2017). An investigation into the factors affecting young people's entrepreneurial inclination: the case of selected areas in South Africa. *International Journal of Business and Management Studies*, 9(2), 69-86.
12. De Jongh, J., Meyer, N., & Meyer, D. (2016). Perceptions of local businesses on the Employment Tax Incentive Act: the case of the Vaal Triangle region. *Journal of Contemporary Management*, 13(1), 409-432.
13. El-Temtamy, O., O'Neill, K. K., & Midraj, S. (2016). Undergraduate employability training and employment: a UAE study. *Higher Education, Skills and Work-Based Learning*, 6(1), 100-115.
14. Field, A. (2009). *Discovering statistics using SPSS*: Sage publications.
15. Gault, J., Leach, E., & Duey, M. (2010). Effects of business internships on job marketability: the employers' perspective. *Education+ Training*, 52(1), 76-88.
16. Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: are they related? *Journal of marketing education*, 22(1), 45-53.
17. Greblikaite, J., Sroka, W., & Gerulaitiene, N. (2016). Involving young people in Polish and Lithuanian social enterprises by fostering entrepreneurial skills and abilities as entrepreneurial opportunity at university. *Entrepreneurial Business and Economics Review*, 4(3), 131.
18. Griffin, M., & Annulis, H. (2013). Employability skills in practice: the case of manufacturing education in Mississippi. *International Journal of Training and Development*, 17(3), 221-232.
19. Hamel, G., & Prahalad, C. (1994). *Competing for the future: Breakthrough strategies for seizing control of your industry and creating the markets of tomorrow* (Harvard business school press). Cambridge, MA.
20. Heijke, H., Meng, C., & Ris, C. (2003). Fitting to the job: the role of generic and vocational competencies in adjustment and performance. *Labour economics*, 10(2), 215-229.
21. Howitt, D., & Cramer, D. (2011). *Introduction to SPSS statistics in psychology: for version 19 and earlier*: Pearson.
22. Jackson, D., & Chapman, E. (2012). Non-technical skill gaps in Australian business graduates. *Education+ Training*, 54(2/3), 95-113.
23. Kahn, J. H. (2006). *Factor analysis in counseling psychology research, training, and practice: Principles, advances, and applications*. The counseling psychologist, 34(5), 684-718.
24. Kapareliotis, I., Voutsina, K., & Patsiotis, A. (2019). Internship and employability prospects: assessing student's work readiness. *Higher Education, Skills and Work-Based Learning*. doi:<https://doi.org/10.1108/HESWBL-08-2018-0086>
25. Knouse, S. B., & Fontenot, G. (2008). Benefits of the business college internship: A research review. *Journal of Employment Counseling*, 45(2), 61-66.
26. Knouse, S. B., Tanner, J. R., & Harris, E. W. (1999). The relation of college internships, college performance, and subsequent job opportunity. *Journal of Employment Counseling*, 36(1), 35-43.

27. Lakner, Z., Kiss, A., Merlet, I., Oláh, J., Máté, D., Grabara, J., & Popp, J. (2018). Building Coalitions for a Diversified and Sustainable Tourism: Two Case Studies from Hungary. *Sustainability*, 10(4), 1090.
28. Meyer, N. (2017). South Africa's youth unemployment dilemma: Whose Baby is it anyway? *Journal of Economics and Behavioral Studies*, 9(2).
29. Meyer, N. (2018). South African female entrepreneurs' intention to remain in business. North-West University,
30. Moravcikova, D., Krizanova, A., Klietkova, J., & Rypakova, M. (2017). Green Marketing as the Source of the Competitive Advantage of the Business. *Sustainability*, 9(12), 2218.
31. Neelam, N., Bhattacharya, S., Kejriwal, V., Bhardwaj, V., Goyal, A., Saxena, A., Choudaha, G. (2018). Internship in a business school: expectation versus experience. *Higher Education, Skills and Work-Based Learning*, 9(1), 92-106. doi:<https://doi.org/10.1108/HESWBL-03-2018-0025>
32. Pineda-Herrero, P., Quesada-Pallarès, C., Espona-Barcons, B., & Mas-Torelló, Ó. (2015). How to measure the efficacy of VET workplace learning: the FET-WL model. *Education+ Training*, 57(6), 602-622.
33. Radin, M. A., & Riashchenko, V. (2017). Effective pedagogical management as a road to successful international teaching and learning. Paper presented at the Forum Scientiae Oeconomia.
34. Ranki, C., Vrbka, J., Valaskova, K., & Olah, J. (2018). Objectifying Women's Bodies in the Workplace: Gender-Based Misconduct, Egregious Sexual Pressure, and Misogynistic Practices. *Contemporary Readings in Law and Social Justice*, 10(2), 71-77.
35. Rigdon, E. E. (1996). CFI versus RMSEA: A comparison of two fit indexes for structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 3(4), 369-379.
36. Sadaf, R., Oláh, J., Popp, J., & Máté, D. (2018). An investigation of the influence of the worldwide governance and competitiveness on accounting fraud cases: A cross-country perspective. *Sustainability*, 10(3), 588.
37. Sanahuja Velez, G., & Ribes Giner, G. (2015). Effects of business internships on students, employers, and higher education institutions: A systematic review. *Journal of Employment Counseling*, 52(3), 121-130.
38. Sewell, P., & Dacre Pool, L. (2010). Moving from conceptual ambiguity to operational clarity: employability, enterprise and entrepreneurship in higher education. *Education+ Training*, 52(1), 89-94.
39. Stverkova, H., Pohludka, M., Kurowska-Pysz, J., & Szczepańska-Woszczyna, K. (2018). Cross-border entrepreneurship in Euroregion Beskydy. *Polish Journal of Management Studies*, 18(4), 324-337.
40. Wickramasinghe, V., & Perera, L. (2010). Graduates', university lecturers' and employers' perceptions towards employability skills. *Education+ Training*, 52(3), 226-244.
41. Zhao, H., & Liden, R. C. (2011). Internship: A recruitment and selection perspective. *Journal of Applied Psychology*, 96(1), 221.

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THE CURRENT AND FUTURE SHAPE OF THE EUROPEAN UNION'S COMMON AGRICULTURAL POLICY

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Abstract

The Common Agricultural Policy of the European Union forms conditions and defines targets for agricultural entities operating on its territory. Through the support system created by the I. and II. pillar of the Common Agricultural Policy subsidizes agricultural entities. The subsidy policy affects the pension situation, business efficiency and rural development. The European Union is responding to new challenges. The European Commission has presented a proposal for the Common Agricultural Policy for the period 2021-2027, changes in its implementation are discussed at the national level of the individual Member States. The aim of this article is to define the current position of implementation of the Common Agricultural Policy and direction for the next period 2021-2027. In this article are used data from the European Union's fact sheets.

Key words: *common agricultural policy, direct payments, rural development, reform*

JEL Classification: Q13, Q14, Q18

Introduction

The Common Agricultural Policy (CAP) is the European Union's main policy, which is relevant not only for the 7 millions European farmers but also for the 44 millions people in the EU. It guarantees that rural areas, which are home to 55% of EU citizens, remain economically viable and not abandoned. It brings food safety standards and quality of health. The Common Agricultural Policy is a key policy of the European Union, which represents 40% of the EU budget and the cornerstone of the integration process. In the field of the Common Agricultural policy it was gradually implemented five major reforms, most recently in mid-2003, mid-term review in 2009 and in 2013 the budget 2014 - 2020 strategy. Reform for the years 2014 - 2020 for the first time gave Member States the possibility to adapt the CAP direct payments to different areas of flexibility and thus better address their national needs. The role of the Common Agricultural Policy of 2013 is to strengthen the competitiveness of the sector, promote sustainable agriculture, innovation, employment and growth in rural areas and focus financial support on productive land use. The main objectives of the CAP are to improve agricultural productivity and ensure a fair income for farmers. All EU Member States have these two objectives, which cannot be achieved without financial

support. The use of appropriations is more effective if there is a single EU common policy instead of 28 national policies.

The Common Agricultural Policy helps farmers by:

- income support: Direct payments to support farm incomes and reward farmers for providing public goods for which markets do not normally pay.
- market measures: The European Commission may take measures to solve difficult situations in the market, such as a sudden drop in demand due to health warnings or fall in prices due to temporary oversupply in the market.
- rural development measures: The objective of national development programs is to focus on the specific needs and challenges faced by rural areas. Although Member States in designing their programs use the same list of measures have the opportunity within its borders to tackle the most important issues that reflect their specific economic, natural and structural conditions.

Market measures and income support are entirely funded from the EU budget, while rural development is based on multi-annual programming and co-financed by the Member States.

The functioning of the agricultural sectors in the different Member States is generally determined by a decision at Community level. As a result, agriculture is seen as one of the most integrated sectors in the EU and sometimes as a possible model for other sectors.

The Common Agricultural Policy is an important policy of the European Union with a central role for Europe 2020 (European Commission, 2010). Its financial subsidy represents approximately 40% of the total EU budget (Papadopoulos, 2015). The original objective of the CAP was to increase farmer's incomes by promoting market prices (De Filippis, 2013; Simo et al., 2016). For more than 50 years, the CAP reform gradually towards achieving complex objectives and instruments. In recent decades, and in decoupling support from production, with increasing emphasis on the multifunctionality of agriculture policy began to act as a provider of public goods (Greer, 2013; Benda-Prokeinová et al., 2017). The seemingly endless reform process has been typically driven by political and economic means depending from the top down policy (Cheiladaki-Liarokapis, 2007). Another route was characterized by the most recent reform of 2014-2020, which was completed in 2013. The reform of the years 2014 to 2020 introduced a system of selective payments, under which each Member State can choose and customize different measures. Member States response to this degree of flexibility has been extremely diverse, leading to divergent views of policy implementation.

The reform of the CAP for the period 2014 - 2020 was decided in 2013 as a result of new co-decision procedure European Parliament alongside the Council, nearly two years after the Commission's legislative proposals (Greer, 2013). A key element of the new CAP was deeply enhanced implementation flexibility gained by Member States, enabling them to adapt EU rules to their needs. Member States were invited to decide which payments to receive, the amount of resources to be allocated to each payment and the related eligibility criteria, the distribution of funds between the two CAP pillars and beneficiaries (Anania and Pupo D'Andrea, 2015). Decisions have not been entirely concentrated in the hands of the European institutions and the Member States were required to implement the CAP. Strengthening the powers of Members of the European Parliament could also be seen as a pressure to represent national interests. In general, regardless of the possible obstacles to new decentralized decision-making process is likely to encourage the active participation of a wider

range of actors and to provide more place to adjust the overall framework of specific national conditions (Greer, 2013). The Common Agricultural Policy was reformed in 2013 to improve the environmental performance of the agricultural sector in the EU. The key change that has brought reform was the creation of stronger links direct payments to agricultural practices that are beneficial for the climate and environment, greening the CAP. Greening includes three measures, which are compulsory for farmers who wish to receive full direct payments: crop diversification, maintenance of permanent pasture and respect for ecological focus areas (EU, 2013).

The state, as a provider of national subsidies, decides on the selection of commodities and the amount of selected commodities in its agricultural policy. The aim of the CAP is to provide agricultural producers the opportunity to reach the reasonable profit margin with the help of targeted support in average, regional or specific conditions of the country. Subsidy policy has an impact on the economic performance of farms. It is an essential factor in making decisions of individual farmers. Evaluating the effectiveness of holdings dealt Fandel (2002), who examined the structural changes in agriculture and impact on the efficiency of enterprises using the method of data envelopment analysis DEA. Enterprises have the highest efficiency over 1000 hectares. Chrastinová (2017) identified the reasons for the existence of a positive relationship between subsidies and farm performance. As payments help in the technological development of receiving farms, provide an incentive for innovation and the transition to new technologies, then performance increase. Bezlepkin et al. (2004) examined the impact of subsidies on the profitability and the level of input from / in output of Russian dairy farms. Subsidies had a significant impact on the increase in farm profits, but on the other hand, caused distortions in cost and production levels. Henningsen et al. (2011) analyzed the effect of two types of subsidies - tied to production and separated from production. Coupled payments had a significant impact on the use of input from a height of production, while in the case of decoupling these effects are negligible. Trnková et al. (2012) examined the effect of subsidy payments to economic indicators of Czech farms specialized in animal production. Direct payments caused a decline in economic performance of farm businesses, as recipients of subsidies reached lower levels in output and higher volumes of inputs are spent as businesses that did not receive subsidies.

The aim of subsidies in the first and in the second pillar of the CAP is to promote the income situation in the agricultural sector. The impact of subsidies on farmer's income and profitability of farms is apparent and many farms without subsidies would generate a loss (Chrastinová, Burianová 2009). Subsidies alleviate credit constraints farms and reduce risk aversion, which could have a positive impact on the productivity of farms, Rizov et al. (2012). Subsidies are a tool, a means of implementing the objectives of certain specific policies and selection tools in understanding properties and effects, and its combination should be based on clarifying the strategy and objectives of the knowledge environment and the overall economic situation of the country, Bečvářová (2008). Sustainable agriculture and rural development are important aspects that are emphasized and taken into account when designing a new agricultural policy that will make full use of its potential and actively participate in creating a better environment, according Ďuričová (2014).

Material and Methods

Simplifying the wide range of existing instruments under the second pillar of the CAP in order to focus on supporting competitiveness, innovation, knowledge-based agriculture, young farmers at the start of business, sustainable management of natural resources and balanced territorial development. Agricultural support policy is a permanent part of the CAP, under which subsidies are provided to achieve prosperity of farms, subsidies to ensure adequate income support to realize the strategic goals of agrarian and nutrition policy of the state in practice.

The difficulties with reaching agreement on such objective criteria should not be underestimated. A selection of the criteria which have been most discussed in the institutional and public debate is given below:

- economic criteria related to agriculture, AWU (annual working unit) and GVA/AWU (gross value added per AWU): comparison to the EU average with the Member States with higher GVA/AWU receiving higher direct payments/ha, direct payments/ beneficiaries. These criteria would reflect differences in productivity in the agricultural sectors of Member States with agricultural factor income/AWU and share direct payment of farm income.
- general economic criteria, PPS (purchasing power standard) and GDP/cap: an index is used for the adjustment in relation to the EU average with the Member States with higher GDP/capita (expressed in PPS) receiving higher direct payments/ha. These criteria would reflect disparities in the costs of living between Member States.
- for the environmental criteria, areas in less favoured areas (LFA), Natura 2000 zones and permanent pasture: The index compares the share of the relevant area in the Member State's total utilised agricultural area (UAA) to the EU average. Thus Member States with a higher share of these types of areas get higher direct payments/ha.
- alternative approach is the combination of economic and environmental objective criteria

$$Flat\ rate\ x\left[\frac{2}{3}\times\left(\frac{2}{3}\frac{GDP}{cap}+\frac{GVA}{AWU}\right)\right]+\frac{1}{3}\times\left(\frac{1}{3}LFA+\frac{1}{3}Permanent\ Grassland+\frac{1}{3}Natura\ 2000\ area\right)$$

Results and Debate

The Common Agricultural Policy – present

The reform of the CAP in 2013 was decided in a period of economic recession. Since then, the economic and institutional environment has changed. Growth has returned and the EU heals its wounds received during the crisis.

The main orientation of the CAP over the projection period 2014 - 2020 is a system conversion of decoupled aid to support multifunctional system. The programming period 2014-2020 started to be implemented under the agreed CAP reform. EU rural development policy II. pillar of the CAP continues to evolve with the intention to respond to the new challenges in rural areas and accelerate the integration of environmental requirements.

The implementation of the CAP in the period 2014-2020 is shown in the following table and graphs. The importance of the first pillar, in particular of direct payments, is demonstrated not only at EU level but also at national level.

Table 1 The Common Agricultural Policy 2016 indicators

country/ indicator	indicator 1	indicator 2	indicator 3	indicator 4	indicator 5	alternative indicator
EU 28	12681,27	15433,22	26,91	6659,28	565,51	23578,56
Austria	14409,79	16761,02	31,42	6631,75	153,69	3565,38
Belgium	15142,37	31384,46	25,94	17189,09	1377,80	3571,89
Bulgaria	5854,14	7446,16	36,08	12060,87	650,46	1885,72
Croatia	5409,41	5946,52	19,09	2072,36	424,99	1409,82
Cyprus	17064,68	16364,78	14,71	1742,48	1405,10	3841,62
Czech Republic	29577,11	20046,43	39,46	29167,09	306,54	7008,18
Denmark	-5639,85	26233,53	56,41	21868,76	3115,37	-902,51
Estonia	187,12	8052,60	59,29	8045,01	184,80	187,65
Finland	11807,61	20435,04	31,81	10348,48	85,69	2927,22
France	23531,93	29142,58	31,96	23525,73	1477,35	8607,21
Germany	16264,84	26420,49	34,71	15895,65	611,59	5598,33
Greece	12833,76	14122,19	35,21	3338,30	506,02	3528,24
Hungary	7286,37	8593,57	32,92	3877,78	779,99	2281,24
Ireland	12862,86	17227,72	39,03	9914,55	374,52	3451,18
Italy	16012,97	19259,32	16,39	5275,86	1664,66	5137,31
Latvia	4499,02	5458,16	42,44	3659,33	132,35	1247,17
Lithuania	3573,04	5152,44	50,92	3332,69	309,40	1171,61
Luxembourg	9392,20	19024,20	45,69	19372,90	155,13	2216,80
Malta	10961,44	10902,78	8,12	1101,45	998,58	2483,62
Netherlands	34130,64	46359,77	10,36	17889,40	728,66	7868,47
Poland	5968,79	6209,76	32,68	2584,73	340,03	3006,83
Portugal	9837,63	10780,97	22,88	4497,44	299,53	2703,83
Romania	3761,27	3785,67	24,75	2165,11	331,99	2391,89
Slovakia	13900,61	16197,32	53,35	23464,10	329,25	3339,43
Slovenia	4695,19	5620,10	28,51	2555,71	223,73	1282,02
Spain	50796,84	31577,94	18,67	7701,81	600,54	13994,35
Sweden	18104,92	23765,75	45,03	11886,03	689,74	4429,14
United Kingdom	25626,01	29761,81	30,90	22112,56	1161,83	7748,94

Legend: 1, GVA/AWU [EUR] 2, agricultural factor income/AWU [EUR] 3, share direct payment of farm income [%] 4, direct payments/beneficiary [EUR] 5, direct payments/hectares [EUR] 6, alternative indicator
Source: author's own elaboration according AGRI DATA, DG AGRI, EUROSTAT

As an evaluation of the income effects of direct support has underlined, direct payments have proven to be an effective tool for enhancing the income of farmers and have made a positive and robust contribution to the stability of these incomes. It has also been shown that direct payments contribute to keeping sustainable farming in place throughout the EU territory, as well as providing a basis for the provision of public goods through agriculture.

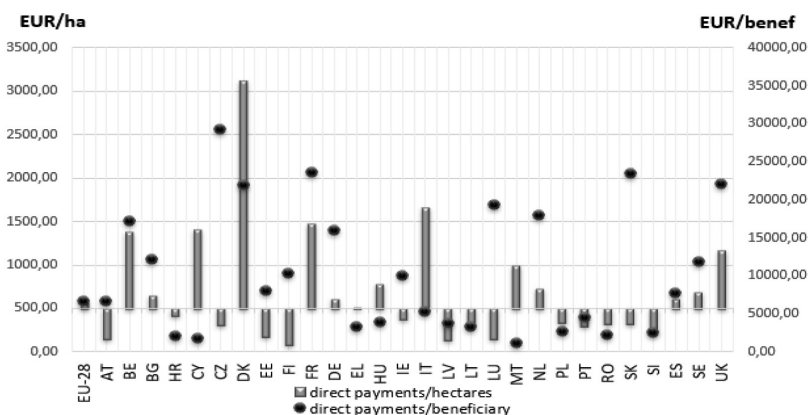
Table 2 The correlation analysis of European Commission indicators

	indicator 1	indicator 2	indicator 3	indicator 4	indicator 5
indicator 1	1				
indicator 2	0,700491061	1			
indicator 3	-0,429723883	-0,195907997	1		
indicator 4	0,341585558	0,643429271	0,361150161	1	
indicator 5	-0,021295353	0,419076922	-0,066741054	0,287395122	1

Source: author's own elaboration

The Commission focuses on interventions in the interest of simplification, although some actions become less visible and, finally, rules of Leader are transferred to the scope of cohesion policy, although its funding secured from the agricultural budget as represents the results of correlation analysis especially indicator 4- direct payments/beneficiary.

Graph 1 Average direct payments per beneficiary and per hectares in each Member State

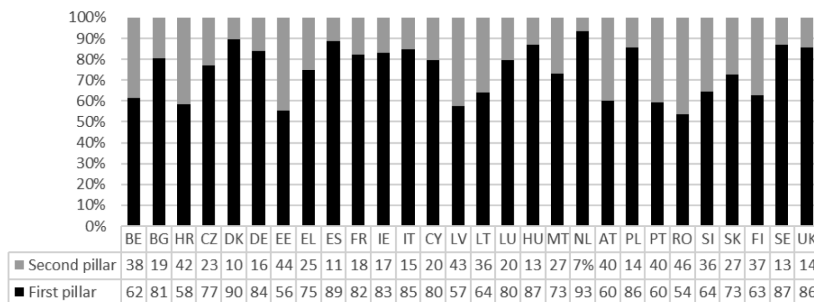


Source: author's own elaboration according AGRI DATA, DG AGRI, EUROSTAT

Graph 1 illustrates the significant differences between Member States as regards the average direct payments per hectare and per beneficiary based on the current distribution.

In particular, considerations have to be made with respect to a more equitable distribution between Member States and between farmers as well as a strengthened role in the provision of income support and public goods.

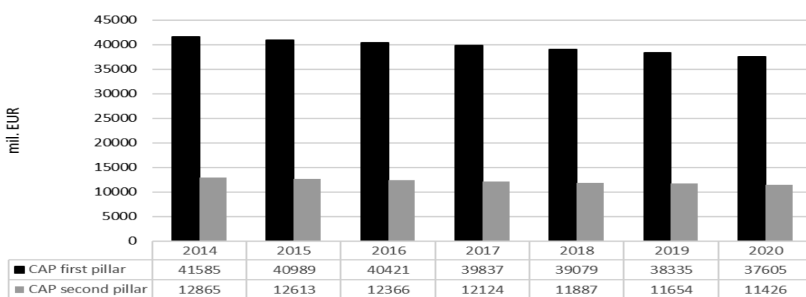
Graph 2 The Common Agricultural Policy in 2017



Source: author's own elaboration according European union fact sheets

A wide range of existing instruments under the second pillar of the CAP has been simplified to focus on promoting competitiveness, innovation, knowledge-based agriculture, young farmers at the start of business, sustainable management of natural resources and balanced territorial development.

Graph 3 The Common Agricultural Policy 2014-2020



Source: author's own elaboration according European union fact sheets

The main direction of the CAP for the period 2014 - 2020 cover the following points:

1. The conversion of decoupled aid to support multifunctional system. Phase separation of production from agricultural aid to general income support, which began in 2003, leaving space for the stage reconnecting tools with specific objectives, which are deleted all historical benchmarks.
Single business payments replace the system of payments by stages or layers with 7 components: • basic payment, • green payment for environmental public goods (greening) • an additional payment for young farmers, • redistributive payment, under which may be increased support for the first hectare of the farm. • additional support to income in areas with natural constraints, • production-related assistance, • a simplified scheme for small farmers.
Furthermore, it was determined that the funds for direct payments available to each Member State will be progressively adjusted so that everywhere in 2019 reached a minimum level of payments per hectare in euro (ie. external convergence).
2. consolidating the two pillars of the CAP: the first pillar, which finances direct aid and market measures, and which is fully covered by the European Agricultural Guarantee Fund -EAGF; the second pillar to support rural development, which operates on the basis of co-financing.
Also increased the flexibility of moving funds between pillars: from 2015, Member States have the option to transfer money, which they were originally allocated, in both directions (from the first to the second pillar to 15% from the second pillar to the first in some states up to 25%)
3. consolidation of tools single Common Market Organization (CMO), which became a protective mechanism that applies only in the case of price crisis and disorderly markets. In addition, it was confirmed the abolition of all measures of control offer. The new single CMO creates a new reserve for crises in order to respond to possible disorderly markets.
4. integrated and targeted territorial approach to rural development. Better coordination of rural measures with other Structural Funds has been established.

Task Force on the agricultural markets, which was created in January 2016, presented in November 2016 its final report and recommended improvements to the regulation of the food chain and the agricultural markets, on the basis of which should develop legislative proposals. Finally, the Commission presented in November 2017 a Communication on the future of food and farming in June 2018 and the legislative proposals and thus began the process of reform of the Common Agricultural Policy for the period after 2020.

The future shape of the Common Agricultural Policy

Work on the CAP after 2020 was launched by the Dutch Presidency of the Council at an informal meeting in May 2016. Following the Council Presidency to continue the process and start thinking about the main challenges to be tackled in agriculture. The European Commission created in January 2016 a working group whose task was to examine the future of the agricultural markets, and this group presented a final report in November 2016. Regarding the second pillar, conference Cork 2.0 of September 2016 led to the adoption of a declaration in which it highlighted

ten key guidelines for future rural development policy in Europe. At the request of the European Parliament, this procedure has become a genuine mini-reform of the CAP. The European Parliament was inspired by the recommendations of the market task force on introducing additional amendments to strengthen the mechanisms currently in force.

The following improvements were approved: Expanding the scope of professional organizations. Strengthening agricultural guarantees and income stabilization instruments. Modifying the rules regarding the greening payments and payments for young farmers. The definition of active farmer, which allows Member States to apply highly flexible applications.

The future CAP will have nine goals that reflect the different economic, environmental, social and territorial tasks. It will maintain two pillars and two agricultural funds to support national programs on the basis of an integrated approach. In any case, direct payments will remain the priority elements of the new CAP.

In addition to the new management of the CAP are another key element of the reform proposals:

1. With regard to the first pillar, the redistribution of direct support has been given a new impetus: the Commission proposes a reduction of payments from 60 000 EUR and a mandatory ceiling for over 100 000 EUR per farm. In addition, sectoral intervention programs are transferred from the common market organization to the new national strategic plans.
2. The new green architecture is much more flexible in the design and management entrusted to the national authorities. It should have three aspects: a new conditionality, programs on climate and the environment, which would be financed by the EAGF and replace existing greening payments and commitments in the area of environmental and climate-funded by the European Agricultural Fund for Rural Development (EAFRD).
3. As regards the second pillar: the EAFRD is not an essential structural funds under cohesion policy, co-financing rate will be reduced by 10 percentage points. In the CAP, the European Commission wants to respond more intensively to new challenges:

I. Pillar - for more effective targeting of direct payments to secure income for all farmers across the EU, options such as:

- compulsory degression and capping of direct payments - from 60 000 € (degression) and 100 000 € (ceiling)
- increase support for small farmers, especially through redistributive payments,
- focusing on those farmers who make their living exclusively on agriculture,
- convergence - reducing disparities in aid between Member States (convergence since 2022 for the Slovak Republic at 90%)

II. Pillar - efficiency II. pillar also depends on strong links and synergy with the first pillar

Commissioner Hogan at a conference on agricultural perspective of the EU in Brussel in 2017 emphasized that there is widespread support for the common agricultural policy and that most people believe that farmers need direct income support to sustain European food safety should farm policy bring more benefits for the environment and climate. In this context, the Commission Communication of November 2017 highlights the added value of the CAP and other international, social

and environmental challenges. In this sense, it is expected that the CAP after 2020 will reflect an even higher level of ambition, particularly in terms of the environment, and will respond to citizen's expectations concerning sustainable and multifunctional agriculture.

Commissioner Oettinger at a conference on the agricultural outlook in 2017 highlighted the social concerns and future challenges when called upon to address criticisms of the CAP, which has been the subject of public debate, particularly as regards the allegedly very high level of support for farmers, excessive bureaucracy, aid to large farms, sustainability of agricultural production, animal welfare and the relationship between agricultural and development policy. The Commission in achieving the objectives of the CAP believes that future policy should be smarter and more sustainable in terms of the important challenges facing the EU.

The Communication identifies three main objectives for the future CAP:

- to promote a smart and resilient agricultural sector - the Communication highlights the role of first pillar interventions and requires that direct payments should be simplified and better targeted. It advocates greater investment in farms and the adoption of appropriate risk management instruments to improve the resilience of farmers to crises.
- strengthen environmental protection and climate action - in Communication it foresees ambitious CAP with a clear commitment to provide environmental public goods. This could be done by making direct payments conditional on environmentally friendly procedures and replacing the current "green" architecture with an integrated, flexible approach in which Member States should play a greater role in setting targets.
- to strengthen the socio-economic structure of rural areas - the Communication recognizes the structural problems of many rural areas in the EU and calls for a greater contribution of the CAP to supporting new rural value chains. Special attention is given to young farmers and enhancing generational renewal in the agricultural sector.

Crucial will be the definition of objectives at EU level, as it will provide for additional programming and targeting at national level in the light of the proposed higher level of subsidiarity in the future. Due to such a plan for a highly ambitious and effective CAP many Member States already during the meeting of 11 December 2017 stressed the need for an adequate level of funding to enable policy to fulfill its objectives and to respond to future challenges and expectations. The Commission considers that the future CAP should be simpler and recommends moving from a policy based on compliance to a policy based on results. The Commission proposes that Member States take greater responsibility for the conception of policies and greater flexibility in its implementation. This would allow greater consideration of local conditions and needs. At the same time, Member States' responsibility for delivering results would be increased. On the one hand, the key policy objectives and general policy parameters set at EU level, thereby ensuring the joint character of policies and avoid re-nationalization of the CAP. On the other hand, Member States would be able to define how they meet the agreed objectives and can adapt CAP interventions and model the applicable compliance and control framework at Community level.

The Commission argues that higher level of subsidiarity to simplify and streamline the CAP, while respecting the diversity of agricultural practices, environmental conditions and local needs in all Member States and regions and to improve compliance with EU objectives. Reorientation of responsibility in the planning and implementation of policies is key to the debate on the future of the CAP.

Agricultural organization COPA-COGECA has created for its members a questionnaire in order to gain insight into the future direction of debates concerning the model of green architecture and the new Common Agricultural Policy. To answer the questionnaire sent 21 member organizations from 17 Member States (PT, ES, FR, IT, BE, NL, DE, CZ, SK, HU, AT, HR, FI, DK, SE, LT, LV). The questionnaire contained questions about the involvement of organizations in the SWOT analysis in the preparation of strategic plans. For the members are among the most relevant aspects of the strategic plans of the CAP competencies and links between countries and regions, the draft strategic plan with respect to I. and II. pillar and ensure timely payments to beneficiaries involved in the preparation of strategic plans for the CAP of all stakeholders at the national level, what will play a role, process control and delay the adoption of strategic plans CAP balance between conditionality and eco-schemes, a shift from measures encouraging income to stimulate more sustainable and competitive agriculture.

The Common Agricultural Policy takes into account the expectations of society and will make many changes in the future: direct support will be fairer and take into account the environmental aspect, farmer's position against other actors in the food chain will be strengthened and policy as a whole will be more efficient and transparent. The CAP is a strong EU response to the challenges of food security, climate change, growth and jobs in rural areas. This policy will continue to support smart, sustainable and inclusive growth.

Conclusion

The Common Agricultural Policy of the European Union has undergone since its inception gradual development, while its current form is the result of the reform of 2013. Its main task was to support the environment through greening. The universal or direct form of the CAP is not appropriate to achieve the desired results in agriculture. This reform provided Member States with the possibility of adapting direct CAP payments to national conditions. It formed I. and II. pillar of the Common Agricultural Policy.

The European Commission presented a proposal for the EU budget for the period 2021-2027 which will affect the performance of the CAP in the Member States. The area of European agriculture is to fulfill economic, social, environmental and territorial challenges. The debate on the CAP takes place not only at European level but also at national level to ensure that specific needs are covered. To obtain the views of the future shape of the CAP was conducted a questionnaire survey in which the Slovak Republic was also involved.

Bibliography

1. Anania, G., Balmann, A., Buckwell, A., Bureau, J. C., De Castro, P., Di Mambro, A., & Haniotis, T. (2015). *The Political Economy of the 2014-2020 Common Agricultural Policy: An Imperfect Storm*. CEPS Paperback, 17 August 2015.
2. Benda-Prokeinová, R., Dobeš, K., Mura, L., Buleca, J. (2017). Engel's Approach as a tool for estimating consumer behaviour. *E & M Ekonomie a Management*, 20 (2), pp. 15 - 29
3. Blomquist, J., & Nordin, M. (2017). Do the CAP subsidies increase employment in Sweden? Estimating the effects of government transfers using an exogenous change in the CAP. *Regional Science and Urban Economics*, 63, 13-24.
4. CAP TOWARDS 2020 IMPACT ASSESSMENT. [online]. [cit.2019-03-31]. Available at: https://ec.europa.eu/agriculture/policy-perspectives/impact-assessment/cap-towards-2020_en#ia.
5. Debate on the CAP post-2020 on the basis of the Commission Communication on The Future of Food and Farming. Council of the European Union. Brussels, 17 January 2018. [online]. [cit.2019-03-25]. Available at: <https://www.consilium.europa.eu/media/32385/debate-on-cap-post-2020.pdf>.
6. Chrástínová, Z., Adam, Š., & Belešová, S. (2018). Ekonomické aspekty poľnohospodárstva a potravinárstva. *Ekonomika poľnohospodárstva*, 18, 5-34
7. Cortignani, R., & Dono, G. (2019). CAP's environmental policy and land use in arable farms: An impacts assessment of greening practices changes in Italy. *Science of the Total Environment*, 647, 516-524.
8. Ďuričová, I. (2018). Podporná politika v poľnohospodárstve SR v rokoch 2007-2016. *Ekonomika poľnohospodárstva*, 18, 35-53
9. Erjavec, E., & Lovec, M. (2017). Research of European Union's Common Agricultural Policy: disciplinary boundaries and beyond. *European Review of Agricultural Economics*, 44(4), 732-754.
10. Erjavec, K., & Erjavec, E. (2015). 'Greening the CAP' -Just a fashionable justification? A discourse analysis of the 2014-2020 CAP reform documents. *Food Policy*, 51, 53-62.
11. Greer, A. (2013). The Common Agricultural Policy and the EU budget: stasis or change?. *European Journal of Government and Economics*, 2(2), 119-136.
12. Henke, R., Benos, T., De Filippis, F., Giua, M., Pierangeli, F., & Pupo D'Andrea, M. R. (2018). The New Common Agricultural Policy: How do Member States Respond to Flexibility?. *JCMS: Journal of Common Market Studies*, 56(2), 403-419.
13. Kelly, E., Latruffe, L., Desjeux, Y., Ryan, M., Uthes, S., Diazabakana, A., & Finn, J. (2018). Sustainability indicators for improved assessment of the effects of agricultural policy across the EU: Is FADN the answer?. *Ecological indicators*, 89, 903-911.
14. Kyrlyuk-Dryjska, E., & Baer-Nawrocka, A. (2019). Reforms of the Common Agricultural Policy of the EU: expected results and their social acceptance. *Journal of Policy Modeling*.
15. Louhichi, K., Ciaian, P., Espinosa, M., Colen, L., Perni, A., & y Paloma, S. G. (2017). Does the crop diversification measure impact EU farmers' decisions? An assessment using an Individual Farm Model for CAP Analysis (IFM-CAP). *Land Use Policy*, 66, 250-264.
16. Overview of CAP Reform 2014-2020. *Agricultural Policy. Perspectives Brief N°5** / December 2013. [online]. [cit.2019-03-22]. Available at: <https://ec.europa.eu/>

- agriculture/sites/agriculture/files/policy-perspectives/policy-briefs/05_en.pdf.
17. Politiky Európskej únie. Poľnohospodárstvo. Spoločná poľnohospodárska politika EÚ (SPP) – naše potraviny, náš vidiek a naše životné prostredie. [online]. [cit.2019-03-25]. Available at: http://publications.europa.eu/resource/cellar/f08f5f20-ef62-11e6-8a35-01aa75ed71a1.0011.03/DOC_1. ISBN 978-92-79-59594-3. doi:10.2775/326304 NA-02-16-625-SK-N
 18. Recanati, F., Maughan, C., Pedrotti, M., Dembska, K., & Antonelli, M. (2018). Assessing the role of CAP for more sustainable and healthier food systems in Europe: A literature review. *Science of the Total Environment*.
 19. Quiroga, S., Suárez, C., Fernández-Haddad, Z., & Philippidis, G. (2017). Levelling the playing field for European Union agriculture: Does the Common Agricultural Policy impact homogeneously on farm productivity and efficiency? *Land use policy*, 68, 179-188.
 20. Schüller, S., & Noack, E. M. (2019). Does the CAP reflect the population's concerns about agricultural landscapes? A qualitative study in Lower Saxony, Germany. *Land Use Policy*, 83, 240-255.
 21. Simo, D., Mura, L., Buleca, J. (2016). Assessment of milk production competitiveness of the Slovak Republic within the EU-27 countries. *Agricultural Economics-Zemедelska Ekonomika*, 62 (10), 482-492
 22. Uthes, S., Li, F., & Kelly, E. (2017). Does EU rural expenditure correspond to regional development needs?. *Land Use Policy*, 60, 267-280.
 23. Zbranek, P., & Chrastinová, Z. (2018). Vzťah dotácií a ekonomickej výkonnosti slovenských fariem. *Ekonomika poľnohospodárstva*, 18, 5-17

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DEMAND FORECASTING AND MEASURING FORECAST ACCURACY IN A PHARMACY

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Abstract

This study examines the application of structured forecasting methods to determine accurate demand forecasts using 12 monthly sales figures of a moderate busy pharmacy. The data were analysed using some forecasting techniques; Moving Average Method, Exponential Smoothing Method and Least Square Method. Also, the performances of the forecasting methods were evaluated using some accuracy measures such as Mean Absolute Deviation (MAD), Mean Square Error (MSE) and Mean Absolute Percentage Error (MAPE) to. The findings reveal that exponential smoothing method which results to least forecast error is the best method. Hence, the pharmacy is advised to adopt this best forecasting method to determine its monthly demand forecasts. Pharmacy operators should maintain sound sales and inventory records; it is easier if the system can be computerized but it could be expensive to operate for small pharmacy outlet.

Key words: *Forecasting methods, pharmacy, performance, demand forecast and accuracy measures*

JEL Classification: M11, M31, L21

Introduction

Forecasting has always been an attractive research area since it plays an important role in business planning process (Chao, Jamie and Jonathan, 2017). With rapid and often unpredictable changes in economic and market conditions, managers are making decisions without knowing what will exactly happen in future (Chan, 2000). To achieve competitive advantage in an environment subject to constant fluctuations, organizations have to make correct and timely decisions based on accurate information-forecast (Cassia, Claudimar and Liuz, 2010; Rakesh and Dalgobind, 2013). All decision making processes in the organization requires not just forecasts but accurate forecasts in order to select proper actions relevant for demand and sales planning, production planning, inventory control and so more. Demand planning is a fundamental business exercise that focuses on the forecasting of future actions which is a required for efficient supply chain operations and overall firm profitability (Yaro, Brent, Travis, and Matthew, 2015) and retail pharmacy is not an exception.

Accurate forecast is a requirement for optimal inventory control and customer demand and reduction of operational costs (Olimpia, Nela, and Camelia, 2016). Accurate forecasts help companies prepare for short and long term changes in market conditions and improve operating performance (Wacker and Lummus, 2002). Chihyun and Dae-Eun's (2016) study also confirmed that accurate demand forecasting is important for sustaining the profitability of the firm. This is because demand forecasts influence the firm in various ways, such as, in strategy-setting and developing production plans. Gupta, Maranas, McDonald and Doganis, (2000) asserted that exact sales forecasting is utilized for capturing the tradeoff between customer demand satisfaction and inventory costs. For this usefulness, especially in this recent rapid changing and less predictable business environmental variables, managers and academics have no choice but to devote more attention to how forecasting can be improved to increase demand forecast accuracy (Michael Gilliland 2011, Rakesh and Dalgobind 2013) In a retail pharmacy, successful sales forecasting systems can be very beneficial, due to the short expiring dates of many pharmaceutical products and the importance of the product quality which is closely related to the human health (Doganis, Alexandridis, Patrinos, and Sarimveis, 2006 as cited by Neda, Mohammad and Hamid, 2014). As accurate demand forecasting is crucial to manufacturing companies and it must be taken more seriously in retail outlets such as supermarkets and retail pharmacy because of the high stock level, high customer needs and traffic they experience daily.

Generally, achieving forecasting accurate demand is difficult (Chihyun and Dae-Eun, 2016 and Noorfa and Andrew, 2009) and the reasons for difficulty are due to several factors; (i) large variances between actual sales and demand, and (ii) no sales force forecast accountability (Xabier, 2017), (iii) product characteristics in terms of the product life cycle (PLC) (Chihyun and Dae-Eun, 2016), (iv) sources and information-gathering processes (e.g., what information should be collected, where and how it should be collected), (v) approaches to be adopted (e.g., who should be in charge of forecasting, and what roles should be designed), measurement of accuracy (e.g., using the proper metric and defining proper incentive mechanisms), (vi) and using of unstructured forecasting techniques (Kalchschmidt, 2010). In Pharmaceutical business especially retail pharmacy, forecasting the accurate demand for drug and medical supplies is a difficult task (Noorfa and Andrew, 2009) and one of the problems is the lack of a reliable inventory management system which should provide useful forecasting information (Ilma and Mursyid, 2013; Cadeaux and Dubelaar, 2012). Also, high demand volatility of numerous products faced by retail pharmacy (Papanagnou and Matthews-Amune, 2017) resulted to inaccurate demand forecasts. Betts (2014) opined that one major consequence of demand volatility is the increasing inaccuracy of forecasts which have resulted in excessive stocking leading to expiries and losses especially when considering products with a predetermined shelf life. Considering, the high varieties of products and demand volatility pharmaceutical products, continuous evaluation of fluctuations of inventory is critical to accurate demand forecast, customer satisfaction and overall firm profitability.

Retail pharmacies are a popular choice in low-income countries like Nigeria, Ghana, Togo, etc., for individuals seeking healthcare for minor ailments as a result of the ease of access as compared to the bureaucratic processes, cost and time involved in hospital visitations. Also, in many smaller towns where hospitals are unavailable or reside in bigger cities, retail pharmacies are the first point of call for treatment and advice (Yadav, 2015). Retail pharmacy is confronted with several challenges, including high customer orders and traffic, high stock level, stiff

competition, and tough government regulations and levies. It has to continually meet their customers' needs by stocking and delivering the right amount of products (medicines) at the right time.

In retail pharmacy, one of the major problems is the inability to predict the quantity of each drug and classes of drugs should be kept in the inventory (Neda, Mohammad, Sepehri and Hamid, 2014). Despite the high stock level of product varieties in retail pharmacy the forecasting for each drug or class of drugs (anti-malaria, analgesic, hypertensive, blood tonic, cough relief, injections, bone cares, ulcers multivitamins, etc.) are related. On this note, the study adopted top-down approach to forecast the aggregate products where percentages can be allocated to drugs or the individual class of drugs. Bottom-up is another approach where one could forecast for each part and then sum up the whole. The latter approach seems best when there is reasonably good information on sale records of each drug. Despite the fact that empirically, the bottom-up approach is more accurate (MacGregor, 2001), which implies that it can generate more precise demand forecasts but it was not considered in this study owing to inapplicability. Reasons been that, most Nigerian retail pharmacy stores are not automated in terms of inventory control and sales records, so they manually generate total daily or monthly sales figures for all products not each product (drug) sales figures. Thus, sale figures cannot be easily generated for individual products. It is pertinent to mention that the survey reveals that most if not all retail pharmacy stores in Sango-Ota, Ogun State unconsciously rely on qualitative and naïve forecasting methods which produce far less accurate demand forecasts. Considering these situations and the fact that the quality of demand forecasting, as indicated by its accuracy, required improvements as it did not meet expectations Therefore, this study examines how to increase the operational efficiency of the retail pharmacy by improving the accuracy of sales forecasts using a combination of quantitative forecasting techniques and forecast accuracy measures.

Literature Review

Forecasting Method

Forecasting is the art and science of predicting future events. It may involve taking historical data and projecting them into the future with some sort of mathematical model (Özlem, 2016). Adedayo, Ojo and Obamiro (2006) posited that forecasting involves the use of historical data, past experience, intuition, personal values and opinion to project future event. It is pertinent to mention that scientific forecasts are possible only when a historical data are available to project the future occurrence. Literature indicates that studies of structured forecasting techniques has been undertaken to improve on demand forecasts accuracy (Rakesh and Dalgobind, 2013; Chindia, Wainaina and Pokhariyal, 2014). Using Structured forecasting techniques refers to the use of quantitative (such as moving average, weighted moving exponential smoothing and regression) and/or qualitative approaches (such as the Delphi method, consumer representative method and panel of experts), rather than naïve methods, to elaborate sales forecasts (Benda-Prokeinová et al., 2017). Quantitative techniques use specified and systematic procedures, whereas qualitative techniques involve aspects such as intuition, personal judgment, and experiences. Despite the plethora of studies on this issue, debate is still open on whether the adoption of structured forecasting techniques is always beneficial in improving

forecast accuracy. In particular, during the last decade, several authors have challenged the assumption that: the greater the adoption of complex forecasting techniques – the better the forecast accuracy. For instance, many authors attempted to demonstrate that the efficacy of forecasting techniques in improving forecast accuracy depends on the fit between the type of technique adopted and the context (Makridakis et al., 1998; Sanders and Manrodt, 2003). Moreover, several researchers suggested that complex forecasting technique adoption is not enough to guarantee good forecast accuracy (Armstrong, 1987; Mentzer and Bienstock, 1998; Moon et al., 2003).

Qualitative and Quantitative Forecasting Methods

According to Adedayo et al, (2006) and Cassia, et al, (2010), qualitative forecasting method which is subjective in nature involves the use of soft data like the decision maker's experiences, personal values, intuition, emotions and judgmental in reaching a forecast. Some of the common types of qualitative forecasting methods are; (i) Delphi Method, Sales Force Composite, (iii) Consumer Survey, (iv) Jury of Executive Opinions. Quantitative techniques use specified and systematic procedures in analyzing past or historical data by studying the pattern and projecting the pattern into the future using several methods to make a forecast. Generally, this method is assumed to be objectives because it's scientific in nature. Quantitative techniques fall into two categories; (i) trend projections using time series model and (ii) casual method. Trend projection which is the focus of this study which is further divided into smoothing methods (moving average forecast and exponential smoothing) and time series decomposition. The commonly use quantitative forecasting techniques in the developing economy like Nigeria that has limited access to sophisticated quantitative forecasting methods and facilities are relatively simple methods. Some of the relatively simple forecasting methods include among others; naïve method, moving averages method, weighted moving average method, exponential smoothing method and regression analysis.

Hybrid Forecasting Method

A third forecasting model is a hybrid of qualitative and quantitative methods of forecasting. This combination allows the use of hard data (historical data) and soft data (decision maker's intuition experiences, emotions, values and judgment) to predict more accurate forecasts. The combination process is dependent on the accuracy of performance forecasting a firm aims to achieve by either minimizing the Mean Square Error (MSE) of the resulting forecasts or combining forecasts to attain a simple average of the different forecasts used in the combination (chidina et al, 2014). Combining forecasts therefore, tends to even-out uncertainties within the different forecasts used, but erratic changes in market rivalry could render this method less accurate. As useful as combining forecasting methods to generate more accurate forecasts is, it is pertinent to understand that application depends largely on the level of demand. In more demand volatile settings like Nigerian business environment where there is frequent changes of business indicators, combination of qualitative and quantitative methods of forecasting may not adequately predict future sales, so therefore, application of quantitative demand forecasting method(s) to determine future sales of retail pharmacy outlet is recommended. This decision is validity by (Cassia, Claudimar and Liuzs's, 2010) study.

A combination of simple structured forecasting methods such as simple moving average, exponential smoothing and least squared method were used to analyse past twelve (12) months sales data of a pharmacy in this study. Researches on time series forecasting argues that predictive performance increases through combined forecasting techniques (Kumar & Dalgobind, 2013 and Armstrong, 2001). Bunn and Taylor (2001) got considerable improvements in accuracy when they combined judgmental forecasting method with a statistical method. Hibon and Evgeniou's (2005) study is of the opinion that selecting among combinations is less risky than selecting among individual forecasts. It was on these premises that a combination of simple quantitative forecasting methods was selected for this study. The performance of forecasting methods varies according to the accuracy measures being used (Makridakis and Hibon, 2000). Therefore, estimating the performance of forecasting methods involves the application of some accuracy performance measures (Nijat, Davis, Peter and Peter, 2016).

Forecasting Accuracy Measures

In the past studies, various accuracy measures have been proposed, discussed and applied by many studies as evaluation criteria for forecasting methods (Nijat, Davis, Peter and Peter, 2016; Pradeep and Rajesh, 2014). Forecast accuracy measures provide necessary and decisive feedback to decision makers in order to use the better forecasting which associated with least forecast error. Due to large forecast errors which usually negatively affect companies' operational performance, forecast accuracy is often considered as a necessity (Danese and Kalchschmidt, 2011). Forecast accuracy in supply chain is typically measured using the Mean absolute deviation (MAD), Mean squared error (MSE) Adedayo, et al, 2006, Hyndman and Koehler, 2006) and mean absolute percentage error (MAPE)(Mathai, Amathai, Agarwal, Angampalli, Narayanan and Dhakshayami, 2016). The forecasting errors challenge the overall accuracy of the forecasting methods no matter how simple or sophisticated.

This study intends to evaluate the accuracy of the forecasting methods (i. moving averages method, ii. simple exponential smoothing method, iii. least square method) using mean forecast error (MFE), mean absolute deviation (MAD) and mean square error (MSE). This is in similar to the study conducted by Pradeep and Rajesh, (2014) except the addition of root Mean Square Error (RMSE) which is the squared root of MSE. Paul (2006) applied the forecast accuracy measures to evaluate naïve forecasting technique. Matsumoto and Ikeda (2015) adopted the forecast error measures in examination of demand forecasting by time series analysis for auto parts remanufacturing. Nijat, Davis, Peter and Peter, (2016) did a detailed description of accuracy measures and the performance of the prediction models are evaluated using a chosen dataset from the UCI Machine Learning Repository. Mathai, Amathai, Agarwal, Angampalli, Narayanan and Dhakshayami, (2016) instead used their newly developed accuracy forecast method; Symmetric mean average percentage error and other popular accuracy measures to measure the accuracy of forecast of the sales of the ten products various industries with products having intermittent demand. Rakesh Kumar and Dalgobind, (2013) evaluated the performance of forecasting methods using the accuracy of Mean Average Deviation (MAD), Mean Squared Error (MSE) but in different industry and location. The review of the above literature indicated that there are no best overall accuracy measures which can be used as a

universally accepted single metric for evaluating and choosing the appropriate forecasting method

Material and Methods

This study adopted a survey and ex post facto descriptive designs which involved the conduct of pilot study, interview and the collection of secondary data of the sales record of the selected retail pharmacy outlet that sell both wholesale and retail products to customers. A combination of quantitative forecasting techniques of; (i) a moving average method; (ii) a simple exponential smoothing method and (iii) least square method were applied to generate demand forecasts for 12 months from January, 2018 to December, 2018 from Twelve (12) historical monthly sales figures from January, 2017 to December, 2017. The demand forecasts were subjected to accuracy test to identify errors made. The forecasting errors challenge the overall accuracy of the forecasting methods no matter how simple or sophisticated.

Data Presentation

Twelve (12) historical monthly sales figures from January, 2017 to December, 2017 were collected from the sales records of the chosen retail Pharmacy as presented in table 1. The three forecasting methods (moving averages, smoothing constant and least cost method) were used to determine sales forecasts from January, 2018 to December, 2018. The performance of the forecasting methods was evaluated with forecast accuracy measures (MAD, MAPE and MSE).

Table 1 12 month's sales figures of Pharmacy

Month (x)	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Actual sales (y) (million)	25	29	28	35	32	36	41	45	20	23	15	

Source: Company's Sales Records

Results and Debate

Sales Forecast using 2-Month Moving Average Method

The study used 2-month moving average method to be able to even out the peak and valley in the sales figures for two months which tends to generate better forecast as indicated in table 2. Also, the accuracy of the forecasting method was evaluated as represented in table 2.

Table 2 Actual and Forecasts using 2-Month Moving Average Method

Month (x)	Actual sales (y) (million)	Forecast	IEI	IEI ²	E/Y x100
1	25	-	-	-	
2	29	-	-	-	
3	28	24.5	3.5	12.25	12.5
4	35	28.5	6.5	42.25	18.57
5	33	31.5	1.5	2.25	4.55
6	32	34	2	4	6.25
7	36	32.5	3.5	12.25	9.72
8	41	34	7	49	17.07
9	45	38,5	6.5	42.25	14.44
10	20	43	23	529	115
11	23	32.5	9.5	90.25	41.30
12	15	21.5	6.5	12.25	43.33

The forecast accuracy performance measures are;

$MAD = \Sigma/E//T = 69.5/12 = 5.79$, $MSE = \Sigma/E//T = 795.75/12 = 66.31$

$MAPE = (\text{Absolute error} / \text{Actual Observed Value}) \times 100 = 282.73/12 = 23.56$.

Sales Forecast using Exponential Smoothing Method

This is an advance method, weighted average method which overcomes the limitations of moving averages. In this study, α is assumed to 0.30 (30%). This implies that that 30% of the forecast will be affected by recent data while the while the older data will be affected by 70%. It is similar to the value of smoothing constant (α) applied in (Rakesh & Mahto's, 2013) study of evaluating the performance of forecasting methods to determine the level of accuracy.

Table 3 Actual and Forecasts using Exponential Smoothing

	Actual sales (y) (million)	Forecast	IEI	IEI ²	E /Y x100
1	25				
2	29	25	4	16	13.79
3	28	25.9	2.1	4.41	7.5
4	35	28.56	6.44	41.47	18.4
5	33	29.89	3.11	9.67	9.42
6	32	30.52	1.48	2.19	4.63

7	36	32.17	3.83	14.67	10.64
8	41	34.82	6.18	38.19	15.07
9	45	37.87	7.13	50.84	15.84
10	20	36.26	16.26	264.39	81.3
11	23	24.14	1.14	1.30	5.65
12	15	21.40	6.4	40.96	42.67

The forecast accuracy performance measures are;

MAD = $\Sigma E / T = 58.07 / 12 = 4.84$, MSE = $\Sigma E^2 / T = 484.09 / 12 = 40.34$

MAPE = (Absolute error / Actual Observed Value) $\times 100 = 224.91 / 12 = 18.74$

Least Square Regression Model

Table 4 Actual and Forecasts using Least Squared Model

Month (x)	Actual sales (y) (million)	XY	X ²	Forecast	IEI	IEI ²	E /Y $\times 100$
1	25	25	1	32.92	7.92	62.73	31.68
2	29	58	4	32.42	3.42	11.70	11.79
3	28	84	9	31.92	3.92	15.37	14
4	35	140	16	31.42	3.58	12.82	10.23
5	33	165	25	30.92	2.18	4.75	6.61
6	32	192	36	30.42	1.58	2.50	4.94
7	36	252	49	29.92	6.08	36.97	16.89
8	41	328	64	29.42	11.58	134.10	28.24
9	45	405	81	28.92	16.08	258.57	35.73
10	20	200	100	28.42	18.42	339.30	92.1
11	23	253	121	27.92	4.92	24.21	21.39
12	15	180	144	27.42	12.42	154.25	82.8

78
a= 33.42

362
b= -0.5

2282

650

Therefore the regression line equation for forecast is F =

$y = 33.42 + (-.5)X$ and (X=1=12) to generate the forecast for the 12 months.

The forecast accuracy performance measures are;

MAD = $\Sigma E / T = 92.1 / 12 = 7.675 = 7.68$, MSE = $\Sigma E^2 / T = 1057.27 / 12 = 88.11$

MAPE = (Absolute error / Actual Observed Value) $\times 100 = 356.4 / 12 = 29.7$

Table 5 Summary of the results of the Forecast Accuracy Measures

Measure of Accuracy	Moving Average Method	Exponential Smoothing Method	Least Cost Method
MAD	5.79	4.84	7.68
MSE	66.31	40.34	88.11
MAPE (%)	23.56	18.74	29.7

Table 5 reveals that the values of MAD, MSE and MAPE under moving average method are 5.79, 66.31 and 23.56% respectively. For exponential smoothing method, the values of MAD, MSE and MAPE are 4.84, 40.34 and 18.74%, respectively. While the value of MAD is 7.68, MSE is 88.11 and MAPE is 29.7% under least cost method. In performance accuracy comparison, it was observed that exponential smoothing method is the best technique because it generates the optimal forecast accuracy. That is, exponential smoothing method having the least values of MAD (4.84), MSE (40.34) and 18.74 (%) indicates that it has least error and more accurate forecast than the other two methods. Therefore, the pharmacy is advised to consider the exponential smoothing method for accurate demand forecasting.

Conclusion

Demand forecast of a retail pharmacy with high stock level and customer orders like most retail outlets such supermarkets and restaurant with comprehensive historical data can be determined using other statistical forecasting method(s) rather than relying on the use of naïve forecasting or qualitative forecasting methods owing to lack of proper sales records and the understanding of the importance of scientific forecasting methods. It also evaluated the performance of the forecasting methods (moving average method, exponential smoothing and least square method) in terms of accuracy of sales forecasts using MAD, MSE and MAPE. The findings reveal that using Exponential Smoothing Method generates lowest forecast error, hence more accurate forecasts than other methods. However, the results may not necessarily be the same if a higher or lower smoothing constant (α) is assumed. Also, the usefulness of the statistical forecasting techniques depends on the availability and quality of the historical data which is a function of number and competency of workers, relevant equipment, inventory system (automated) and leadership commitment. It is pertinent to know that there is no method which could be considered as the best one among the others, although Exponential Smoothing Method is the best method that forecasts our data with the least error.

Although, this study is not without some limitations; first, the study used the most common forecasting methods ignoring the complex and sophistication methods. Second, the smoothing constant (α) of 30% (.30) may not be applicable in all retail pharmacy stores especially with different size or operate in another location. Different companies or industries may require another method(s) of forecasting. Also, data were obtained from pharmacy on the assumption that the sale figures were properly records. These limitations notwithstanding have no effect on the reliability and validity of the demand forecast and its accuracy. Therefore, it is recommended that retain

pharmacy should maintain sound sales and inventory records; it becomes easier if the system can be computerized but it could be expensive to operate. Also, the operators should determine demand forecast by scientific (quantitative) forecasting techniques that use hard data instead of qualitative forecasting techniques that rely on soft information such as personal experience, intuition, values and opinions.

Bibliography

1. Adebajo, D. and Robin, M. (2000). Identifying the problems in forecasting consumer demand in the fastmoving consumer goods sector, benchmarking: An international journal, 7 (3),223-230.
2. Adebayo, A.O., Ojo, O. and Obamiro J.K. (2006) Operations research in decision analysis and production management, Lagos: Pumark Nigeria Limited.
3. Armstrong, J. S. and Collopy, F. (1992). Error measures for generalizing about forecasting methods: Empirical comparisons. International journal of forecasting, 8 (1), 69-80.
4. Armstrong, J.S., (2001). Principles of Forecasting: A Handbook for researchers and practitioners. Kluwer, Boston.
5. Armstrong, S. J. and Brodie, J. R. (1999). Quantitative Methods in Marketing, Second Edition, London: International Thompson Business Press, 92-119.
6. Benda-Prokeinová, R., Dobeš, K., Mura, L., Buleca, J. (2017). Engel's Approach as a tool for estimating consumer behaviour. E & M Ekonomie a Management, 20 (2), 15 - 29
7. Brockwell, P.J., and Davis, R. A. (1996). Introduction to time series and forecasting, Springer.
8. Cássia, R., Da Veiga, Da Veiga, P. C, And Duclós, C. L.(). The Accuracy Of Demand Forecast Models As A Critical Factor. The Financial Performance Of The Food Industry.
9. Chao, C., Jamie, T. and Jonathan M. G. (2017). A new accuracy measure based on bounded relative error for time series forecasting,
10. Chindia, E. W., Wainaina, G., F. N. Kibera, N. F., G. P. Pokhariyal, P. G. (2014). Forecasting techniques, operating environment and accuracy of performance forecasting for large manufacturing Firms in Kenya. International Journal of Managerial Studies and Research (IJMSR), 2(7), 83-100.
11. Danese, P. and Kalchschmidt, M. (2011). The role of the forecasting process in improving forecast accuracy and operational performance. International journal of production economics 131 (1), 204-214.
12. Doganis, P., Alexandridis, A., Patrinos, P. and Sarimveis H. (2006). Time series sales forecasting for short shelf-life food products based on artificial neural networks and evolutionary computing. Journal of Food Engineering, 75(2), 196-204.
13. Gener, R. and George W. (1999). The Delphi technique as a forecasting tool: issues and analysis. International Journal of Forecasting 15, pp353-375.
14. Gupta, M. and Minai, H. M. (2018). An Empirical Analysis of Forecast Performance of GDP Growth in India, Global Bus Rev
15. Gupta, A., Maranas, C. D. and McDonald, C. M (2000). Mid-term supply chain planning under demand uncertainty: customer demand satisfaction and inventory management. Computers and Chemical Engineering, 24 (12), 2613-2621.
16. Hibon, M. and Evgeniou, T. (2005). To combine or not to combine: selecting among forecasts and their combinations. International journal of forecasting 21,15-24

17. Hyndman, R. J. and Koehler, A. B. (2006). Another look at measures of forecast accuracy. *International journal of forecasting*, 22(4), 679-688.
18. Kakhischmidt, M., Zotter, C. and Vergenti, R. (2005). Inventory management in a multi-echelon spare parts supply chain. *International journal of production economics*, 81/82, 165-181.
19. Kalschmidt, M. (-). Demand forecasting practices and performance: evidence from the gmr database, Department of economics and technology management, Università degli Studi di Bergamo, Viale Marconi 5, 24044 Dalmine (BG) Italy.
20. Kumar, R. and Dalgobind, M. (2014). Application of Proper Forecasting Technique in Juice Production: A Case Study. *Global journal of researches in engineering*, 13(4), 42-47
21. Macgregor, D. G. (2001). Decomposition in judgmental forecasting and estimation. In: J. S.
22. Mahmoud, E. (2006). Accuracy in forecasting: A survey. *Journal of forecasting*, 3(2)139-159.
23. Makridakis S, and Hibon M. (2000). The M3-Competition: results, conclusions and implications. *International journal of forecasting*, 16(4):451-476.
24. Makridakis, S. & M. Hibon (2000). The M-3 competition: results, conclusions and implications. *International Journal of Forecasting*, 16, 451-476.
25. Makridakis, S. (1993). Accuracy measures: theoretical and practical concerns, *International journal of forecasting*, 9(4)527-529.
26. Markridas, S. Wheelwright, S.C. and Hyndman, R.J. (1998). *Forecasting- Methods and Applications* John Wiley and sons, New York.
27. Mathai, V. A. and Agarwal, A., Angamoalli, V., Narayanan, S. and Dhakshayani, E. (2016). Development of new methods for measuring forecast error. *International journal of logistics systems and management*, 24 (2),
28. Matsumoto, M. and Ikeda, A. (2015). Examination of demand forecasting by time series analysis for auto parts remanufacturing. *Journal of Remanufacturing*, 5 (1), 10 -19
29. Michael, L., Paul, G., Marcus, O'C., Dilek, O. (2006). Judgmental forecasting: A review of progress over the last 25 years. *International Journal of Forecasting*, 22 (3), 493-518.
30. Monahan, M. K. (2014). Aircraft demand forecasting, Masters Theses - current dissertations and theses
31. Moon, M.A., Mentzer, J.T., Smith, C.D., (2003). Conducting a sales forecasting audit. *International journal of forecasting*, 19, 5-25.
32. Mukttash, A. and Samhoun, M. (2011). Supply planning improvement: a causal Forecasting approach, 11(12), 2207-2214
33. Nijat, M., Peter, F. and Peter, L. (2016). Evaluating forecasting methods by considering different accuracy measure. *Procedia computer science*, 95, 264-271.
34. Parzen, E. and Winkler, R (1982). The accuracy of extrapolation (time series) methods: Results of a forecasting competition. *Journal of Forecasting*, 1, 111-153.
35. Paul, G. (2014). Using naïve forecasts to assess limits to forecast accuracy and the quality of fit of forecasts to time series data, Working paper, University of Bath
36. Pital, Y., Anulark, P. and Amnaj, C. (2001). Demand Forecasting and Production Planning for Highly Seasonal Demand Situations: Case Study of a Pressure Container Factory" *Science Asia*, 27, 271-278.
37. Powers, D. M. (2011). Evaluation: from precision, recall and F-measure to ROC, informedness, markedness and correlation.

38. Pradeep, K. S. and Rajesh K. (2014). The Evaluation of Forecasting Methods for Sales of Sterilized Flavoured Milk in Chhattisgarh. *International Journal of Engineering Trends and Technology (IJETT)*, 8 (2), 98-112.
39. Rakesh, K. and Dalgobind, M. (2013). Application of proper forecasting technique in Juice production: A case study, *global journal of researches in engineering, Industrial Engineering*, 13 (4), 42-47.
40. Satya P., Ramasubramaniam V. and S.C. Mehta, S. C. (2007). Statistical models for milk production in India, *Journal of Indian society of Agriculture and statistical* 61 (2),80-83.
41. Sokolova M. and Lapalme G. A (2009). Systematic analysis is of performance measures for classification tasks, *Information processing & management*, 45(4), 427-437.
42. Spedding, T. A. & Chan, K. K. (2000). Forecasting demand and inventory management using Bayesian time series. *Integrated Manufacturing Systems*, 11 (5), 331-339.
43. Terui, N., and Van Dijk, H. K. (2002). Combined forecasts from linear and nonlinear time series models, *International journal of forecasting*, 18,421-438.
44. Van Sommeren, F.A.H. (2011). Improving forecast accuracy- Improving the baseline forecast for Cheese products by use of statistical forecasting. A master thesis submitted to supply chain department of FrieslandCampina Cheese, University of Twente.
45. Wacker, G. J. and Lummus, R. R. (2002). Sales forecasting for strategic resource planning, *International journal of operations & production management*, 22(9),1014-1031.
46. Xu, B. and Ouenniche, J. (2012). Performance evaluation of competing forecasting models: A multidimensional framework based on MCDA, *Expert systems with applications*, 39 (9), 8312-8324.
47. Zhao, X., Xie, J., & Leung, J. (2002). The impact of forecasting model selection on the value of information sharing in a supply chain, *European Journal of Operational Research*, 321-344.

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ANALYSIS OF THE IMPACT OF OIL PRICE CHANGES ON THE GDP PER CAPITA OF OPEC COUNTRIES

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Abstract

Energy is regarded as the primary source and driver of economic growth and its existence is undebatable for a modern economy. Energy also plays a role in reducing poverty, increasing productivity and improving the quality of life. It also affects sustainable social development and economic growth. Currently, almost all aspects of life depend on oil extraction. The present world is centred on oil, which has been the driver of world economy for many years and, at present, it cannot entirely be replaced. Crude oil is also considered as a commodity asset, whose price is a case of concern for many investors, which transforms this physical asset into a sophisticated financial product. The objective of the paper is to deal with the oil price changes and their effect on economic development on petroleum exporting countries. It will analyse the impact of the change in the price of oil on the GDP per capita of OPEC countries. It is assumed that oil prices strongly influence the economy of net oil exporting countries.

Key words: *oil price, change, GDP, OPEC, statistical methods*

JEL Classification: E30, L 71, Q41

Introduction

The relationship between oil price changes and certain indicators can be analysed in many ways. The causality relationship between oil prices and economic output is investigated. For this reason, the concept of causality is used as proposed by Granger (1969), hereafter known as Granger causality. The theory has been widely used by economists for over three decades. According to Granger if one considers two variables X and Y , X causes Y if the current value of Y can be better predicted by using past values of X . The concept has been widely used in time-series analysis and also recently in a panel data context. The causality concept is applied to measure the influence/impact of oil prices on economic output of groups of selected country groups.

Oil price fluctuations are regarded as one of the causes for business cycle fluctuations. The 2000's was characterized by a large amount of oil price increases that had a weak effect on oil-importing countries while in the 1970's countries were depending on oil.

Some papers were aimed at investigating the correlation of oil prices and macroeconomic activity and exploring the impacts of oil shocks from the demand side. A decrease in crude oil price was regarded as an inflationary shock (Pierce-Enzler, 1974) or a transfer of wealth from importing to exporting countries, resulting in changing trade patterns (Hickman et al., 1987), which depends on energy-import intensity. The bigger the intensity, the bigger the impact on macroeconomy.

An oil price increase can also adversely affect consumption, investment and employment. There are different transmission channels through which oil prices may have an impact on the economy, for example the oil price-GDP relationship. Darby (1982) and Hamilton (1983) assumed that several economic recessions were preceded by sharp oil price rises. However, empirical studies of the 1980's concluded that oil prices had much lesser impact on economic output.

Most studies mainly pay attention to output, inflation and unemployment. Hamilton (1983) identified a Granger-causal relationship between oil price changes and variations in some macroeconomic indicators such as GNP (negative correlation) and unemployment rate (positive correlation) in the US.

Gisser-Goodwin (1986) concluded on their empirical data collected between 1961 and 1982 that oil prices could still be used as predictors of GNP growth.

While most studies assumed a symmetric specification from oil prices to GDP, asymmetric specification was detected by Mork (1989) and Hamilton (1996).

Hooker (1996) identified causality between oil prices and GDP, and Hamilton (1996) detected a stable statistical relationship between oil price changes and GDP. The oil price-GDP relationship interaction and transmission channels helped understand how oil prices may influence a macroeconomic aggregate such as GDP.

Rotemberg-Woodford (1996) expressed their doubt whether a stable, long-term relationship between oil prices and other macro-economic variables existed. They estimated that a 10% increase in oil price contracts output by 2.5%, 5 or 6 quarters later. According to Finn's (2000) model an oil price shock decreases energy use.

Hooker (1999) analysed the oil price- GDP relationship from 1954 to 1995. He concluded that oil prices had a direct effect on output before 1980 but afterwards, other indirect channels emerged. Backus-Crucini (2000) found that changing terms of trade is subject to increased oil price volatility, as opposed to fluctuations in exchange rates.

Bercement et al. (2009) analysed the relationship between oil prices and output growth Findings are that oil price increase have a significant and positive

impact on the output of Algeria, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Syria and ARE while oil prices do not seem to have a significant impact on the output of Bahrain, Djibouti, Egypt, Israel, Jordan, Morocco and Tunisia. Aliyu (2009) followed oil price effects on real macroeconomic activity in Nigeria and concluded that oil price shocks affect real GDP growth.

Fuhrer and Moore (1995) and LeBlanc-Chinn (2004) carried out empirical studies on oil effects on macroeconomic variables and also analysed the relationship between unemployment and oil price shocks similarly to Loungani (1986); Darby (1982) and Gisser-Goodwin (1986).

According to Bouchaour and Al-Zeaud (2012) the oil price fluctuation in oil exporting countries influence five macroeconomic variables (namely, real GDP, unemployment, inflation, money supply, real exchange rate) as it turns out from their data collected from 1980 to 2001. As a conclusion, oil prices had no important impact on most variables in the short term although they had a positive effect on inflation and a negative effect on real effective exchange rate. Iwayemi-Fowowe (2011) examined Nigeria and concluded that oil price shocks did not significantly affect most macroeconomic variables in Nigeria between 1985 and 2007.

Most results showed that linear and positive oil shocks have not caused output; government expenditure; inflation; and the real exchange rate. It was concluded that oil prices fluctuations are related to the growth (decline) in real GDP in the long term while in the short term (four quarters) rising oil prices do not only result in inflation and economic growth negatively or positively but also induce real effective exchange rate appreciation.

Material and Methods

The economic development of countries was primarily examined by GDP per capita as one of the most widely accepted general indicator of economic development as well as its changes. To analyse the impact of oil price change on GDP per capita 13 OPEC countries were selected, whose GDP per capita values were examined through the 15-year data series (2002-2016).

OPEC Countries (including abbreviations) in the study were as follows:

1. Saudi Arabia (SAU)
2. Algeria (DZA)
3. Angola (AGO)
4. Ecuador (ECU)
5. Indonesia (IDN)
6. Iran (IRN)
7. Iraq (IRQ)
8. Kuwait (KWT)
9. Libya (LBY)
10. Nigeria (NGA)
11. Qatar (QAT)
12. United Arab Emirates (ARE)
13. Venezuela (VEN)

The estimated GDP per capita (thousand USD) was abbreviated as GDP pc during the analysis.

During the analysis, general statistical methods (descriptive statistics, regression, correlation calculations) were used and the results were illustrated by appropriate types of graphs.

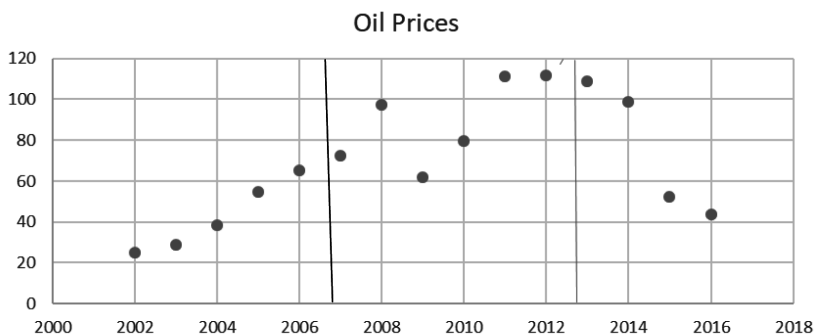
After these one- and two-way examinations graphic analyses were carried out and finally the countries are grouped on the basis of the investigated indicators. Multivariate methods are applied to explore the group formation of countries. The separation of group formation is checked by variance analysis. Finally, the groups are characterised by the indicators.

Research data were collected from World Bank National Accounts database and from OPEC Annual Statistical Bulletin.

Results and Debate

First, let us look at the evolution of oil prices over the period under review. (Figure 1)

Figure 1 The price of oil prices between 2002 and 2016 (USD /barrel)



Source: author's own editing based on OPEC statistical report

The figure clearly shows that oil price changes can be divided into 3 phases. The first period (2002-2008) shows a relatively steady increase in oil prices. During the period under review, oil prices were almost quadrupled and annual average growth rate was 25.4% while the average annual growth rate was USD 12.04.

In the following part the impact of oil prices on GDP per capita is examined.

The correlation between oil price change and GDP per capita (GDP pc)

First, the changes of per capita GDP over the period under review is presented, then the relationship between oil price and GDP / principal values in the case of the examined OPEC countries. From the time series data first the values of the mean, standard deviation and relative scattering of 15 years for GDP pc were calculated.

The following part will analyse the impact of oil change on OPEC Member States.

Table 1 The descriptive statistics of GDP per capita

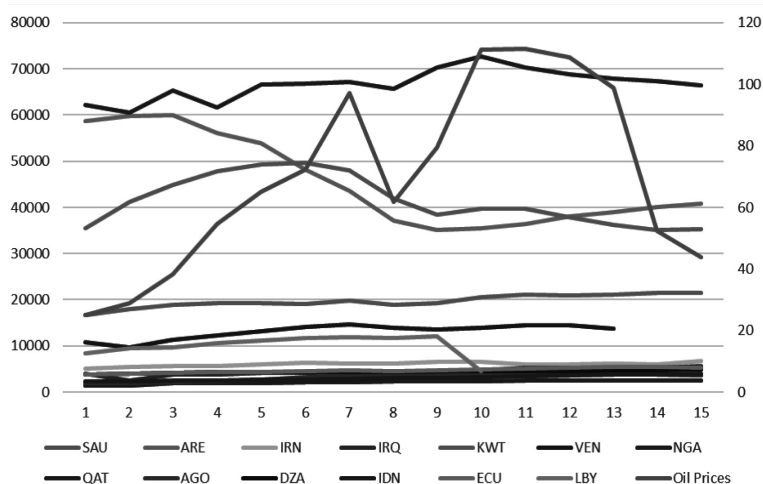
OPEC countries	SAU	ARE	IRN	IRQ	KWT	VEN
mean	19785.35	45332.63	6089.14	4539.48	40878.53	13078.73
s	1379.03	9320.15	505.07	845.61	5467.48	1591.87
s%	6.97	20.56	8.29	18.63	13.37	12.17

O P E C countries	NGA	QAT	AGO	DZA	IDN	ECU	LBY
mean	2153.35	66606.11	3143.06	4420.55	3107.77	4717.31	9138.57
s	379.99	3238.75	690.20	302.01	609.02	529.47	2420.78
s%	17.65	4.86	21.96	6.83	19.60	11.22	26.49

Source: author's own editing

Based on the descriptive statistics it can be stated that QAT with high GDP per capita shows a balanced moderate growth and thus can be characterized by a small relative scattering value. With the decline in its stronger GDP per capita (Figure 2), ARE follows with relatively high relative scattering ($s\% = 20.6\%$), while the relative deviation of KWT's moderate GDP per capita fluctuation is also more moderate ($s = 13.4\%$).

Figure 2 Development of oil prices and GDP per capita in time (2002-2016)



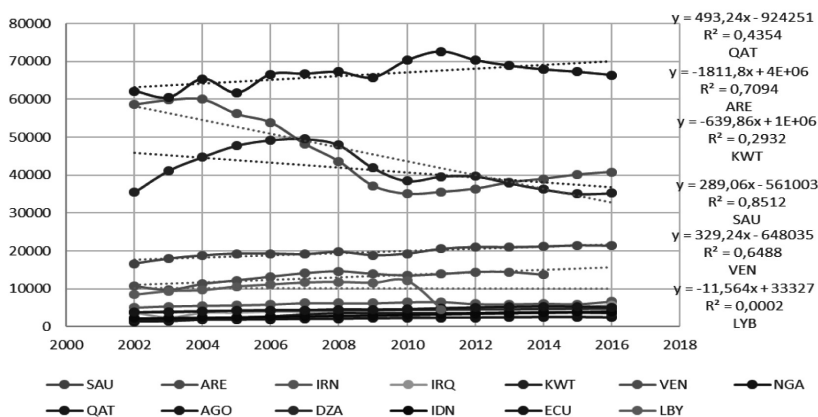
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The relative scattering of the other countries with a relatively low GDP per capita ranges widely (from 7% to 26.5%). There is no clear link between the GDP per capita and the relative scattering value.

The above figure clearly shows that the decline in the oil price did not affect the growth of the GDP per capita value of the most advanced country, QAT. Two advanced oil exporting countries experienced a decline in GDP per capita in the years prior to the decline in oil prices: KWT and ARE. VEN and SAU with a much smaller GDP per capita also did not react sensibly to a relatively stable change in oil prices for the average value of \$ 13 (VEN) and US \$ 19 (SAU), with a moderate increase over the period under review. The annual average growth per person is approximately USD 262 (SAU) and USD 329 (VEN). LBY, which is still in the middle of the OPEC country group, has reacted sensibly to the decline in oil prices, GDP per capita significantly decreased.

The other 7 countries in the OPEC group have low GDP per capita (less than USD 10,000 / person). Of these, two countries showed moderate RDA (s% = 8,2%), DZA (s% = 6,8%) while the other more pronounced fluctuations (11% to 21% relative scattering values, respectively) over the period under review for GDP per capita (Figure 3).

Figure 3 Changes in GDP/capita values in time (2002-2016)

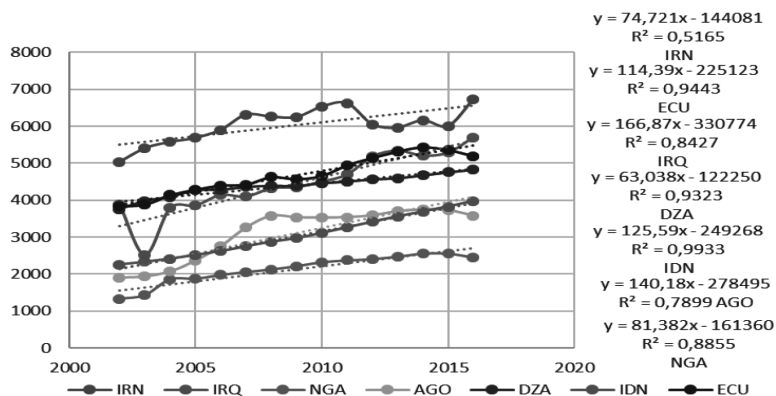


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The countries with the 7 lowest GDP per capita figures are illustrated in a separate graph so that the GDP per capita values can be better seen in time. (Figure 4)

The figure shows that almost all countries have experienced a decline after the oil price decline. Only one country is the exception: IDN, where the GDP per capita has been growing steadily.

Figure 4 Changes in GDP/capita values in time (2002-2016)

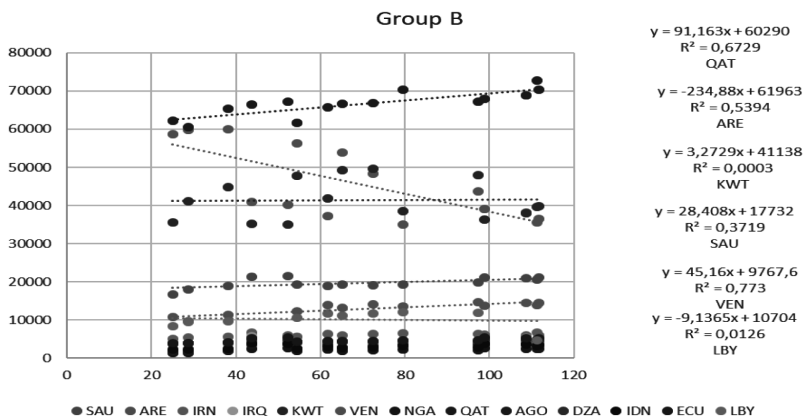


Source: authors' own editing

The figures below (Figure 5 and Figure 6) present the relationship between oil price and GDP per capita. It is conspicuous that in a country (ARE) the relationship is negative ($r = -0.72$), i.e. the change in GDP per capita is contrary to the oil price change. There are probably other (economic) background variables, and we do not measure the effect of oil change directly.

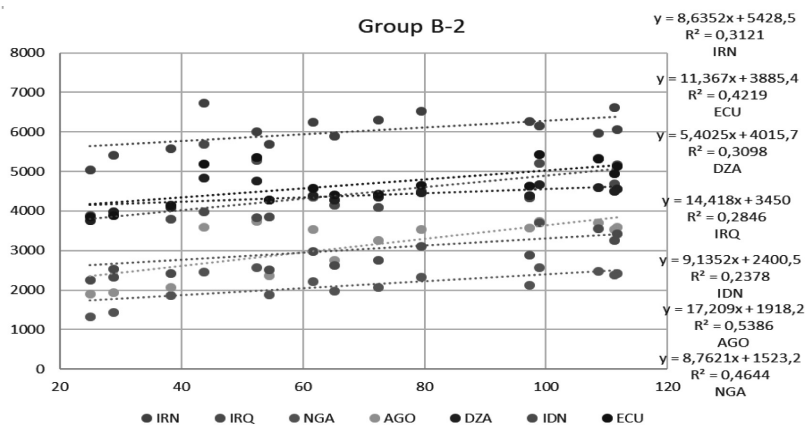
It can be seen from the figures that the GDP per capita stronger dependence is due to the yearly effect (changing the general economic environment) and oil price change is not clearly detectable. In some cases, the relationship can be statistically verified, such as in QAT, where oil and GDP per capita relationship is tight ($r = 0.82$), while in the case of KWT, oil price change does not show a significant relationship with GDP per capita.

Figure 5 The main correlations between oil price and GDP per capita (Part 1)



Source: authors' own editing

Figure 6 The main correlations between oil price and GDP per capita (Part 2)



Source: authors' own editing

The impact of the annual effect and the oil price is shown in Table 2 for each country.

Table 2 Comparison of the tightness of correlation between GDP per capita values and oil prices and the annual effect

Group B	r (oil)	r (year)
SAU	0.57	0.90
ARE	-0.72	-0.80
IRN	0.43	0.77
IRQ	0.45	0.93
KWT	0.07	-0.61
VEN	0.88	0.81
NGA	0.64	0.92
QAT	0.82	0.57
AGO	0.70	0.85
DZA	0.47	0.97
IDN	0.37	1.00
ECU	0.58	0.96
LBY	0.00	-0.53

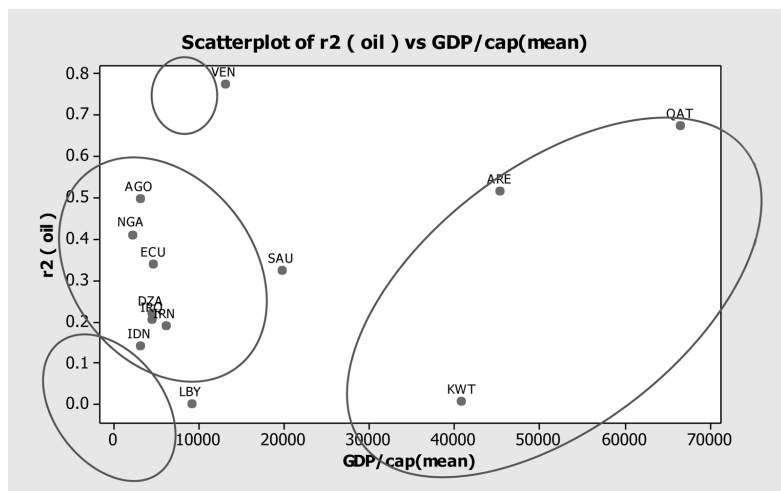
(Critical value on 5% significance level $r=0.497$)

Source: authors' own editing

The values indicated by the yellow are not significant, so in these cases there is no correlation between the effect of the affecting factor (in our case the oil price) and GDP per capita.

Figure 7 shows that OPEC countries can be classified into four groups according to their oil price change exposure.

Figure 7 Grouping the countries of Group B based on GDP/capita and dependency on oil prices



Source. authors' own editing

Based on Figure 7 the following grouping can be suggested (Table 3).

Table 3 Groups of countries based on GDP per capita and dependency on oil price

determination coefficient		GDP/capita			
r^2		<4 000	4 000 - 10 000	10 000 - 20 000	40 000 <
< 0,3		IDN,	DZA, IRQ, IRN, LYB		KWT
0,3 - 0,6		NGA, AGO	ECU	SAU	ARE
0,6 <				VEN	QAT

Source: authors' own editing

Conclusion

The impact of oil price change on GDP per capita in 7 of the 13 countries was significant and there were no verifiable links in 6 cases. It is worth mentioning that it had the least impact on the most developed country (QAT). (A stable economy is less affected by changes in other economic environments.) We also had a smaller and negative effect on LBY due to the deteriorating economic situation. Looking at the data of Table 2 it can be concluded that the yearly effect (general economic environment) had a significant effect on each county.

We can see certain measures taken in OPEC countries to smooth the economic impacts of oil dependency. One of the examples for the above is Saudi Arabia. The world's largest oil exporter is now restructuring government departments with the objective of reforms for a post-petroleum era. By means of this programme entitled Vision 2030 the country is preparing for a future that is less dependent on oil over the next decade and a half.

In general, it can be stated that the yearly effect (general economic environment, including oil price) has a greater role to GDP per capita than just oil price change. Countries with a more stable economy or not only relying on oil export are less exposed to oil price fluctuations.

As a summary we can state that OPEC countries respond differently to both the yearly impact and oil price change.

Bibliography

1. Aliyu, S. U. R (2009) Oil Price Shocks and the Macroeconomy of Nigeria: A Non-linear Approach. MPRA Working Paper, Bayero University, Kano.
2. Backus, D. and Crucini, M. (2000) "Oil Prices and the Terms of Trade". *Journal of International Economics*, 50, 185-213
3. Bercement, Ceylan and Dogan (2009) The Impact of Oil Price Shock on the Economic Growth of MENA Countries. *The Energy Journal*, Vol. 31, No. 1.
4. Bouchaour, C. and Al-Zeaud, H. (2012) Oil Price Distortion and Their Impact on Algerian Macroeconomics. https://www.researchgate.net/publication/271316885_Oil_Price_Distortion_and_Their_Impact_on_Algerian_Macroeconomic (Retrieved on 01 March 2019)
5. Darby, M. R. (1982) The Price of Oil and World Inflation and Recession *American Economic Review* 72: 738 751.
6. Finn, M. G. (2000) Perfect Competition and the Effect of Energy Price Increase on Economic Activity. *Journal of Money, Credit and Banking* 32: 400 416.
7. Fuhrer, J and Moore, G. (1995) Inflation persistence. *The Quarterly Journal of Economics*, 1995, Vol. 110, Issue 1, 127-159
8. Gisser, M. and Goodwin, T.H. (1986) Crude Oil and the Macroeconomy: Tests of Some Popular Notions: Note. *Journal of Money, Credit and Banking*, 18, 95-103.
9. Granger W. J. (1969) Investigating Causal Relations by Econometric Models and Cross Spectral Methods. *Econometrica* 36, 424-438.
10. Hamilton, J. D. (1983) Oil and the Macroeconomy since World War II *Journal of Political Economy* 91: 228 248.
11. Hamilton, J.D.(1996) This is What Happened to the Oil Price-Macroeconomy Relationship. *Journal of Monetary Economics* 38: 215 220.

12. Hickman B., H. Huntington and J. Sweeney (1987) *Macroeconomic Impacts of Energy Shocks* Amsterdam: North Holland.
13. Hooker, M. A. (1996) What Happened to the Oil Price Macroeconomics Relationship? *Journal of Monetary Economics* 38: 195-213.
14. Hooker, M. A. (1999) "Oil and the Macroeconomy Revisited" Mimeo, Federal Reserve Board, Washington, D. C.
15. Iwayem, A., and Fawowe, B.(2011)"Oil and the Macroeconomy: Empirical Evidence from Oil Exporting African Countries" *OPEC Energy Review*, 35, 3, 227-269
16. LeBlanc, M. and Chinn, M. D. (2004) Do High Oil Prices Presage Inflation? The Evidence from G-5 Countries UC Santa Cruz Economics Working Paper No. 561; SCCIE Working Paper No. 04-04
17. Loungani P.(1986) "Oil Price Shocks and the Dispersion Hypothesis". *Review of Economics and Statistics* 58, 536-539.
18. Mork, K. A. (1989) Oil and the Macroeconomy when Price Go Up and Down: An Extension of Hamilton's Results. *Journal of Political Economy* 97: 740-744.
19. Pierce, J. and J. Enzler (1974) The Effects of External Inflationary Shocks. *Brookings Papers on Economic Activity* 1, 13-61. *OPEC Annual Statistical Bulletin* (2019)
20. Rotemberg, J. and Woodford (1996) Imperfect Competition and the Effect of Energy Price Increases on Economic Activity. *Journal of Money, Credit and Banking* 28: 549-577
21. World Bank World Development Indicators (2019)
22. <https://asb.opec.org/index.php/data-download>

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FOREST STOCK AS A RENEWABLE ENERGY RESOURCE WITHIN THE FRAMEWORKS OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT IN LATVIA: PROS AND CONS

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Abstract

The issue of Energy Efficiency is one of the most urgent for the contemporary world, and one of its components – renewable energy resources – is in the centre of attention. Latvia, being one of the greenest countries in the world, uses renewable energy resources intensively. Nevertheless, use of one of these resources, forests stock (firewood) seems to be quite dangerous for environmental health of the country. The goal of the research is to reveal some of pros and cons of using this resource for energy production. The authors do not set the goal to show all advantages and disadvantages of employing this renewable energy resource, but just to arise the problem of double nature of using the renewable resources. The authors present statistical (correlation and regression) analysis, based on the data for years 2010 to 2018.

Key words: *Renewable energy resources, Forests, Statistical analysis, Environmental performance index*

JEL Classification: O13, Q01, Q23

Introduction

The latest decades the issues of economic development have become the centre of hot discussions. The traditional indicators of the level of economic development of the countries have become insufficient with the change of the attitude

towards the well-being and health of national economy. For example, Stiglitz, J. et al (Stiglitz, Sen, Fitoussi, 2010) demonstrates these ideas in the Report to the Commission on Measuring Economic Performance and Social Progress. The report states that such traditional measure as GDP does not reflect sufficiently all the important factors of national development, paying no attention to the social and the ecological components. Nevertheless, these parts of life of any country are becoming more and more significant. As a result, the concept of sustainable development gained its position among the specialists (Ozola-Matule, 2007). The principal point of this concept is the equal importance of three factors, capable of presenting the certain part of the country prosperity (see Fig.1)

Figure 1 Dimensions of Sustainability



Source: UK Government, 1999

The overlapping circles show the areas where these independent parts create common fields, which are in the centre of numerous contemporary scientific researches. Therefore, there are three areas: Economic, Social, and Environmental. For many years they were considered independently, while nowadays their interdependence is obvious. There are new areas of scientific interests, occurred at the junction of these fields. Economics traditionally studied issues of profit, income and costs, or economic growth, consumption and savings, and so on. Social sphere concentrated on standard of living, education, medical care, community, equality. The contemporary researches at the intersection of Economic and Social fields give rise to the problems of Business Ethics, Fair Trade, Workers' Rights, etc. Environmental areas traditionally concerned Environmental Management, Resource employment, Pollution prevention, protection of clean water, air, land. Economic and Environmental fields together create such scientific topics as Energy Efficiency, Subsidies and their role in Natural Resources employment, Incentives for natural resources use. The Social and Environmental areas are sources of, for instance, such researches as Study of Environmental Justice, Natural Resource Stewardship locally and globally. And only the area, where all three areas are overlapping, gives the situation of sustainable development.

This research concerns the junction of Environmental and Economic fields and reveals the issues of efficient employment of such renewable energy resource as fuel wood in Latvia.

The goal of the research is to consider pros and cons of using forests stocks as renewable energy resource.

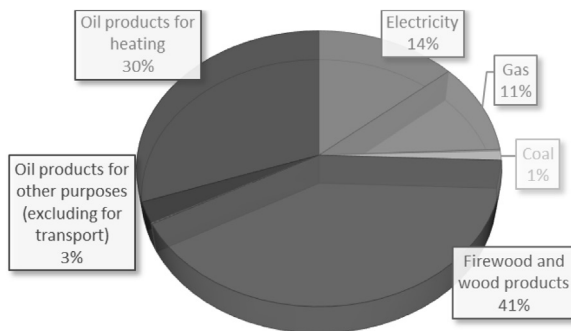
Energy efficiency issues in recent decades have become increasingly important, attracting the attention of scientists and researchers, government officials, as well as the public. This attention is primarily associated with environmental disasters, depletion of natural resources, energy shortages, climate change, increased emissions, and the greenhouse effect. All these negative trends, first of all, are associated with the growing consumption of energy. (Wan, Li, Pan, Lam, 2012; Santamouris, 2016)

Humanity not only consumes a huge amount of energy resources, but also constantly increases their consumption. There are many forecasts (BP, 2010; IEA, 2009; IEA, 2014; Levine, Price, Martin, 1996; Ürge-Vorsatz, Harvey, Mirasgedis, Levine, 2007) on the continued growth of world demand for carbonates. There expected growth of oil and natural gas consumption (30% and 50% respectively from 2007 to 2035). It is not surprising, this jump in energy consumption is expected to result in a 52% increase in greenhouse gas emissions from 2005 to 2050, and an expected increase in CO₂ by 2050 – by 78%. (OECD, 2008; IPCC, 2014). This is bound to happen if radical changes in current energy-related models are not adopted. The growth of the earth's population and, accordingly, the increasing volume of economic activity facilitate this tendency.

The relationship between GDP growth and energy consumption is important for the development of effective energy and environmental policies that will contribute to the sustainable development of the national economy. Inefficient use of energy leads, in turn, to global warming and climate change, which affects GDP growth.

Latvia is proud of using renewable resources for energy production; in 2017 the percentage of renewable resources was almost 55% (54.58%) of total resources use (see Fig.2). (Statistical Yearbooks of Latvia, 2017)

Figure 2 Energy production resources, year 2017 (generated on the basis of Latvian Statistical Bureau data)



Source: authors' calculation on the basis of statistical data

The most important local renewable energy resource at present are wood and water. Latvia has significant peat resources at its disposal, however, their use in energy production is insignificant. Wind and biogas energy is used, there are also

possibilities to use solar energy, however, the proportion of these types of resources in energy production is small at present. The possibilities for the creation of new water energy capacities is limited. In turn, the unused resource of wood is substantial. Therefore, firewood/fuelwood employed for generating heating and hot water. The Strategy 2030 (Latvia2030, 2010) proclaims that production of centralised thermal energy is a substantial part of energy, which forms more than half of the consumption of primary energy resources, providing for the needs of inhabitants of Latvia for heat during the winter period, as well as for hot water. Latvia also uses thermal energy produced in cogeneration plants. Henceforth, in renovating the existing and building new heat plants and cogeneration plants, local energy resources – wood, straws, reeds and, using environmentally friendly methods of extraction, also peat – should definitely be used in the production of thermal energy.

Material and Methods

The scientific articles from various databases served as a theoretical fundamental for this research. The list of scientific publications used in the process of research is presented. The strategy of sustainable development of EU and particularly of Latvia are the strategic development documents, which presuppose the general way of development of the country in “*green direction*”, therefore they serve as a reliable source of information on governmental strategic planning.

Further, a hand-construct database of major ideas on sustainable development concept and the propositions of strategic development of Latvia in the area of efficient energy production basing on the renewable resources has been created by a textual search. Another area of a textual search referred to the issues connected with the environmental factors and their reflection on the environmental wealth and health of the country.

The research is based on the data obtained from Latvian Statistical Bureau. The information has been taken from Statistical Yearbooks of Latvia for years 2014, 2015, 2016, 2017 and 2018. Several tables comprise statistical data for years 2010-2018, taken from database of Latvian Statistical Bureau. Moreover, the latest information has been taken directly from the latest Latvian Statistical Bureau releases.

The statistical data have been processed via the Statistics 11 Package and Excel programme. Excel has been used for generating the main tables for further processing Statistics 11 Package, for calculations percentage of share of energy resources in final energy consumption and of the use of various renewable resources, which are presented in Statistical Data in numerical terms. Excel has also been used for calculation of difference in felling areas and forest regeneration areas. The presented diagrams have been created in Excel programme on the basis of generated statistical.

Then the Statistics 11 Package has been used for creation the correlation matrix and scatter plot diagrams. There have been considered such factors as annual production of heating energy using firewood, the general employment of renewable resources for heating and cooling but firewood, areas of dead and damaged forests in Latvia.

As additional analysis there has been also performed the regression analysis, implemented with the Statistics 11 Package, where the dependent factor was Environmental Performance Index (Environmental Performance Index, 2014; Environmental Performance Index, 2016; Environmental Performance Index, 2018), and independent variables – some of the above-mentioned factors.

Results and Debate

Results of Correlation Analysis

Latvia is one of the most successful and wealthy countries in the world if to consider the “green” aspect. For instance, according to the results of the study “Environmental Performance Index”, conducted by Yale and Columbia universities, in 2017 Latvia ranks 37 the greenest country among 180 countries in the world, gaining quite high scores. For example, environmental performance index is 66.12 (the first country in the rank is Switzerland, its score is 87.42), the environmental health score is 72.80, and biodiversity score is 61.66 (for Switzerland, these scores are, correspondently, 93.57 and 83.32). One of the greatest wealth of Latvia is its resources – biological diversity, forests, water, air. Unfortunately, these resources are not eternal. They are too valuable to be valued in monetary terms, but they add value to the country.

It is very easy to ruin these valuable things, and the usage of such renewable resource as forest stock (firewood) for energy production seems to be not so harmless. It is possible to predict that this resource usage can result in decreased areas of forests, increased areas of dead forests, reduced biodiversity, and other negative issues. Therefore, the correlation analysis, done with Statistics 11 Package, has been performed. The correlation matrix (see Fig.3) demonstrates the quite expected result.

Figure 3 Correlation Matrix

Correlations (Spreadsheet1_2)				
Marked correlations are significant at p < ,05000				
N=5 (Casewise deletion of missing data)				
Variable	firewood	renewable	dead forest	forest damage
firewood	1,000000	-0,629148	0,997503	0,831523
renewable	-0,629148	1,000000	-0,573291	-0,900276
dead forest	0,997503	-0,573291	1,000000	0,793108
forest damage	0,831523	-0,900276	0,793108	1,000000

Source: done by the authors on the basis of national statistics and with employment of Statistics 11 Package

First of all, it is necessary to mention the negative correlation between the use of other renewable resources (wind- and water- generated electricity) for heating purposes and all other factors. The relation between forests damage and other renewable energy sources is practically linear (-0.90). The correlation with dead forests is also reversed, but not so evident, its value -0.57. Possibly, the areas of dead forest depend not only on usage wood as a renewable energy resource. The negative correlation with using the firewood (-0.63) is obvious, since they are both used for heating purposes, and interchangeable, though, there are households in Latvia which can use only firewood for heating.

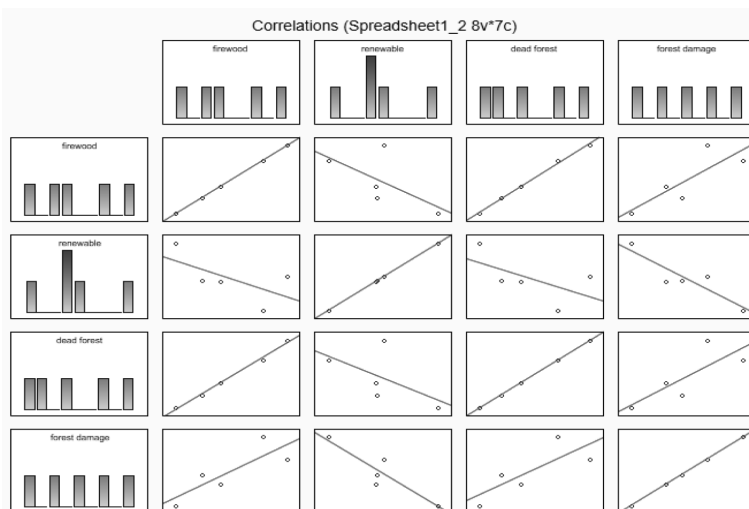
The correlation between dead forests areas and using firewood for heating purposes is direct and practically 1. The dependencies are not quite clear, since we do not know if dead forests are used for heating purposes, or vice versa, demand for heating results in dead forests. If to consider the relations between renewable

resources and dead forests, it is possible to conclude that the relation is nature-friendly, and dead forests are used as firewood, but in any case, this fact requires additional research. Nevertheless, high positive coefficient of correlation between forests damage and usage of firewood seems to be rather dangerous. It means, opposite to the intention of Latvia to move forward the concept of sustainable development and towards green economy within the frameworks of this concept, Latvia still permits damages to its great wealth – forests.

The correlation between damaged and dead forests (+0.79) also demonstrates the dangerous tendency – the damaged forests often continue their degradation and turn into the dead ones.

The vivid representation of these relations are presented in Fig.4

Figure 4 Scatter plot diagrams illustrating the correlation matrix
(generated by Statistics 11 package)



Source: done by the authors on the basis of national statistics and with employment of Statistics 11 Package

The obtained results allow discussion on the success of using such renewable energy resource as firewood.

Results of Regression Analysis

Additionally, there has been performed the regression analysis. Considering the great degree of correlations between the factors, it is obvious, the multiple regression analysis with these factors is impossible. Nevertheless, there is a supposition that Latvia receives quite high rank according to Environment Performance Index, though some factors of using the renewable energy resources can be considered as rather dangerous for Latvian nature and environment.

There have been conducted two regression analyses, the Environment Performance Index (Environmental Performance Index, 2014; Environmental Performance Index, 2016; Environmental Performance Index, 2018) serves as a dependent factor in both of them, and other renewable resources (but firewood) and forests damage are the independent factors. The regression analysis of the Environmental Performance Index and forests damage is presented in Fig. 5A, while the results of regression analysis of the Environmental Performance Index and other renewable resources but firewood are shown in Fig. 5B.

The regression analysis has demonstrated that forest damage has direct impact on Environmental Performance Index. Beta coefficient is positive. The quality of model is not high, the model explains only about 48% of cases ($R^2=0.4852$). Nevertheless, it shows that the high rank in the Environmental Performance Index is partly obtained at the expense of damaged forests. If to consider the results of correlation analysis presented above, and high degree of correlation between the usage of firewood and damaged forests, it is possible to conclude that the firewood, which is included in the list of renewable resources, used for energy production, contributes to increase in rank of the Environmental Performance Index and simultaneously it contributes to the forests damage. Unfortunately, the statistical data is not available for all considered years, and it is not possible to show regression directly with usage of firewood as a renewable energy resource.

The quality of the second model – the Environmental Performance Index as a dependent indicator and other renewable resources but firewood – is even worse. $R^2=0.4718$, so only about 47% of cases are explained by the model. Beta coefficient is negative. The only possible explanation for it is the fact that Latvia mostly uses the firewood as the renewable energy resource (see Fig.2), and other renewable resources are insignificant for energy production in Latvia.

Figure 5 (A,B) Regression analysis: Environment Performance Index as a dependent variable and forests damage (A) and other renewable resources, used for energy production (B) – independent variables (generated with the use of Statistics 11 Package)

Multiple Regression Results: Spreadsheet1_2		Multiple Regression Results: Spreadsheet1_2	
Multiple Regression Results		Multiple Regression Results (Step 1)	
Dependent: EPI	Multiple R = ,69656495	Dependent: EPI	Multiple R = ,68686040
	R ² = ,48520273		R ² = ,47177721
No. of cases: 5	adjusted R ² = ,31360365	No. of cases: 5	adjusted R ² = ,29570295
	Standard error of estimate: 9,494599468		Standard error of estimate: 9,617608627
Intercept: 52,495825668	Std.Error: 14,04628 t(3)	Intercept: 308,32827799	Std.Error: 142,6021 t(3)
forest damage b ⁺ =,697		renewable b ⁻ =-,69	

A

B

Source: done by the authors on the basis of national statistics and with employment of Statistics 11 Package

So, the obtained models are of very low quality, the coefficients of determination in both cases are lower than 0.5 (0.485 in A model and 0.472 in B model). The both independent variables are not significant for determination of

the dependent variable. The values of Fisher indicator in both cases are significantly lower than the table values with these degrees of freedom.

Therefore, the regression analysis indirectly supports the results of correlation analysis: the usage of the renewable resources for energy producing in Latvia have serious negative effects.

Discussion of Obtained Results

The obtained results create the field for discussing pros and cons of using firewood as a renewable energy resource.

On the one hand, using forests stocks as a resource for energy generation gives Latvia the significant advantage. It allows moving towards carbon-free society, which is advantageous for the country in both cases – environmental protection and decreased dependency on carbon-excavating countries. It is not a serious problem to use the areas after felling the forest for regeneration. Latvia thinks seriously about forests regeneration, and significant efforts are made in this direction. Nevertheless, the volumes of felled and regenerated forests are not comparable (see Table 1 and Fig.6).

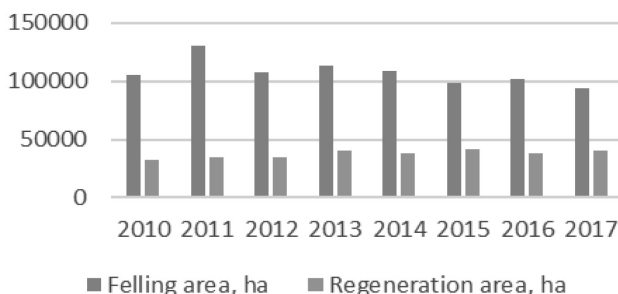
Table 1 Areas of felling and regenerating forests, ha

	2010	2011	2012	2013	2014	2015	2016	2017
Felling areas	105 618,5	130 770,0	107 362,9	113 744,0	108 841,2	98 389,1	101 830,7	94 238,5
Forests regeneration	32 205	35 230	35 230	40 266	37 986	41 653	38 636	40 399

Source: Latvian Statistical Bureau

As it is demonstrated in Table 1, the volumes of felled forests significantly higher than the volumes of regenerated forests. In some years, the felling areas are more than three times bigger than the regenerating ones. It is presented in Fig.6 more vividly.

Fig. 6 Areas of felling and regenerating forests, ha



Source: done by authors on the basis of information of Latvian Statistical Bureau

However, in recent years the difference between these indicators is constantly decreasing; unfortunately, this decrease is not quick enough.

Another factor, which is also very important, it is substantial time lag between seeding the forests and their mature state. This time lag can be for decades. During all these years the environmental health of the country is in danger.

It is not only the danger of not receiving enough degree of air cleaning. Much more serious problem in this case is decreased biodiversity. It is urgent problem for both flora and fauna diversity. For example, Angelstam P. et al (Angelstam, Naumov, Elbakidze, Manton, Priednieks, Rendenieks, 2018) show that green infrastructures for wood production and biodiversity conservation are inversely related and intensification of wood production threatens biodiversity.

There are also numerous researches devoted to survival of birds and factors, determining this survival. Among them such issues as decreased survival of birds in young compared to old coniferous forests, presenting the suboptimal habitat for some birds (Krama, Suraka, Hukkanen, Krams, 2013). In general according to Juutilainen, K. et al (Juutilainen, Mönkkönen, Kotiranta, & Halme, 2014), forest management has caused severe ecological degradation throughout the globe.

Therefore, the employment of such renewable resource for energy production as forests stock (firewood) cannot be considered as unambiguously advantageous for Latvia. It has both advantages and disadvantages.

The undoubted advantage of using renewable energy resources, as it is mentioned in Latvia 2030 Strategy, is movement to carbon-free society, less dependence on the countries-carbonates exporters, increased environmental protection. The correlation analysis has demonstrated that increased usage of other renewable resources but firewood results in decreased damage to forests and reduced areas of dead forests, which is great for the country environmental health.

Nevertheless, the biggest part of resources for energy production, used by Latvia, is firewood (41%, see Fig.2), and usage of this resource has more disadvantages than advantages. To begin with, the forests regenerating areas in Latvia are significantly less than forests felling areas; then, there is a great time lag of several decades between seeding forests and mature forests; during these decades the biodiversity suffers. The firewood as energy source has practically linear correlation with dead forests (coefficient 0.9975) and very high correlation with damaged forests (coefficient 0.8315). Moreover, the high rank of Latvia in the Environmental Performance Index is partly obtained at the expense of damaged forests.

Conclusion

Therefore, the employment of forests as a renewable source of energy production has its own advantages and disadvantages.

On the one hand, it gives the certain degree of independence from carbon sources.

On the other hand, it is possible, that this positive outcome occurs at the extent of decreased areas of forests and decreased biodiversity both in flora and fauna. Moreover, statistical analysis (correlation analysis and regression analysis) has shown that the usage of forests stock (firewood) as a resource for energy production has practically linear impact on increased areas of dead and damaged forests. Since Latvia uses mostly firewood as a renewable resource, the high rank in the Environmental Performance Index is obtained to certain degree due to increased areas of damaged forests.

In any case, Latvia continues to be one of the greenest countries in the world, and efficient and appropriate uses of the green potential enable its maintenance, conservation and augmentation in a profitable manner. Care for the environment no longer presents an obstacle and a burden for economic development but is rather a source of income for the state and its residents.

At the global and European level, Latvia presents responsible and sustainable management of the natural treasures – forests and other renewable resources.

Bibliography

1. Angelstam, P., Naumov, V., Elbakidze, M., Manton, M., Priednieks, J., Rendenieks, Z. (2018). Wood production and biodiversity conservation are rival forestry objectives in Europe's Baltic Sea Region. *Ecosphere*, Vol.9, Issue 3. <https://doi.org/10.1002/ecs2.2>.
2. BP. (2010). *British Petroleum Statistical Review of World Energy*, 6.M.: British Petroleum
3. Environmental Performance Index (2014). Yale Center for Environmental Law & Policy, Yale University, Center for International Earth Science Information Network, Columbia University, In collaboration with the World Economic Forum, <https://epi.envirocenter.ya>.
4. Environmental Performance Index. (2016). Yale Center for Environmental Law & Policy, Yale University, Center for International Earth Science Information Network, Columbia University, In collaboration with the World Economic Forum, <https://epi.envirocenter.ya>.
5. Environmental Performance Index. (2018). Yale Center for Environmental Law & Policy, Yale University, Center for International Earth Science Information Network, Columbia University, In collaboration with the World Economic Forum, <https://epi.envirocenter.ya>.
6. IEA. (2009). *Energy Efficiency in the North American Existing building Stock*. International Energy Agency.
7. IEA. (2014). *CO2 emissions from fuel combustion*. International Energy Agency.
8. IPCC. (2014). *Summary for Policymakers*. Intergovernment Panel of Climate Change http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-forpolicymakers_approved.pdf.
9. Juutilainen, K., Mönkkönen, M., Kotiranta, H., & Halme, P. (2014). The effects of forest management on wood-inhabiting fungi occupying dead wood of different diameter fractions. *Forest Ecology and management*, vol.313, pp. 283–291, DOI: 10.1016/j.foreco.2014.11.019.
10. Kotiranta, H., & Halme, P. (2014). The effects of forest management on wood-inhabiting fungi occupying dead wood of different diameter fractions. *Forest Ecology and management*, 313, 283–291.
11. Krama, T., Suraka, V., Hukkanen, M., Krams, I. (2013). Physiological condition and blood parasites of breeding Great Tits: A comparison of core and northernmost populations. *Journal of Ornithology* 154(4), DOI: 10.1007/s10336-013-0969-9.
12. Latvia2030. (2010). *Sustainable Development Strategy of Latvia until 2030*, Saeima of the Republic of Latvia, http://www.pkc.gov.lv/sites/default/files/inline-files/LIAS_2030_en_1.pdf.
13. Levine, M.D., Price, L., Martin, N. (1996). Mitigation options for carbon dioxide emissions from buildings. A global analysis.. *Energy Policy* 24 (10–11), p. 937–949..

14. OECD. (2008). Climate change: Meeting the challenge to 2050. , OECD: <http://www.oecd.org>.
15. Ozola-Matule, A. (2007). Latvian Green Movement. Sustainable energy strategy for Latvia: vision 2050 , Samsø, Denmark, http://www.inforse.org/europe/pdfs/S_S07_V_Latvia.pdf: Energy Academy.
16. Santamouris, M. (2016). Innovating to zero the building sector in Europe: minimising the energy consumption, eradication of the energy poverty and mitigating the local climate change. Solar Energy, <http://dx.doi.org/10.1016/j.solener>.
17. Statistical Yearbooks of Latvia (2016). Latvian Statistical Bureau.
18. Statistical Yearbooks of Latvia. (2014). Latvian Statistical Bureau.
19. Statistical Yearbooks of Latvia. (2017). Latvian Statistical Bureau.
20. Statistical Yearbooks of Latvia. (2018). Latvian Statistical Bureau.
21. Statistical Yearbooks of Latvia. 2015. Latvian Statistical Bureau.
22. Stiglitz, J., Sen, A., Fitoussi, J. (2010). Mismeasuring Our Lives: Why GDP Doesn't Add Up. The New Press.
23. UK Government. (1999). The Requirements for Sustainable Energy. Department for Business, Energy & Industrial Strategy. http://www.esru.strath.ac.uk/EandE/Web_sites/99-00/bio_fuel_cells/groupproject/library/sustainableenergy/text.htm
24. Ürge-Vorsatz, D., Harvey, L.D.D., Mirasgedis, S., Levine, M.D. (2007). Mitigation CO emissions from energy use in the world's buildings. Building Resource Infrastructure. 35 (4), p. 379–398..
25. Wan, K.K.W., Li, D.H.W., Pan, W., Lam, J.C. (2012). Impact of climate change on building energy use in different climate zones and mitigation and adaptation implications.. Applied Energy 97 , p. 274–282.

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THE IMPACT OF ETHICAL LEADERSHIP BEHAVIOR ON COMMUNICATION SATISFACTION AND ORGANIZATIONAL LEARNING IN COMPANIES IN SERBIA

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Abstract

The paper presents the results of research into the influence of ethical leadership behavior (EL) on communication satisfaction (CS) and organizational learning (OL) in companies in Serbia. In addition, the moderating effects of gender and age on the observed relationships were examined. The data were obtained by using questionnaires completed by N = 380 middle managers from 102 companies in Serbia. The statistical methodologies that were used in the data analysis are: descriptive statistics, correlation analysis, regression analysis and hierarchical regression analysis to test the moderating effects. All correlations between the dimensions of ethical leadership behavior and those of communication satisfaction and organizational learning are positive and statistically significant. Ethical leadership behavior has a double impact: a) an individual, personal, and human one that affects communication satisfaction more, and b) an organizational, systemic one which has a greater effect on organizational learning.

Key words: *ethical leadership, communication satisfaction, organizational learning, Serbia.*

JEL Classification: D23, O15, J24

Introduction

The centuries-old topic under discussion is the leader's responsibility in order to ensure ethical and moral leadership (Resick, Hanges, Dickson, & Mitchelson, 2006). Leaders have a responsibility to ensure standards of moral and ethical behavior (Resick et al., 2006; Cullen, Victor, & Stephens, 1989). According to Daft (2011), in addition to their business, ethical leaders also have to care for their employees, customers, suppliers, communities, shareholders and themselves. Ethical leadership behavior is placed on the list of priorities in organizations due to the strong impact of trust and the reputation of the organization and its leaders (Klashoven, Den Hartog, & De Hoogh, 2011; Mendonca, 2001), which significantly affects the recruitment of new employees (Ogunfowora, 2014). However, the number of empirical studies about ethical leadership behavior is limited, and up to date multilevel research is rare in this area (Den Hartog & De Hoogh, 2009). Of particular importance for this paper are the impacts of ethical leadership behavior on communication satisfaction and organizational learning.

Leaders learn how to develop ethically based on academic knowledge and their own research (Binns, 2008). Ethical leaders are role models of normatively acceptable behavior (Brown, Trevino, & Harrison 2005; Kalshoven & Den Hartog, 2009). Ethical leaders also influence knowledge sharing behaviors (Brown & Treviño, 2006). Based on this we can conclude that leaders who behave ethically extend their knowledge and openly talk about new findings and ideas with their employees, motivate their employees to learn and develop skills, and are both innovative and willing to share knowledge. Similarly, the survey results presented in the reference (Ma, Cheng, Ribbens, & Zhou, 2013), show that ethical leadership behavior is positively related to employee creativity, when the moderators of the relationship are knowledge sharing and self-efficacy. Ethical leadership behavior encourages employees to invest additional efforts in the workplace and to help each other to achieve task-related goals (Kalshoven & Boon, 2012; Kalshoven, Den Hartog, & De Hoogh, 2013). The research results presented in the reference (Piccolo, Greenbaum, Den Hartog, & Folger, 2010), show that ethical leadership behavior has an effect on job performance and improves job characteristics, especially the importance of work tasks and job autonomy. In this way, employees are encouraged to make further efforts in the workplace and be productive at work. Job autonomy allows individuals to utilize existing knowledge and skills more effectively, to promote the development of new knowledge and make contributions to the workplace (Parker, Wall, & Jackson, 1997; Piccolo et al., 2010).

The position of leaders is such that they can influence the emotions of employees at work, and this is achieved through communication and behavior (Bass, 1985; Brown & Mitchell, 2010). Transparency and open communication are important features of ethical leadership behavior. Ethical leaders talk openly to their followers about ethical behavior and provide them with a voice (Brown et al., 2005). Ethical leaders gain their followers' attention by pointing out an ethical message within an organizational context and direct the attention of employees to ethical standards, highlighting their importance in an explicit way (Treviño et al., 2003; Brown et al., 2005). In addition, individuals who have common ethical values develop higher levels of trust and achieve better communication (Schmitike et al., 2005; Brown et al., 2010).

Communication is crucial to ethical leadership as a social learning process (Brown et al., 2005). Men (2015) investigated the contribution of ethical leadership to internal communication effectiveness, and showed that ethical leadership behavior

affects an organization's symmetrical communication system. It is necessary for ethical leaders to be open and to clarify performance goals and expectations, so that employees know what is expected of them and how their impact in the workplace meets the criterion (De Hoogh & Den Hartog, 2008). In addition, ethical leaders use rewards, penalties and open communication to foster ethical conduct among their followers (Treviño, Brown, & Hartman, 2003; Brown et al., 2005). When it comes to similar surveys conducted in companies in Serbia, as well as the cases in this paper, it is useful to note the result obtained in the reference (Nikolić, Vukonjanski, Nedeljković, Hadžić, & Terek, 2013), where it is shown that high LMX leads to the strengthening of the relationship between internal communication satisfaction and job satisfaction.

The research presented in this paper is inspired by the desire, but also the need to determine the direction and intensity of the impact of ethical leadership behavior on communication satisfaction and organizational learning in companies in Serbia. The moderating effect of the respondents' gender and age on the observed relationships was also examined. This type of research has not been done in companies in Serbia. According to the findings of the authors of this paper, studies that specifically examine the impact of ethical leadership behavior on communication satisfaction and/or organizational learning have not been carried out in the world either. If such studies exist, then they are certainly rare. All this gives added significance to the results of this study. The results of this study are presented below.

Theory

Ethical leadership behavior

Ethical leadership behavior involves management that respects the rights and dignity of others (Resick et al., 2006; Ciulla, 2004). Ethical leaders use power in a socially responsible way, and leadership is viewed as a process that has an impact on the social responsibility of employees (De Hoogh & Den Hartog, 2009). Ethical leadership behavior is defined as a demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, as well as the promotion of such behavior to followers through two-way communication (Brown et al., 2005). Also, ethical leaders discuss ethics with their employees and set clear ethical standards, using rewards and punishments to ensure that those standards are followed (Treviño et al., 2003; Brown & Treviño, 2006). Research suggests that ethical leaders are caring and people-oriented, open and communicative (Resick et al., 2006; Treviño et al., 2003). Ethical leaders have a positive impact both on the attitudes of employees, and their ethical behavior (Kalshoven & Den Hartog, 2009; Brown et al., 2005; Treviño et al., 2003). In recent years, ethical leadership behavior has been viewed by researchers as a particular style of leadership (Brown et al., 2005; De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011; Hitka et al. 2018).

Research in the field of ethical leadership, as a rule, shows the positive effects of the ethical behavior of the leader on numerous organizational, work and business performance. According to (Wang & Yang, 2016), ethical leadership has a strong influence on the functioning of the organization and represents a decisive factor for the actions and behavior of employees. Ethical leadership strengthens employee confidence and helps in accepting change (Babalola, Stouten, & Euwema, 2016). The high level of business ethics in the organization contributes to the creation of better-quality working attitudes (Valentine & Godkin, 2017). Also, ethical values in the

organization provide more favorable work performance of employees (Valentine, Godkin, Fleischman, & Kidwell, 2011). Ethical behavior of leaders and fostering ethical values reduces the turnover intentions of employees and managers (Kangas et al., 2016; Liu & Chiu, 2018; Rubel, Kee, Quah, & Rimi, 2017).

Brown et al. (2005) developed the Ethical Leadership Scale (LES), which has 10-items and combines various ethical leader behaviors (fairness, power sharing and role clarification). Resick et al. (2006), De Hoogh and Den Hartog (2008, 2009) and Kalshoven et al. (2011, 2011a) distinguish between different types of ethical conduct and believe that they should take into account the variety of causes and consequences of ethical leader behaviors. For this reason, these authors observe ethical leadership behavior as a multidimensional construct. Kalshoven et al. (2011) measure separately the ethical leader behaviors of fairness, power sharing and role clarification which Brown et al. (2005) combined in one dimension scale. Fairness is an important feature of ethical leaders; ethical leaders treat others fairly, act with integrity and take responsibility for their actions. Power sharing refers to ethical leaders who involve employees in the decision making process and are ready to hear the opinions of others. Role clarification is related to transparency and the participation of ethical leaders in open communication with the aim of their subordinates gaining a better understanding of the performance goals, what the responsibilities of employees are, and what is expected from them. In addition to these three dimensions, Kalshoven et al. (2011) defined the following ethical leader behaviors: people orientation, ethical guidance, concern for sustainability and integrity. The people orientation dimension of ethical leader behavior reflects the care, respect and support of employees and their needs. One component of the ethical leader behavior is concern for sustainability. This dimension includes leaders' care for the community and society, and responsible leadership behavior in accordance with the welfare of society. Ethical guidance involves the way in which ethical leaders communicate about ethics and promote ethical behavior, as well as how they explain the rules and reward the ethical behavior of employees. Ethical leaders are consistent and stand behind their word, and these attributes of a leader are explored in the integrity dimension.

In this paper, the impact of ethical leadership behavior on communication satisfaction and organizational learning are examined. In this study we use Brown et al.'s (2005) uni-dimensional scale, and the multidimensional scale for measuring ethical leader behaviors as measured by Kalshoven et al. (2011).

Communication satisfaction

Communication satisfaction is defined as the attitude of employees to various aspects of communication (Downs & Hazen, 1977). Pace and Faules (1994) indicate that communication satisfaction represents an individual affective response to the desired outcome arising from the communication that occurs in an organization. Reeding (1972) uses the term communication satisfaction to indicate the overall level of satisfaction that employees experience in their communication environment. Employee communication satisfaction means satisfaction with internal communication. The essence of internal communication is two-way communication between management and employees. According to (Grunig, Grunig, & Doizer, 2002), internal communication examines the nature of the effectiveness of the communication systems within an organization, as well as the communication between the people in it. Downs and Hazen (1977) developed a questionnaire called the Communication

Satisfaction Questionnaire, which was used in this study. Using this questionnaire, Downs and Hazen (1977) explored different aspects of communication satisfaction: the organizational perspective, communication with supervisors, the communication climate, personal feedback, horizontal and informal communication, media quality, organizational integration and subordinate communication.

The organizational perspective covers all kinds of information about the company as a whole, such as information regarding changes, the financial situation, and the policy and objectives of the company. Communication with supervisors covers aspects of up-and-down communication with superiors. This dimension estimates the openness of superiors to new ideas, and the extent to which they are prepared to listen to employees and to provide them with guidance in solving job-related problems. The communication climate reflects the quality of communication in the company on two levels, both organizational and personal. Personal feedback is related to the workers' need to know how they are being judged and how their performance is being appraised. Horizontal and informal communication involves communication among employees and determines the extent to which the communication between the members takes place freely. The media quality dimension assesses the quality of meetings, the precision and length of written instructions, and the degree to which the amount of communication is adequate. Organizational integration refers to the degree to which individuals receive information about their immediate environment. Subordinate communication applies only to supervisors and is not included in this study. The focus of this dimension is top-down communication with subordinates.

Many studies point to the importance of communication satisfaction and its beneficial impact on various aspects of the functioning of organizations: productivity of employees (Clampitt & Downs, 1993), business performance (Tsai, Chuang, & Hsieh, 2009), organizational effectiveness (Gray & Laidlaw, 2004), job satisfaction (Kang, 2010), organizational civic behavior (Carriere & Bourque 2009), reduction of stress, burnout, absenteeism and employee turnover (Ahmad, 2006). Similarly, quality internal communication in organizations promotes technological proactivity, organizational learning and organizational innovation (García-Morales, Matías-Reche, & Verdú-Jover, 2011), as well as financial results and organizational stability (Yates, 2006).

Supportive oral communication positively affects the individual's perception of management support and friendliness. In addition, positive communication impacts on the motivation of employees and establishes trusting relationships with the management level (Jo & Shim, 2005). Ethical leadership behavior is achieved by means of two-way transparent communication. In this way, ethical leadership behavior affects symmetrical communication in the organization (Men, 2015). Ethical leaders use communication to build good relations in the organization and implement two-way communication with their subordinates. On the other hand, ethical leaders use communication to explain the performance goals to their subordinates, to clarify what is expected of them, to explain the rules and communicate the ethical standards (Brown et al., 2005, Kalshoven et al., 2011). Ethical leaders should communicate clearly and frequently about ethics and values, but also to associate ethics with business processes (Treviño et al., 2003; Brown et al., 2005; Van den Akker, Heres, Lasthuizen, & Six, 2009). At the same time, ethical leaders should encourage employees to actively and without reservation, participate in communication regarding the ethical dilemmas and problems they face at work (Weaver, Treviño, & Agle, 2005). Based on the above, it can be concluded that ethical leadership behavior shapes communication within a company and the way in which it takes place. For this reason, in this paper we examine

the impact of ethical leadership behavior on communication satisfaction in companies in Serbia.

Organizational learning

Organizational learning is the capacity of an organization to be competitive (Pentland, 1992; Argote, 2013). Organizational learning is increased through the improvement of existing skills or the development of new ones (Dibella, Edwin, Nevis, & Gould 1996). Similarly, Cook and Yanow (1993) consider it necessary to seek attributes through which organizations can meaningfully understand, possess and use knowledge, because organizational learning is not essentially a cognitive activity. The organization learns in two ways: from the existing members of the organization or by selecting new members who possess the knowledge that the organization lacks (Simon, 1991).

This paper applies a shorter version of the Dimensions of the Learning Organization Questionnaire (DLOQ), by the authors Marsick and Watkins (2003). The questionnaire has seven dimensions that measure learning-related factors. The Continuous Learning dimension measures the support and opportunities given to employees in order to facilitate continuous learning. Inquiry and Dialogue reflects the level of interactive inquiry and dialogue. The Team-based Learning dimension reflects the degree to which the company encourages collaboration among teams in learning activities. Empowerment measures how employees are involved in setting and implementing a shared vision. Embedded System reflects the level of systems to capture and share learning. The System Connection dimension measures how the company is linked to its environment. Strategic Leadership reflects the extent to which a company provides strategic leadership for learning practices.

Leadership is the key to accepting organizational learning and creating a learning organization (Kinicki & Kreitner, 2006). It is best for leaders to use elements of both transformational and transactional leadership. There are opinions (Robbins & Judge, 2009) that the learning organization requires transformational leadership aimed at achieving a common vision. In that sense, interesting is the result of the research (Shao, Feng, & Hu, 2017), where it has been shown that the influence of transformational leadership on organizational learning is strong, but mediated by learning culture, and that influence of transactional leadership on organizational learning is weak but direct. Anyway, leaders are role models from whom employees can gain new knowledge and skills, which they in turn use to improve operational performance (Walumbwa et al., 2011). Studies confirm that knowledge sharing is a mediator of the relationship between ethical leadership behavior and employee creativity (Ma et al., 2013). Accordingly, it can be assumed that ethical leaders who promote the expansion and sharing of knowledge as appropriate normative behavior, motivate employees to learn, develop skills, and be innovative and willing to share knowledge. In this sense, ethical leaders reward employees who expand their knowledge and are ready to share it with others. For this reason, in this paper we examine the impact of ethical leadership behavior on organizational learning in companies in Serbia.

Hypothesis and research questions

On the basis of previous theoretical considerations, two hypotheses can be set (in the part of the research related to the influence of ethical leadership behavior dimensions on communication satisfaction and organizational learning dimensions):

H1: There is a statistically significant correlation between ethical leadership behavior dimensions and communication satisfaction and organizational learning dimensions.

H2: There is a statistically significant predictive effect of ethical leadership behavioral dimensions on communication satisfaction and organizational learning dimensions.

Research of moderatory effects has an explanatory character making it difficult to pre-set hypotheses. Therefore, in this part of the research, two research questions are raised:

RQ1: Is there a moderating effect of gender on the ethical leadership behavior dimensions and the dimensions of communication satisfaction and organizational learning?

RQ1: Is there a moderating effect of age on the ethical leadership behavior dimensions and the dimensions of communication satisfaction and organizational learning?

Material and Methods

Survey instruments (measures)

In this paper ethical leadership behavior was measured by means of the Ethical Leadership Scale (Brown et al., 2005) and the Ethical Leadership at Work questionnaire (Kalshoven et al., 2011). The ELS (Ethical Leadership Scale) consists of 10 items, and the questionnaire is concise and is used in research studies dealing with employee behavior. The ELW (Ethical Leadership at Work) questionnaire has 38 items that assess people orientation, fairness, power sharing, concern for sustainability, ethical guidance, role clarification, and integrity. For both instruments, the items are valued by grades 1-5, where 1 is strongly disagree, and 5 is completely agree.

The Communication Satisfaction Questionnaire (CSQ) (Downs & Hazen, 1977) was used as an instrument for measuring communication satisfaction. The CSQ is one of the most comprehensive questionnaires because it estimates the direction of information flow in formal and informal communication channels and it refers to various members of the organization and different forms of communication. The Communication Satisfaction Questionnaire consists of 40 items covering seven dimensions: the organizational perspective, communication with supervisors, the communication climate, personal feedback, horizontal and informal communication, media quality, organizational integration and supervisory communication. In this study 35 items and seven dimensions from the CSQ were used (Table 1). The responses were measured by using a 7-point Likert scale.

For measuring organizational learning, a shorter version of the Dimensions of the Learning Organization Questionnaire (DLOQ) was used, by the authors Marsick and Watkins (2003). The questionnaire has 21 items and 7 dimensions: Continuous Learning, Inquiry and Dialogue, Team-based Learning, Empowerment, Embedded System, System Connection, and Strategic Leadership. The responses were evaluated by scores 1-6, where 1 is strongly disagree, and 6 is completely agree.

Participants and data collection

The research was carried out in Serbian companies. The survey was conducted by the respondents (middle management) completing the questionnaire. A total of $N = 380$ middle managers from 102 companies completed the questionnaire. The middle managers evaluated the ethical leadership behavior of their top managers, and gave their quality assessment of the ethical leadership behavior of their CEOs. At the same time, the respondents (middle managers) expressed their satisfaction with the communication, as well as the organizational learning in their companies. Middle managers are taken for respondents as they have contacts with the senior management and the CEO, as well as with other employees. At the same time, middle managers have a better insight into and knowledge about the business, results and prospects of the company and its employees.

Results

For data processing, descriptive statistics, correlation analysis, regression analysis and hierarchical regression analysis were used in order to investigate the moderating effect of gender and age on the relationship of the ethical leadership dimensions, the communication satisfaction dimensions and the organizational learning dimensions.

Descriptive statistics

Table 1 presents the descriptive statistics for the ethical leadership scale, the ethical leadership at work dimensions, the dimensions of communication satisfaction and the dimensions of organizational learning. The table shows the names of the dimensions, the short name for each dimension, the mean and standard deviation for all dimensions, as well as Cronbach's alpha for each dimension. The values of Cronbach's alpha range between $\alpha = 0.707$ to $\alpha = 0.942$.

Table 1 Descriptive statistics for all dimensions

Short name	Dimension	N	Min	Max	Mean	Std. Deviation	Cronbach's alpha
ELS	Ethical Leadership Scale	380	1.00	5.00	4.1563	.78528	,935
ELW1	People orientation	380	1.00	5.00	4.0737	.91767	,942
ELW2	Fairness	380	1.00	5.00	4.0294	.88958	,901
ELW3	Power sharing	380	1.17	5.00	3.9947	.90552	,895
ELW4	Concern for sustainability	380	1.00	5.00	4.0614	1.00382	,899
ELW5	Ethical guidance	380	1.00	5.00	4.0947	.85232	,926
ELW6	Role clarification	380	1.00	5.00	4.0084	.93760	,896
ELW7	Integrity	380	1.00	5.00	4.0178	.99612	,906
CS1	Organizational perspective	380	1.00	7.00	4.9389	1.24831	,843
CS2	Communication with supervisors	380	1.20	7.00	5.1121	1.12986	,842

CS3	Communication climate	380	1.00	7.00	4.8084	1.36164	,873
CS4	Personal feedback	380	1.60	7.00	5.0653	1.31897	,869
CS5	Horizontal and informal communication	380	1.20	7.00	5.2258	1.00996	,707
CS6	Media quality	380	1.20	7.00	5.0632	1.17197	,817
CS7	Organizational integration	380	1.20	7.00	5.2137	1.02970	,730
OL1	Continuous Learning	380	1.00	6.00	4.5070	1.03314	,850
OL2	Inquiry and Dialogue	380	1.00	6.00	4.5904	1.08764	,880
OL3	Team-based Learning	380	1.00	6.00	4.1956	1.14861	,906
OL4	Embedded System	380	1.00	6.00	4.0912	1.37698	,918
OL5	Empowerment	380	1.00	6.00	3.9693	1.35013	,916
OL6	System Connection	380	1.00	6.00	4.0395	1.35467	,912
OL7	Strategic Leadership	380	1.00	6.00	4.0544	1.39584	,932

Source: own calculation

Correlation analysis

Table 2 presents the results of the correlation analysis between the ethical leadership behavior dimensions and the dimensions of communication satisfaction and organizational learning. These results refer to the total sample of N = 380 respondents. Pearson correlation was used. In Table 2, statistically significant correlations are marked as follows: * p < 0.05; ** p < 0.01. It may be noted that all the correlations are statistically significant, and ** p < 0.01.

Table 2 Pearson coefficients for the correlations between the ethical leadership dimensions, the communication satisfaction dimensions and the organizational learning dimensions

	CS1	CS2	CS3	CS4	CS5	CS6	CS7	OL1	OL2	OL3	OL4	OL5	OL6	OL7
ELS	.508**	.438**	.411**	.420**	.448**	.443**	.540**	.510**	.441**	.414**	.408**	.358**	.323**	.309**
ELW1	.465**	.322**	.354**	.403**	.389**	.362**	.492**	.510**	.473**	.399**	.345**	.335**	.270**	.223**
ELW2	.433**	.345**	.341**	.395**	.387**	.344**	.455**	.490**	.544**	.462**	.407**	.357**	.328**	.305**
ELW3	.438**	.332**	.362**	.397**	.370**	.362**	.446**	.512**	.513**	.487**	.493**	.434**	.387**	.394**
ELW4	.411**	.296**	.336**	.379**	.320**	.332**	.415**	.510**	.480**	.462**	.457**	.420**	.395**	.389**
ELW5	.418**	.344**	.327**	.386**	.366**	.402**	.479**	.518**	.499**	.461**	.457**	.358**	.302**	.352**
ELW6	.415**	.327**	.366**	.390**	.356**	.375**	.455**	.476**	.492**	.463**	.498**	.394**	.359**	.387**
ELW7	.385**	.300**	.348**	.368**	.354**	.350**	.421**	.455**	.470**	.466**	.478**	.425**	.359**	.397**

*p<0.05; **p<0.01.

Source: own calculation

Regression analysis

Multiple regression analysis was performed to determine the predictive effect of the ethical leadership behavior dimensions (independent variables) on the dimensions of communication satisfaction and organizational learning (dependent variable). The results of the regression analysis are shown in Table 3 (Statistically significant values of β and R² are indicated by bold font).

Table 3 Regression analysis (Dependent Variable: CS dimensions, OL dimensions, Predictors: EL dimensions)

Dependents	Independent								R ²	F	Sig
	ELS	ELW1	ELW2	ELW3	ELW4	ELW5	ELW6	ELW7			
	β										
CS1	.314	.110	.008	.100	.029	-.063	.120	-.016	.287	18.697	.000
CS2	.410	-.123	.080	.060	-.045	.028	.087	-.028	.204	11.867	.000
CS3	.287	.030	-.003	.085	.020	-.169	.179	.072	.200	11.590	.000
CS4	.192	.084	.046	.061	.045	-.043	.127	.027	.217	12.851	.000
CS5	.312	.031	.073	.080	-.083	-.031	.069	.069	.220	13.117	.000
CS6	.330	-.009	-.054	.032	-.033	.134	.092	.018	.220	13.061	.000
CS7	.327	.117	-.011	.022	-.030	.081	.127	.005	.326	22.402	.000
OL1	.171	.126	.009	.075	.144	.110	.045	-.006	.343	24.220	.000
OL2	.021	.030	.284	.094	.051	.014	.134	.023	.335	23.338	.000
OL3	.098	-.060	.150	.122	.096	-.008	.095	.113	.283	18.293	.000
OL4	.168	-.160	.029	.188	.082	-.045	.222	.111	.298	19.709	.000
OL5	.124	-.021	-.004	.173	.155	-.181	.079	.202	.228	13.704	.000
OL6	.165	-.147	.085	.141	.224	-.247	.147	.101	.199	11.522	.000
OL7	.169	-.263	.030	.137	.173	-.062	.121	.160	.212	12.487	.000

Source: own calculation

Gender as a moderator of the observed relationships

The results of the correlation analysis of the ethical leadership behavior dimensions, communication satisfaction dimensions and organizational learning dimensions, for men and women, are shown in Table 4.

Table 4 Correlation coefficients between the EL dimensions, CS dimensions and OL dimensions, for men and women

Gen.	M 180							W 200							
	ELW1	ELW2	ELW3	ELW4	ELW5	ELW6	ELW7	ELW1	ELW2	ELW3	ELW4	ELW5	ELW6	ELW7	
CS1	.493**	.480**	.503**	.459**	.483**	.505**	.460**	.515**	.368**	.364**	.349**	.337**	.315**	.292**	
CS2	.405**	.317**	.325**	.298**	.388**	.353**	.297**	.468**	.322**	.364**	.286**	.288**	.293**	.296**	
CS3	.363**	.387**	.397**	.360**	.360**	.431**	.406**	.452**	.304**	.316**	.299**	.277**	.289**	.272**	
CS4	.357**	.389**	.399**	.395**	.427**	.419**	.394**	.482**	.437**	.396**	.365**	.350**	.364**	.347**	
CS5	.417**	.426**	.370**	.335**	.393**	.395**	.387**	.476**	.340**	.363**	.295**	.328**	.307**	.310**	
CS6	.426**	.405**	.407**	.342**	.423**	.400**	.389**	.457**	.304**	.311**	.316**	.374**	.343**	.301**	
CS7	.526**	.514**	.485**	.422**	.499**	.494**	.482**	.550**	.463**	.401**	.399**	.451**	.409**	.348**	
OL1	.516**	.552**	.493**	.484**	.491**	.463**	.438**	.498**	.450**	.450**	.534**	.546**	.486**	.469**	
OL2	.466**	.502**	.525**	.494**	.480**	.510**	.465**	.403**	.428**	.492**	.451**	.505**	.462**	.458**	
OL3	.411**	.437**	.498**	.424**	.432**	.413**	.412**	.409**	.346**	.468**	.492**	.483**	.506**	.516**	
OL4	.345**	.348**	.483**	.450**	.437**	.465**	.442**	.470**	.340**	.402**	.501**	.479**	.530**	.518**	
OL5	.323**	.345**	.455**	.443**	.343**	.361**	.396**	.385**	.316**	.369**	.405**	.364**	.418**	.446**	
OL6	.261**	.266**	.330**	.385**	.248**	.297**	.291**	.378**	.266**	.403**	.433**	.349**	.414**	.421**	
OL7	.271**	.255**	.386**	.419**	.359**	.385**	.343**	.342**	.174*	.310**	.395**	.334**	.380**	.448**	

*p<0.05; **p<0.01.

Source: own calculation

To test the moderating effects of gender hierarchical regression analysis was used. Hierarchical regression analysis examined the significance of the regression coefficient by the product predictor variables for the independent variable ELWi and the dependent variables CSi and OLi and the moderating variables of gender. The results of the hierarchical regression analysis (R square and F-change) are presented in Table 5, with only those results where the moderating effect of gender was found.

Table 5 Hierarchical regression analysis (R square and F-change) with gender as a moderator (only those pairs where a moderating influence of gender is confirmed)

Independent	Dependent	R square	F-change
ELS	CS4	.185	3.876
ELW2	OL6	.119	4.759

Age as a moderator of the observed relationships

The results of the correlation analysis of the ethical leadership behavior dimensions, communication satisfaction dimensions and organizational learning dimensions, for the younger respondents (under 45) and older respondents (over 45), are summarized in Table 6.

Table 6 Correlation coefficients between the EL dimensions, CS dimensions and OL dimensions, for younger and older respondents

Age	CS1	CS2	CS3	CS4	CS5	CS6	CS7	OL1	OL2	OL3	OL4	OL5	OL6	OL7
< 45 324	ELS	.463**	.414**	.412**	.398**	.446**	.429**	.510**	.387**	.386**	.386**	.359**	.308**	.286**
	ELW1	.402**	.296**	.330**	.372**	.387**	.336**	.428**	.495**	.421**	.298**	.337**	.260**	.202**
	ELW2	.348**	.299**	.289**	.353**	.344**	.290**	.373**	.457**	.471**	.352**	.346**	.296**	.273**
	ELW3	.368**	.300**	.338**	.367**	.360**	.331**	.493**	.480**	.465**	.466**	.419**	.358**	.365**
	ELW4	.362**	.274**	.322**	.356**	.314**	.305**	.371**	.463**	.451**	.453**	.448**	.404**	.390**
	ELW5	.335**	.302**	.271**	.327**	.353**	.338**	.412**	.478**	.454**	.443**	.381**	.302**	.348**
	ELW6	.349**	.296**	.336**	.349**	.338**	.331**	.455**	.467**	.462**	.483**	.421**	.371**	.406**
	ELW7	.321**	.269**	.301**	.327**	.315**	.319**	.440**	.438**	.471**	.467**	.438**	.354**	.417**

45 < 56	ELW7	.548**	.416**	.509**	.531**	.553**	.485**	.565**	.396**	.486**	.401**	.491**	.365**	.401**	.364**
	ELW6	.543**	.437**	.436**	.543**	.453**	.556**	.551**	.422**	.447**	.413**	.532**	.299*	.341*	.385**
	ELW5	.615**	.493**	.492**	.615**	.447**	.655**	.622**	.416**	.446**	.431**	.479**	.275*	.326*	.432**
	ELW4	.514**	.385**	.344**	.455**	.360**	.468**	.508**	.408**	.419**	.460**	.430**	.281*	.368**	.455**
	ELW3	.568**	.475**	.424**	.519**	.438**	.518**	.581**	.492**	.558**	.546**	.594**	.522**	.566**	.603**
	ELW2	.653**	.520**	.503**	.552**	.609**	.588**	.659**	.495**	.709**	.513**	.605**	.415**	.502**	.498**
	ELW1	.594**	.413**	.394**	.514**	.429**	.475**	.628**	.430**	.524**	.489**	.487**	.335*	.332*	.362**
	ELS	.585**	.525**	.365**	.491**	.489**	.510**	.619**	.399**	.511**	.456**	.456**	.360**	.410**	.446**

*p<0.05, **p<0.01.

Source: own calculation

To test the moderating effects of age hierarchical regression analysis was used. Hierarchical regression analysis examined the significance of the regression coefficient by the product predictor variables for the independent variable ELWi and the dependent variables CSi and OLi and the moderating variable age. The results of the hierarchical regression analysis (R-square and F change) are presented in Table 7, but only those pairs where a moderating influence of age is confirmed.

Table 7 Hierarchical regression analysis (R square and F-change) with age as a moderator (only those pairs where a moderating influence of age is confirmed)

Independent	Dependent	R square	F-change
ELW1	CS7	.253	3.970
	CS1	.209	6.172
ELW2	CS6	.132	5.231
	CS7	.229	8.262
	OL2	.318	4.488
	CS1	.213	4.339
ELW3	CS6	.142	4.383
	CS7	.221	6.880
ELW4	OL7	.176	5.724
	CS7	.189	4.117
ELW5	CS1	.193	4.179
	CS6	.178	6.026
ELW7	CS1	.172	4.052
	CS7	.197	5.263

Source: own calculation

Discussion

The average scores for ethical leadership behavior have a fairly high value (descriptive statistics - Table 1). A possible explanation is that these scores are a consequence of the socialist times. The socialist system had a strong human orientation, and the equality of people was particularly insisted on, so all the workers had the same right to vote (in the former Yugoslavia, the socialist arrangement had a specificity, which was reflected in the workers' self-management). It can be assumed that people in Serbia still highly value certain things from the period of socialism such as care of people, equality, humanity, and justice. The current leaders, obviously aware of this, try to meet the staff and avoid their dissatisfaction and sensitivity to inequality and injustice. Dimension ELW3 - power sharing has the lowest average score from the dimensions of ethical leadership behavior. This serves as confirmation of previous results, since Serbia is a country characterized by an organizational culture with high orientation towards people and especially high power distance (Vukonjanski, Nikolić, Hadžić, Terek, & Nedeljković, 2012; Nikolić et al., 2014).

The descriptive statistics (Table 1) show that the scores measuring the communication satisfaction dimensions and organizational learning dimensions are above average. From the dimensions of communication satisfaction, CS5 - horizontal and informal communication and CS7 - organizational integration have the highest average ratings. When it comes to CS5 - horizontal and informal communication, the situation is clear: collectivism within the group was a highly regarded dimension of organizational culture in Serbian companies (Vukonjanski et al., 2012). People in Serbia communicate readily with those in their immediate environment, news is exchanged and an atmosphere of openness to others is mainly present, especially in the horizontal levels of the organization. Dimension CS7 - organizational integration also applies to information and communication in the direct, immediate environment, personal conscience and the demands of the job. There is a similarity between these two dimensions, and good communication as part of the job requirements is something that is necessary for the effective implementation of specific tasks. For this is, undoubtedly, given significant attention. However, when it comes to the communication at organizational level, communication in terms of systems access for effective operations, improved motivation and long-term effects, this is accessed considerably weaker and with a greater degree of disorientation. Therefore, the lowest scoring communication satisfaction dimension was CS3 - communication climate.

From the dimensions of organizational learning, OL2 - promote inquiry and dialogue and OL1 - create continuous learning opportunities were awarded the highest average grades. There is an obvious consistency here with the results of measuring communication satisfaction. The best situation concerns a single, horizontal level: mutual help of employees, encouraging questions about doing business more efficiently, open and honest exchange of information and trust among employees. In contrast, the lowest estimated dimension of organizational learning is OL5 - empower people toward a collective vision. This dimension relates to encouraging initiatives among employees, providing employees with a certain degree of autonomy, and encouraging employees to take reasonable risks. So again, there are difficulties at the organizational level: the state does not cope well with strategic and systematic issues. The managers of Serbian companies sometimes behave irrationally and are disorganized, which is not good for business.

In Table 2 we can see that all the correlations between the dimensions of ethical leadership behavior and those of communication satisfaction and organizational

learning are positive and statistically significant (H1 is confirmed). The impacts on specific dimensions are discussed below.) However, it is important to note the difference between the impact of certain dimensions of ethical leadership behavior on those of communication satisfaction and organizational learning. Specifically, the dimensions of communication satisfaction are mostly influenced by ELS - the Ethical Leadership Scale, as a general dimension, then ELW1 - people orientation, while the dimensions of organizational learning are mostly influenced by ELW3 - power sharing, and then ELW4 - concern for sustainability. This difference can be explained as follows: the impact of ethical leadership behavior on communication satisfaction is based to a large extent on the human approach of leaders, while the impact of ethical leadership behavior on organizational learning is mainly a systems component, i.e., the influence is based on systematic ethical leadership behavior. In such a situation, the leaders' general ethics, and concern for the feelings, needs, problems, emotions and personal development of their employees, will greatly contribute to the communication satisfaction. On the other hand, the willingness of leaders to reduce the power distance and self-reflection in the direction of environmental protection and sustainable development has a systemic effect on the organization and behavior of employees. Low power distance and environmentally beneficial behavior of organizations have a positive impact on employee awareness and understanding of the importance and need for organizational learning. This creates the conditions for the continuous learning of leaders and employees, improved cooperation, better learning conditions etc. It is interesting that the dimensions of ethical leadership behavior, which have the greatest influence on those of communication satisfaction (ELS - the Ethical Leadership Scale and ELW1 - people orientation), at least influence the dimensions of organizational learning. Similarly, the dimension of ethical leadership behavior ELW4 - concern for sustainability, which strongly influences those of organizational learning, has the least influence on the communication satisfaction dimensions. This actually confirms what was previously stated: the different nature of the communication satisfaction dimensions and those of organizational learning.

From the communication satisfaction dimensions, CS7 - organizational integration, and CS1 - organizational perspective have the strongest correlation with ethical leadership behavior. These are the dimensions that, to a large extent, represent communication at organizational level, so it can be said that they have a systemic component. Taking into account the previous discussion, the next phenomenon occurs: ethical leadership behavior impacts on communication satisfaction mostly via human-oriented leader behavior and the effects of this behavior on communication satisfaction are predominantly reflected at the systemic, organizational level. It can be concluded that the roots of higher communication satisfaction at all levels of the organization, as well as at that of the entire organization, in fact lie in ethical leadership behavior with a prominent human component.

From the dimensions of organizational learning, OL1 - create continuous learning opportunities and then OL2 - promote inquiry and dialogue, achieve the strongest correlation with the dimensions of ethical leadership behavior. Unlike the previous situation, these are the dimensions which, inter alia, include the mutual help of employees for learning, open and honest exchange of information, respecting the opinions of others and trust among employees. Therefore, this dimension can be said to have a personal and human component. The phenomenon which occurs here is contrary to that of communication satisfaction: ethical leadership behavior systemically affects organizational learning and the effects of this impact, to a large extent, are later perceived on individual and interpersonal levels of learning. The

support for employees in learning, the honest exchange of information in learning, and good individual and group performance in general, are achieved, for the most part, through systematic ethical leadership behavior at organizational level. This is very important because learning, however excellent the institutional framework, conditions and incentives are, mostly depends on the individual himself, his desires and motivations. Systemic ethical leadership behavior is what can motivate an individual to learn.

Table 3 shows the results of the regression analysis. The dimensions of ethical leadership behavior are the independent variables, while the dimensions of communication satisfaction and those of organizational learning are the dependent variables. The corrected determination indexes R^2 have values within the range from 0.199 to 0.343. The values of the determination indexes R^2 are statistically significant at all observed dependent variables. Based on these results, it can be noted that there is a statistically significant positive predictive effect of dimensions of ethical leadership behavior on observed dependent variables. (H2 is confirmed.) OL1 - create continuous learning opportunities (0.343), OL2 - promote inquiry and dialogue (0.335), CS7 - organizational integration (0.326) and OL4 - create systems to capture and share learning (0.298) have the highest values of R^2 . The predictive effect of the independent variables are the most pronounced for these dependent variables. OL6 - connect the organization to its environment (0.199), CS3 - the communication climate (0.200) and CS2 - communication with supervisors (0.204) have the lowest values of R^2 . The results of the regression analysis are consistent with those of the correlation analysis, as previously discussed.

Tables 4 and 5 show that the moderating effect of gender on the relationship between ethical leadership behavior and the observed performances occurs in only two of the 112 surveyed pairs. On this basis, it can be said that there is no moderating effect of gender on the relationship between the ethical leadership dimensions, communication satisfaction dimensions and the dimensions of organizational learning (RQ1 is answered). For the two pairs where there is a moderating effect, it has the following path: for women there is a stronger positive influence of the ethical leadership behavior dimensions on the observed performances, while for men the effect is positive, but weaker. The first of the two pairs is ELS - the Ethical Leadership Scale and CS4 - personal feedback. For women the ethical behavior of leaders is, to a greater extent, sufficient feedback: unlike men, they require less professional support and fewer critical reviews. Women are more emotional and it is more important for them that their leader is ethically correct than to constantly receive acknowledgment for their work. The second of the two pairs is ELW2 - the Fairness Scale and OL6 - connect the organization to its environment. Therefore, if the leader demonstrates honest and fair treatment of employees and the organization, this means more to women in terms of incentives to the systemic and global thinking, better cooperation with the local community and openness to solve problems at all levels of the organization. Fairness in a leader gives women a greater incentive to work, and promotes dedication to work and the welfare of the organization.

Tables 6 and 7 show that the moderating effects of age on the ratio of ethical leadership behavior and the observed performances occurs partially: it is strongly expressed for some dimensions of communication satisfaction, while for organizational learning it is almost negligible (RQ2 is answered). The moderating effect of age has the following path: for the older respondents there is a strong and positive influence of the dimensions of ethical leadership behavior on the observed performances, while for the younger respondents, this impact is positive, but weaker. The largest

number of moderations is concentrated around three dimensions of communication satisfaction: CS7 - organizational integration, then CS1 - organizational perspective and CS6 - media quality. As stated, these are the dimensions that represent communication on a wider, organizational level, so it can be said that they are characterized by a system component. Obviously, compared to their younger colleagues, the older middle managers are more aware of the systemic importance of ethical leadership behavior for the communication, but also the functioning of the organization as a whole. They know how to better recognize (un)ethical leadership and know how to value it more. They have experience: they know how the organization works in terms of good and bad ethical leadership behavior. As a result, older middle managers have less tolerance for the unethical behavior of their leaders.

It is possible to single out two dimensions of ethical leadership behavior that contribute most to the moderating effects of age on the observed relationships. These are: ELW2 - fairness and ELW3 - power sharing. The previous observations are expressed most powerfully for these dimensions: the fairness of a leader and his willingness to reduce power distance represent an important indicator (especially for older middle managers) that the leader acts ethically. In such circumstances, the older middle managers will especially appreciate the systemic effects of this highly ethical leader behavior.

Conclusion

The average scores for ethical leadership behavior, communication satisfaction and organizational learning in companies in Serbia, obtained in the descriptive statistics (Table 1), show that the best situation concerns those dimensions related to the individual, horizontal level: mutual help between employees, encouraging questions regarding the efficient performance of work tasks, the open and honest exchange of information and trust among employees. In contrast, the lowest average scores are for those dimensions that relate to systemic, strategic and organizational elements. This situation is directly related to the state of the dimensions of organizational culture in Serbian companies (Vukonjanski et al., 2012).

The correlation analysis (Table 2) shows that all correlations between the dimensions of ethical leadership behavior and those of communication satisfaction and organizational learning are positive and statistically significant. Those which most affect the dimensions of communication satisfaction are ELS - the Ethical Leadership Scale, as a general dimension, then ELW1 - people orientation, while those which mostly influence the dimensions of organizational learning are ELW3 - power sharing, and then ELW4 - concern for sustainability. It can be concluded that ethical leadership behavior has a double impact: a) an individual, personal, and human one, which has a greater influence on communication satisfaction, and b) an organizational, systematic one, which has a stronger effect on organizational learning.

However, the effects of these influences of ethical leadership behavior on communication satisfaction and organizational learning are different from the nature of their influences. Thus, ethical leadership behavior, which has an effect on communication satisfaction mainly in terms of the leader's human behavior and concern for people, has effects on communication satisfaction which are actually reflected systemically at organizational level. Similarly, ethical leadership behavior, which impacts on the organizational learning systemically, has effects on organizational learning which are reflected by the improvement of the individual and interpersonal level of learning.

The results of the regression analysis (Table 3) demonstrate consistency with those of the correlation analysis. It has been shown that there is an expressed positive predictive effect of the ethical leadership behavior dimensions on the observed dependent variables (the communication satisfaction dimensions and those of organizational learning).

There is no moderating effect of gender on the relationship between the ethical leadership dimensions and those of communication satisfaction and organizational learning. Specifically, the moderating effect of gender exists only in two pairs: for women there is a stronger positive influence of the ethical leadership behavior dimensions on the observed performances, while for men the effect is positive, but weaker. The results for the two pairs can be summarized as follows: for women, the ethical behavior of leaders, as well as the honest and fair relations of leaders toward employees and the organization, is to a greater extent, sufficient feedback and encouragement to greater involvement and commitment to the job and the company.

The moderating effects of age on the relationship between ethical leadership behavior and the observed performances is strongly expressed in some dimensions of communication satisfaction, while for the dimensions of organizational learning it is almost irrelevant. For the older respondents, there is a strong and positive influence of the ethical leadership behavior dimensions on the observed performances, while for the younger ones, this impact is positive, but weaker. Compared to their younger counterparts, the older middle managers are more aware of the importance of ethical leadership behavior on communication, but also on the functioning of the organization as a whole.

Orientation towards people, the fairness of a leader and his/her willingness to reduce the power distance, are particularly important indicators of ethical leadership behavior. Employees in companies in Serbia particularly appreciate this dimension of ethical leadership behavior. The recommendation to managers and leaders is to act ethically, both at the individual level when dealing with people, and at the organizational level. In this way, among other things, they will certainly contribute to better business communication and organizational learning in the company. Often it only takes a little attention, for example, a sincere "How are you ...?" can significantly raise employee motivation and willingness for much greater involvement. The results of this research further gain in importance if we have in mind that so far there are no or only a few studies that specifically address the influence of ethical leadership behavior on communication satisfaction and/or organizational learning.

Bibliography

1. Ahmad, A. H. (2006). Auditing communication satisfaction among academic staff: An approach to managing academic excellence. *The Business Review*, 5, 330-333.
2. Argote, L. (2013). *Organizational Learning: Creating, Retaining and Transferring Knowledge*. New York: Springer Science+Business Media.
3. Babalola, M.T., Stouten, J., & Euwema, M. (2016). Frequent Change and Turnover Intention: The Moderating Role of Ethical Leadership. *Journal of Business Ethics*, 134(2), 311-322.
4. Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.

5. Binns, J. (2008). The ethics of relational leading: Gender matters. *Gender, Work & Organization*, 15(6), 600-620.
6. Brown, M. E., & Mitchell, M. S. (2010). Ethical and Unethical Leadership: Exploring New Avenues for Euture Research. *Business Ethics Quarterly*, 20(4), 583-616.
7. Brown, M. E., & Treviño, L. K. (2006). Ethical leadership: A review and future directions. *Leadership Quarterly*, 17, 595-616.
8. Brown, M.E., Trevino, L.K., & Harrison, D.A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes*, 97, 117-134.
9. Carriere, J., & Bourque, C. (2009). The effects of organizational communication on job satisfaction and organizational commitment in a land ambulance service and the mediating role of communication satisfaction. *Career Development International*, 14(1), 29-49.
10. Clampitt, P. G., & Downs, C. W. (1993). Employee perceptions of the relationship between communication and productivity: A field study. *Journal of Business Communication*, 30, 5-28.
11. Cook, S.D.N., & Yanow, D. (1993). Culture and Organizational Learning. *Journal of Management Inquiry*, 2(4), 373-390.
12. Cullen, J.B., Victor, B., & Stephens, C. (1989). An Ethical Weather Report: Assessing the Organization's Ethical Climate. *Organizational Dynamics*, 18, 50-62.
13. Daft, R.L. (2011). *The leadership experience* (5th ed.). Mason, OH: Thomson, South-Western.
14. De Hoogh, A. H. B., & Den Hartog, D. N. (2008). Ethical and despotic leadership, relationships with leader's social responsibility, top management team effectiveness and subordinates' optimism: A multi-method study. *Leadership Quarterly*, 19, 297-311.
15. Den Hartog, D.N., & De Hoogh (2009). Empowerment and leader fairness and integrity: Studying ethical leader behavior: From a levels-of-analysis perspective. *European Journal of Work and Organizational Psychology*, 18(2), 199-230.
16. Dibella, A.J., Edwin C. Nevis, E.C., & Gould, J.M. (1996) Understanding Organizational Learning Capability. *Journal of Management Studies*, 33(3), 361-379.
17. Downs, C.W., & Hazen, M.D. (1977). A factor analytic study of communication satisfaction. *The Journal of Business Communication*, 14(3), 63-73.
18. García-Morales, V.J., Matías-Reche, F., & Verdú-Jover, A.J. (2011). Influence of Internal Communication on Technological Proactivity, Organizational Learning, and Organizational Innovation in the Pharmaceutical Sector. *Journal of Communication*, 61, 150-177.
19. Gray, J., & Laidlaw, H. (2004). Improving the measurement of communication satisfaction. *Management Communication Quarterly*, 17(3), 425-448.
20. Grunig, L. A., Grunig, J. E., & Dozier, D. M. (2002). Excellent public relations and effective organizations. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
21. Hitka, M., Lorincova, S., Bartakova, GP., Lizbetinova, L., Starchon, P., Li, C., Zaborova, E., Markova, T., Schmidtova, J., & Mura, L. (2018). Strategic Tool of Human Resource Management for Operation of SMEs in the Wood-processing Industry. *Bioresources*, 13 (2), 2759-2774
22. Jo, S., & Shim, S. (2005). Paradigm shift of employee communication: The effect of management communication on trusting relationships. *Public Relations Review*, 31, 277-280.

23. Kalshoven K, Den Hartog D.N., & De Hoogh A.H.B. (2013). Ethical leadership and follower helping and courtesy: moral awareness and empathic concern as moderators. *Applied Psychology*, 62(2), 211–235.
24. Kalshoven, K., & Boon., C. T. (2012). Ethical leadership, employee well-being, and helping. *Journal of Personnel Psychology*, 11(1), 60–68.
25. Kalshoven, K., & Den Hartog, D.N. (2009). Ethical Leader Behavior and Leader Effectiveness: The Role of Prototypicality and Trust. *International Journal of Leadership Studies*, 5(2), 102–119.
26. Kalshoven, K., Den Hartog, D.N., & De Hoogh, A.H.B. (2011). Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure. *The Leadership Quarterly*, 22, 51–69.
27. Kalshoven, K., Den Hartog, D.N., & De Hoogh, A.H.B. (2011a). Ethical Leader Behavior and Big Five Factors of Personality. *Journal of Business Ethics*, 100, 349–366.
28. Kang, J.A. (2010). Ethical conflict and job satisfaction of public relations practitioners. *Public Relations Review*, 36(2), 152–156.
29. Kangas, M., Kaptein, M., Huhtala, M., Lämsä, A.M., Pihlajasaari, P., Feldt, T. (2018). Why Do Managers Leave Their Organization? Investigating the Role of Ethical Organizational Culture in Managerial Turnover. *Journal of Business Ethics*, 153(3), 707–723.
30. Kinicki, A., & Kreitner, R. (2006). *Organizational behavior: key concepts, skills and best practices*, 2nd Edition, New York: McGraw-Hill.
31. Liu, C.M., Chiu, C.K. (2018). Modeling turnover intention and job performance: the moderation of perceived benevolent climate. *Review of Managerial Science*, <https://doi.org/10.1007/s11846-018-0302-3>.
32. Ma, Y.R., Cheng, W.B., Ribbens, B.A., & Zhou, J.M., (2013). Linking Ethical Leadership to Employee Creativity: Knowledge Sharing and Self-Efficacy as Mediators. *Social Behavior and Personality*, 41(9), 1409–1419.
33. Marsick, V.J., & Watkins, K.E. (2003). Demonstrating the value of an organization's learning culture: the Dimensions of the Learning Organization Questionnaire. *Advances in Developing Human Resources*, 5(2), 132–151.
34. Men, L. R. (2015). The role of ethical leadership in internal communication: Influences on communication symmetry, leader credibility, and employee engagement. *Public Relations Journal*, 9(1).
35. Mendonca, M. (2001). Preparing for ethical leadership in organizations. *Canadian Journal of Administrative Sciences*, 18, 266–276.
36. Nikolić, M., Vukonjanski, J., Nedeljković, M., Hadžić, O., & Terek, E. (2014). The relationship between communication satisfaction, emotional intelligence and the GLOBE organizational culture dimensions of middle managers in Serbian organizations. *Journal for East European Management Studies*, 19(4), 387–412.
37. Nikolić, M., Vukonjanski, J., Nedeljković, M., Hadžić, O., & Terek, E., (2013). The impact of internal communication on job satisfaction dimensions and the moderating role of LMX. *Public Relations Review*, 39(5), 563–565.
38. Ogunfowora, B. (2014). The impact of ethical leadership within the recruitment context: The roles of organizational reputation, applicant personality, and value congruence. *The Leadership Quarterly*, 25(3), 528–543.
39. Pace, R.W., & Faules D.F. (1994). *Organizational Communication*. (3rd ed.). Eaglewood Cliffs, New Jersey: Prentice Hall Inc.
40. Parker, S. K., Wall, T. D., & Jackson, P. R. (1997). That is not my job: Developing flexible employee work orientations. *Academy of Management Journal*, 40, 899–929.

41. Pentland, B. (1992). Organizing moves in software support hot lines. *Administrative Science Quarterly*, 37, 527-548.
42. Piccolo, R. F., Greenbaum, R., Den Hartog, D. N., Folger, R. (2010). The relationship between ethical leadership and core job characteristics. *Journal of Organizational Behavior*, 31(2), 259-278.
43. Redding, W.C. (1972). *Communication within the Organization: AN Interpretive Review of Theory and Research*. New York: Industrial Communication Council.
44. Resick, C.J., Hanges, P.J., Dickson, M.W., & Mitchelson, J.K. (2006). A cross-cultural examination of the endorsement of ethical leadership. *Journal of Business Ethics*, 63, 345-359.
45. Robbins, S.P., & Judge, T.A. (2009). *Organizational behavior*, 12th Edition, Zagreb: Mate d.o.o. (in Croatian)
46. Rubel, M.R., Kee, D.M., Quah, C.H., & Rimi, N.N. (2017). Ethical Climate and Employee Turnover Intention in the Ready - Made Garment Industry of Bangladesh. *Global Business and Organizational Excellence*, 36(2), 61-73.
47. Shao, Z., Feng, Y., & Hu, Q. (2017). Impact of top management leadership styles on ERP assimilation and the role of organizational learning. *Information & Management*, 54(7), 902-919.
48. Simon, H. (1991). Bounded rationality and organizational learning. *Organization Science*, 1(2), 125-134.
49. Treviño, L.K., Brown, M., & Hartman, L.P. (2003). A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suite. *Human Relations*, 56, 5-37.
50. Tsai, M.T., Chuang, S.S., & Hsieh, W.P. (2009). An integrated process model of communication satisfaction and organizational outcomes. *Social Behavior and Personality*, 37, 825-834.
51. Valentine, S., & Godkin, L. (2017). Banking Employees' Perceptions of Corporate Social Responsibility, Value-Fit Commitment, and Turnover Intentions: Ethics as Social Glue and Attachment. *Employee Responsibilities and Rights Journal*, 29(2), 51-71.
52. Valentine, S., Godkin, L., Fleischman, G.M., & Kidwell, R. (2011). Corporate Ethical Values, Group Creativity, Job Satisfaction and Turnover Intention: The Impact of Work Context on Work Response. *Journal of Business Ethics*, 98(3), 353-372.
53. Van den Akker, L., Heres, L., Lasthuizen, K., & Six, F. (2009). Ethical leadership and trust: It's all about meeting expectations. *International journal of Leadership Studies*, 5(2), 102- 122.
54. Vukonjanski, J., Nikolić, M., Hadžić, O., Terek, E., & Nedeljković, M. (2012). Relationship between GLOBE organizational culture dimensions, job satisfaction and leader-member exchange in Serbian organizations. *Journal for East European Management Studies*, 17(3), 333-368.
55. Walumbwa, F. O., Mayer, D. M., Wang, P., Wang, H., Workman, K., & Christensen, A. L. (2011). Linking ethical leadership to employee performance: The roles of leader-member exchange, self-efficacy, and organizational identification. *Organizational Behavior and Human Decision Processes*, 115, 204-213.
56. Wang, Y.D., & Yang, C. (2016). How Appealing are Monetary Rewards in the Workplace? A Study of Ethical Leadership, Love of Money, Happiness, and Turnover Intention. *Social Indicators Research*, 129(3), 1277-1290.
57. Weaver, G. R., Treviño, L. K., Agle, B. (2005). Somebody I look up to: Ethical role models in organizations. *Organizational Dynamics*, 34, 313-330.

58. Yates, K. (2006). Internal communication effectiveness enhances bottom-line results. *Journal of Organizational Excellence*, 25(3), 71-79.

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COMPETITIVENESS OF THE WTO MEMBERS – CASE AFFECTING INTERNATIONAL ECONOMIC RELATIONS: EVALUATION BY DEA APPROACH

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Abstract

Competitiveness depends on a multiplicity of actions that can optimise the potentials of countries and internal factor endowments, which are increasingly becoming the drivers of the economy. Competitiveness and performance importantly affecting the world trade and international relations, especially nowadays, given the changing position of the world leaders and growth of new economic powers. It creates new threats and challenges regarding trade and competitiveness for all players in the world economy, and increasing competitiveness must be efficient enough. The article focuses on using the Data Envelopment Analysis in the form of the Malmquist Productivity Index for comparing productivity level and efficiency changes of the World Trade Organization members. Applicability of the approach illustrates a real data set involving the factors of competitiveness based on the World Economic Forum approach, i.e. the Global Competitiveness Index in period 2007-2018, i.e. pre-in-post crisis.

Key words: *Competitiveness, DEA, MPI, stage of economic development, WEF*

JEL Classification: C67, E60, O47

Introduction

The issue of competitiveness has attracted a lot of attention during the last quarter-century, i.e. since the emergence of the new economic philosophy in favour of market orientation and trade liberalisation. Such development has resulted in changes in the rules of the game in business and international trade. Some have regarded competitiveness as an important element of success in economic performance (OECD, 1992); others have recognised it as a misplaced concept and an obsession (Krugman, 1994). The orthodox theoretical background of competitiveness is the pure neoclassical theory of static comparative cost advantage, which is the philosophical and ideological basis of the Washington Consensus, activities of international financial institutions and their recommendations for economic reform and universal, across-the-board trade liberalisation in developing countries. It is also the philosophy behind the World Trade Organization (WTO) as a multilateral organisation which sets rules on international trade.

In the field of trade theory and policy, researchers debated whether openness and trade liberalisation provide the necessary ingredients for economic growth and subsequent for competitiveness. Openness to the world – through trade, investment and the movement of people – is crucial to competitiveness. Trade and competitiveness are thus intimately connected, as demonstrated by the East Asian “*miracle economies*” (Hong Kong SAR, the Republic of Korea, Singapore, and Taiwan). Trade and investment integration can improve competitiveness through two channels: first, by increasing the size of the market available to domestic firms; and second, by driving productivity and innovation by exposing firms to international competition, expertise, and technology (WEF, 2018). No country has thrived in modern times without opening its economy to international trade, investment, and the movement of people across borders. But openness on its own has its limits. To reap its benefits fully, it must be combined with productivity-enhancing reforms at home. It is the rationale for pursuing reforms to advance a twin focus on trade and competitiveness. The effect of openness, trade liberalisation on economic growth as well as relationships between economic growth and competitiveness remain highly contentious issues. Today’s economic circumstances are full of challenges. Global growth remains fragile after the economic crisis, with few bright spots in the global economy. Potential output growth has declined in recent years across developed and developing economies owing to structural factors that led to lower productivity growth (WEF, 2018). It is these advanced economies that have historically been the drivers of a more globally integrated world, leading eventually to a multipolar world with changing global political-economic relations. At the same time, there are signs of new energy in global integration, and when viewed from a longer perspective, this energy is not surprising, forming part of a long trend towards more closely interlinked global markets. Such developments have also intensified competition in global markets, which implies a greater need to be competitive to generate additional market opportunities and economic links in the presence of participants vying for the same space.

Changes in the global economy during the last quarter-century or so have intensified competition in the international and internal markets of developed and developing countries. Such changes have increased the need for government support, and competitiveness is thus high on the political agenda. Macroeconomic competitiveness of individual countries is considered by national governments to be essential policy targets and, at the same time, for issues that need to be solved. For some years, government objectives have been set not only regarding improving macroeconomic performance against other countries but also regarding creating conditions to allow less productive countries to reduce the ‘gap’ between themselves and the most productive ones. At a time when states have to deal with increased pressures on public balances, stemming from demographic trends and globalisation, the improvement of efficiency and effectiveness of public spending features high on the political agenda. The current economic situation is causing why the governments of countries worldwide aim to streamline their processes regarding collecting revenue from the state budget and then redistributing it on the principle of economic efficiency. Comparative analysis of efficiency in the public sector is thus the starting point for studying the role of efficiency, effectiveness and performance regarding the economic governance of resource utilisation by public management for achieving the short/medium-term objectives of economic recovery and sustainable development of national economies. Increasing performance is generally considered as the only one sustainable way of improving living standards in the long-term. Statistical evidence

to help policymakers to understand the routes to performance growth, especially those influenced by the government, can help to lead to better policy. To get empirical applications for economic system, the Data Envelopment Analysis (DEA) approach is employed in this article.

The article aims to propose a DEA application to evaluate efficiency changes and to analyse a level of productivity depending on each country's stage of development. DEA approach applies in the form of output-oriented Malmquist productivity index with constant returns to scale (OO MPI CRS) with the equivalent number of inputs and outputs (six inputs and six outputs). The calculation is verified on the sample of 137 World Trade Organization (WTO) members in the reference period 2007-2018 (including all the years inside this range). Variables of inputs and outputs present the factors of competitiveness based on Global Competitiveness Index (GCI), which is part of the Global Competitiveness Reports (GCR) published by the World Economic Forum (WEF) every year.

Theoretical Approach

The concept of competitiveness has mainly been discussed over the last decades. An important aspect is a level at which the idea of competitiveness is defined; in most cases, the micro and macroeconomic level are considered, which are strictly interrelated. This concept has extended from micro-level of firms to macro-level of countries which is the focus of the article. The complexity in defining competitiveness leads to difficulties in its measurement. Many institutions monitor macroeconomic competitiveness. However, two well-known international institutes, i.e. Institute for Management Development (IMD) and WEF, publish most reputable competitiveness reports. To compare a level of competitiveness of individual countries in the article, the meaning of competitiveness by WEF and subsequently thus database performed by WEF are employed. The first reason for choosing WEF's approach is its long-term continuity and international recognition of stakeholders. Since 1979, WEF publishes GCR that produces annual GCI to rank national economies. GCR aims to serve as a neutral and objective tool for governments, the private sector, and civil society to work together on effective public-private collaboration to boost future prosperity (WEF, 2018). The second reason for choosing WEF is its approach to perceiving competitiveness and suitability regarding the applied quantitative method, which DEA is.

Based on WEF's approach, competitiveness can be defined as the set of factors – policies, institutions, strategies and processes – that determine the level of sustainable productivity of an economy, be it the world, a continent (or macro region), nation, region or even a city (WEF, 2018). WEF defines competitiveness as the set of institutions, policies, and factors that determine the productivity level of a country. Productivity level, in turn, sets the level of prosperity that can be reached by an economy. Productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates (WEF, 2018). In WEF's definition of competitiveness is an important term – productivity. Many authors, with Krugman (1994) and Porter (1990) among others, agree on the definition of competitiveness as productivity, which is measured by the value of goods and services produced by a nation per unit of human, capital and natural resources. They see as the main goal of a country the production of high and rising standard of living for its citizens which depends mainly on the productivity with

which a nation's resources are employed. The concept of competitiveness is thus linked to productivity, usually based on Porter's approach (Porter, 1990). Competitiveness is determined by productivity with which a location uses its human, capital, and natural endowments to create value. Endowments form a foundation for prosperity, but true wealth is created by productivity in the use of endowments.

Macroeconomic competitiveness sets the potential for high productivity but is not sufficient. Competitiveness thus centres on productivity – the efficiency with which an economy uses available inputs to produce outputs. Therefore, competitiveness is one of the fundamental criteria for evaluating economic performance and reflects the success of the area. Territories need highly performing units to meet their goals, to deliver the products and services they specialised in, and finally to achieve competitive advantage. Low performance and not making the goals might be experienced as dissatisfying or even as a failure. Moreover, performance, if others recognise it, is often rewarded by benefits, e.g. better market position, higher competitive advantages, financial condition etc. The government sees differences in performance across territories as essential policy targets. For some years, government objectives have been set not only regarding improving national productivity against other countries but also in creating conditions to allow less productive countries to reduce the 'gap' between themselves and the most productive ones.

Competitiveness taxonomy provides a framework for action for countries that wish to improve their competitiveness. However, do all states have the same opportunities regarding competitiveness? GCR emphasises an increasingly important theme confronting many nations – countries face very different challenges and priorities as they move from resource-based to knowledge-based economies, what influences their competitive advantages and also disadvantages. It is generally accepted that the level of economic development is not uniform across territories, but substantially differs. As an economy develops, so do its structural bases of global competitiveness. This process can be described as a sequence of stages, each with a different set of economic characteristics and challenges (Porter, 1990, pp. 555-565):

- Factor-Driven stage: This first stage, in which competitive advantage is based exclusively on endowments of labour and natural resources;
- Investment-Driven stage: In this stage, efficiency in producing standard products and services becomes the dominant source of competitive advantage;
- Innovation-Driven stage: In this stage, the ability to produce innovative products and services at the global technology frontier using the most advanced methods becomes the dominant source of competitive advantage.

Using interconnections between competitiveness – productivity and WEF's meaning of competitiveness, it's possible to decide on method to competitiveness measuring. A suitable way to productivity measurement can be considered a DEA approach because it does not assess only one factor, but a set of different factors that determine the level of productivity. Variables employed in empirical analysis are chosen based on the WEF approach to competitiveness, i.e. in the form of GCI which has many dimensions. Treating some these dimensions as inputs and outputs in a production process, the article exploits the notion of productive efficiency to extract information for policymakers, which cannot be otherwise obtained from conventional studies on competitiveness or indices approach alone. Using thus DEA approach is also suitable with respect to link to the main aim of competitiveness; it is the competitiveness of economies that determines how well they translate openness to trade and investment into opportunities for their firms, farms, and people and into

overall transformation process in the form of input-output relations. Competitive performance does not depend primarily on efficiency, but effectiveness. Efficiency is given by the ratio of inputs and outputs. Effectiveness implies the relationship between outputs and outcomes. In this sense, the distinction between output and outcome must be made. Outcome is often linked to welfare or growth objectives and therefore may be influenced by multiple factors. Effectiveness is more difficult to assess since the outcome is influenced by political choice (Mihaiu et al. 2010).

There are thus three key topics for the article concept: competitiveness – productivity – stage of development, and their interdependence is as follows:

- the relationship between concepts of competitiveness – productivity (Michael Porter's approach);
- the relationship between theories of competitiveness (competitive advantages) and stage of development (Michael Porter's approach);
- the relationship between WEF's approach to competitiveness evaluation and using stage of development concept;
- the relationship between WEF's approach to competitiveness evaluation and understanding of competitiveness through productivity;
- the relationship between the DEA method and its suitability to productivity evaluation.

Material and Methods

Measurement of performance present a controversial topic enjoying a great deal. The primary problem in creating an evaluation of any system is establishing clear performance standards and priorities at the beginning of the performance cycle. The early research work on this problem focused on separate measures of productivity, and there was a failure to combine the measurements of multiple inputs into any satisfactory measure of efficiency. Inadequate approaches included forming the average productivity for a single input (ignoring other inputs) and constructed an efficiency index in which a weighted average of the inputs is compared with the outputs. Responding to these inadequacies, Farrell (1957) proposed an approach that could deal more adequately with the problem. Farrell had investigated the question of how to measure efficiency and highlighted relevance for economic policymakers. Since that time, the techniques to measure efficiency have improved, and investigations of efficiency have become more frequent. Twenty years after Farrell's model, and building on those ideas, Charnes, Cooper, Rhodes (1978), responding to the need for adequate procedures to assess the relative efficiencies of multi-input/multi-output production units, introduced a powerful methodology that has been titled as the Data Envelopment Analysis (DEA). The approach is based on the simple model of Farrell (1957) for measuring the efficiency of units with one input and one output initially expanded in 1978 by Charnes, Cooper, and Rhodes (CCR model) assuming constant returns to scale (CRS), and modified in 1984 by Banker, Charnes, Cooper (1984), in the form of BCC model assuming variable returns to scale (VRS). DEA approach also includes advanced additive models, such as Slacks-Based Model (SBM) introduced by Tone (2002) and Free Disposal Hull (FDH) and Free Replicability Hull (FRH) models, which were first formulated by Deprins, Simar, Tulkens (1984).

DEA is an approach to providing a relative efficiency assessment and evaluating the performance of a set of peer entities called decision-making units (DMUs), which convert multiple inputs into multiple outputs. DEA is thus a multi-

criteria decision-making method for evaluating the efficiency of a group of DMUs. The definition of a DMU is generic and flexible. DEA is convenient for determining the efficiency of DMUs that are mutually comparable – using the same inputs and producing the corresponding outputs but with different efficiencies. DEA thus can categorise DMUs into two mutually exclusive sets: efficient and inefficient. Determining whether a DMU is useful from the observed data is equivalent to testing whether the DMU is on the frontier of the production possibility set. A DMU is efficient if the observed data correspond to questioning whether the DMU is on the imaginary production possibility frontier. All other DMUs are inefficient. The best-practice units are used as a reference for the evaluation of the other group units.

In recent years, research effort has focused on the investigation of the causes of productivity change and its decomposition. The Malmquist Productivity Index (MPI) has become the standard approach in productivity measurement over time within the non-parametric research. MPI has been introduced firstly by Caves, Christensen, Diewert (1982). Färe et al. (1994a, b) defined and applied an input-oriented productivity index as the geometric mean of the two MPIs developed by Caves, Christensen, Diewert (1982). In contrast to traditional DEA models which measure the efficiency of a DMU, MPI enables to measure productivity change of a DMU between two periods, t and $t+1$. MPI is defined as the product of Catch-Up and Frontier-Shift terms. Catch-Up, or better Efficiency change term deals with the degree to which a DMU improves or worsens its efficiency – technical efficiency change. Frontier-Shift term shows a change in efficient frontiers between two periods – technological efficiency change. Concerning the article topic of competitiveness and orientation of policy-makers to objectives, output orientation of model is used, i.e. OO MPI measuring efficiency change of units between periods t and $t+1$ is formulated via (1):

$$MPI_q(x_{q'}^{t+1}, y_q^{t+1}, x_{q'}^t, y_q^t) = E_q \cdot P_q \quad (1)$$

where x_q represent inputs and y_q represent outputs of evaluated DMU_q in periods t and $t+1$; E_q is the change in relative efficiency of DMU_q in relation to other units between periods t and $t+1$; P_q describes the change in the production possibility frontier as a result of the technology development between periods t and $t+1$. Components E_q and P_q are defined via (2) and (3) (Färe, Grosskopf and Margaritis, 2011, pp. 138-141):

$$E_q = \frac{\Phi_q^{t+1}(x_{q'}^{t+1}, y_q^{t+1})}{\Phi_q^t(x_{q'}^t, y_q^t)}, \quad (2)$$

$$P_q = \left[\frac{\Phi_q^t(x_{q'}^{t+1}, y_q^{t+1})}{\Phi_q^{t+1}(x_{q'}^{t+1}, y_q^{t+1})} \cdot \frac{\Phi_q^t(x_{q'}^t, y_q^t)}{\Phi_q^{t+1}(x_{q'}^t, y_q^t)} \right]^{1/2}, \quad (3)$$

where the optimum value of variable Φ_q expresses the need for a proportional increase of outputs to achieve DMU_q efficiency in time t and $t+1$ corresponding to inputs x_q and outputs y_q of the given period. The function $\Phi_q^t(x_{q'}^t, y_q^t)$ represents the input-output relationship of DMU_q from period t and production function in time t . Function $\Phi_q^{t+1}(x_{q'}^{t+1}, y_q^{t+1})$ expresses the input-output relationship of DMU_q from period t with

production function in time $t+1$. The function $\Phi_q^t(x_q^{t+1}, y_q^{t+1})$ represents the input-output relationship of DMU_q from period $t+1$ with production function in period t . The function $\Phi_q^{t+1}(x_q^t, y_q^t)$ represents the input-output relationship of DMU_q from period $t+1$ with production function in period $t+1$. By modification of equations (2) and (3), equation (4) makes possible to measure the change in technical efficiency and movement of the frontier regarding a specific DMU_q between periods t and $t+1$ (Färe, Grosskopf and Margaritis, 2011, pp. 138-141):

$$MPI_q = \frac{\Phi_q^{t+1}(x_q^{t+1}, y_q^{t+1})}{\Phi_q^t(x_q^t, y_q^t)} \left[\frac{\Phi_q^t(x_q^{t+1}, y_q^{t+1})}{\Phi_q^{t+1}(x_q^t, y_q^t)} \cdot \frac{\Phi_q^t(x_q^t, y_q^t)}{\Phi_q^{t+1}(x_q^t, y_q^t)} \right]^{1/2} = ECH_q \cdot FS_q, \quad (4)$$

where, the first term on the right-hand side measures the magnitude of ECH between periods t and $t+1$. The second term measures FS between periods t and $t+1$. As a result, $MPI_q < 1$ indicates a decrease in productivity of DMU_q from Period 1 to Period 2; the effect of $MPI_q = 1$ remains unchanged in productivity and $MPI_q > 1$ shows progress in productivity.

DEA has become a popular method for its advantages: it can evaluate a DMU's performance with multiple inputs and multiple outputs (what fulfil the criteria of the dataset, i.e. many input and output factors of competitiveness based on the number of numerous initial indicators); it allows the units of input and output variables to be different (the criterion meet the article outline, dataset represent various aspects of competitiveness on both side of input and output indicators); and it is not necessary to know the type of production function in advance. However, DEA also has several limitations: the DMUs must be homogeneous (the criterion of homogeneity represent 137 WTO countries); to obtain the best results, the number of DMUs must be at least twice than the total number of input and output variables (the criterion is met as follows). If a performance measure is added or deleted from consideration, it will influence the relative efficiencies. Empirically, when the number of performance measures is high in comparison with the number of DMUs, then most of the DMUs are evaluated efficiently. Hence, the obtained results are not reliable. Suppose there are n DMUs which consume m inputs to produce s outputs. If a performance measure (input/output) is added or deleted from consideration, it will influence the relative efficiencies. Empirically, when the number of performance measures is high in comparison with the number of DMUs, then most of the DMUs are evaluated efficiently. Hence, the obtained results are not reliable. There is a rough rule of thumb suggested by Cooper, Li, Seiford and Zhu (2004) which expresses the relation between the number of DMUs and the number of performance measures sufficient for DEA to be used, as follows (5), resp. in simplification (6):

$$n \geq \max \{m \times s, 3(m + s)\} \quad (5)$$

$$n \geq 3(m + s) \quad (6)$$

The following section examines a real data set involving 137 WTO members (for each of the six inputs and six outputs) to validate the proposed approach. In the article, the rule of thumb is met in all the cases of DEA empirical analysis, i.e.:

- 137 WTO members: $137 \geq 3(6 + 6)$, $137 \geq 3(12)$, $137 \geq 36$;
- 56 WTO members: $56 \geq 3(6 + 6)$, $56 \geq 3(12)$, $56 \geq 36$;
- 45 WTO members: $45 \geq 3(6 + 6)$, $45 \geq 3(12)$, $45 \geq 36$;
- 36 WTO members: $36 \geq 3(6 + 6)$, $36 \geq 3(12)$, $36 \geq 36$.

Empirical Analysis: Results and Debate

In a relatively short period, DEA has grown into a powerful tool for measuring efficiency, resp. productivity. DEA has been successfully applied to a host of different types of entities engaged in a wide variety of activities in many contexts worldwide, also in the territorial analysis (see e.g. Melecký, 2018; Hančlová and Melecký, 2016; Hsu et al. 2008; Christopoulos, 2007; Deliktas and Balcilar 2005; Golany and Thore, 1997). DEA measures can be applied to any productive organisation as well as to a whole economy.

Empirical Background

In the article, research is interested in using of the DEA for determining the productivity of each state by comparing its productivity with others in the group of WTO members. WTO consists of 164 members since 29 July 2016 (WTO, 2016), but not all are part of the empirical analysis due to data non-availability concerning selected approach for a database of indicators, i.e. WEF. Territorial aspect of the article is thus dedicated to 137 countries divided into three groups depending on each economy's stage of development.

"Although all of GCI pillars will matter to a certain extent for all economies, it is clear that they affect different economies in different ways. In line with the well-known economic theory of stages of development, GCI assumes that, in the first stage, the economy is Factor-Driven and countries compete based on their factor endowments (primarily unskilled labour and natural resources). As a country becomes more competitive, productivity will increase, and wages will rise with advancing development. Countries will then move into the Efficiency-Driven stage of development when they must begin to develop more efficient production processes and increase product quality because wages have risen and they cannot increase prices. Finally, as countries move into the Innovation-Driven stage, wages will have risen by so much that they can sustain those higher wages and the associated standard of living only if their businesses can compete using the most sophisticated production processes and by innovating new ones. Two criteria are used to allocate countries into stages of development. The first is the level of GDP per capita at market exchange rates. A second criterion is used to adjust for countries that, based on income, would have moved beyond stage 1, but where prosperity is based on the extraction of resources. This is measured by the share of exports of mineral goods in total exports (goods and services), and assumes that countries with more than 70 percent of their exports made up of mineral products (measured using a five-year average) are to a large extent factor driven. Countries that are resource driven and significantly wealthier than economies at the technological frontier are classified in the innovation-driven stage." (WEF, 2018). The breakdown of countries into three stages of development is evident from Table 2. It is necessary to mention that in the article – to fulfil criteria of the rule of thumb expresses the relation between the number of DMUs (countries) and the number of performance measures (input and output indicator) – only the main stages of development are applied without two transition stages. Classification of countries into stages of development is as follows (WEF, 2018):

- Factor-Driven stage (56 states): GDP per capita (USD) threshold <2.999;
- Efficiency-Driven stage (45 states): GDP per capita (USD) threshold 3.000-17.000;
- Innovation-Driven stage (36 states): GDP per capita (USD) threshold >17.000.

Indicators represent twelve GCI pillars are crucial for evaluation of productivity among WTO members by DEA approach. GCI pillars represent both sides of the required indicators, i.e. input and output size. Indicators come from WEF's database published within GCR in period 2007-2018 (WEF, 2017b, 2018). GCI pillars are grouped according to the different dimensions (input versus output aspects) of macroeconomic competitiveness they describe. The terms inputs and outputs are meant to classify pillars into those which describe driving forces of competitiveness, also regarding long-term potentiality, and those which are direct or indirect outcomes of a competitive society and economy. For this purpose to input-output division, the appropriate classification based on Regional Competitiveness Index (RCI) is used, i.e. the EU's approach for measuring its competitiveness and partly created in line with GCI construction (Annoni and Kozovska, 2010). Although all of GCI pillars matter to a certain extent for all economies, it is clear that they affect different economies in different ways what confirms the importance on application different stage of development concept. It is essential to keep in mind that GCI pillars are not independent: they tend to reinforce each other, and a weakness in one area often has a negative impact on others. Input indicators (II) represent pillars of Institutions (II1), Infrastructure (II2), Macroeconomic environment (II3), Health and primary education (II4), Higher education and training (II5), and Technological readiness (II6). Output indicators (OI) represent pillars of Goods market efficiency (OI1), Labour market efficiency (OI2), Financial market development (OI3), Market size (OI4), Business sophistication (OI5), and Innovation (OI6). Importance of each of the pillars for the issue of competitiveness describe GCR (WEF, 2018).

The reference period 2007-2018 includes years of growth dynamics and economic downturn and stagnation, effects of the financial crisis and subsequent recession can be considered as the other milestones (i.e. pre-in-post crisis years). Time-series is set concerning the GCI concept – including useful input-output indicators to DEA – because data before the GCR 2006 edition are not available due to changes in the GCI methodology. DEA calculates year-on-year productivity and efficiency changes between all years of period 2007-2018. Background for DEA interpretation are results based on the trend of year-on-year productivity changes in period 2007-2018 and overall productivity change for the whole period. Empirical analysis includes calculations for the sample of all countries (137 WTO members), and then estimates for countries divided into a group of each stage of development, i.e. 1st stage (56 states), 2nd stage (45 states), and 3rd stage (36 states).

Results and Discussion

Considering the increasing importance of economic growth in the society and presence in a competitive world, evaluation of the national performance has been remarkably considered, and various measures are brought up as a criterion for evaluation of territorial performance. Evaluation and comparison of the performance of similar units is an important part of the complex organisation' management. DEA is one of the power management techniques empowering to estimate territorial efficiency, resp. productivity in comparison with other competitors and decide for a better future. The empirical strategy of measuring WTO members' productivity consists of a three-step procedure: first, in the processing phase, a database of relevant indicators is created. Secondly, the application of DEA to assess the efficiency score of WTO members in the use of six inputs for production of six outputs in the field

of competitiveness. The second step consists of evaluating such rankings with MPI to assess the relative importance of its main components too. Thirdly, based on MPI scores, DMUs can be sort into groups, so the degree of association is strong between members of the same cluster and weak between members of different clusters. The expected results are of great variation within the whole sample because countries with low levels of competitiveness locate among strongly competitive states – a higher degree of heterogeneity is thus foreseen. Disparities are diminishing in the assessment of states within stages of development, which operate as more homogeneous groups.

Table 1 presents year-on-year efficiency changes for the whole sample of 137 evaluated countries gained in the form of national averages based on MPI scores for the period 2007-2018, as well as average for the whole period. Table 1 also presents MPI, ECH and FS for countries divided into stages of development. Results show that the level of inputs and outputs has decreased and increased among the reference period. But what do these values mean concerning MPI definition, or any of its elements? If MPI is less than one, it signifies productivity is getting worse, while if MPI equals to one, it indicates unchanging productivity and if MPI is higher than one, it means productivity getting better. From this point of view, it's necessary to say that the increasing trend of MPI seems to be positive information, but in fact (based on mean values) it means that in comparison of annual changes within the reference period 2007-2018, the overall productivity of 137 WTO evaluated countries has recorded firstly decreasing trend, and after increasing trend and finally mostly decreasing trend at the end of reference period. Overall, increasing trend prevails over the decreasing direction, as confirmed by the columns for all groups of DMUs in each year-on-year change, as well as the trend line for all four groups of 4 DMUs. It is not surprising due to the nature of comparing years. Evaluated countries solved with impacts of financial and economic crisis causing a decline in most macroeconomic indicators also entering into GCI.

Table 1 Average Efficiency for Year-On-Year Changes

WTO members/ reference period	OO MPI CRS					
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
137 countries	0.9792	1.0017	0.9781	0.9946	1.0102	1.0042
1st stage (56 countries)	0.9904	1.0097	0.9762	0.9864	1.0066	1.0071
2nd stage (45 countries)	0.9880	0.9890	0.9564	0.9903	1.0068	1.0060
3rd stage (36 countries)	0.9797	0.9838	0.9865	0.9825	0.9940	0.9967
WTO members/ reference period	OO MPI CRS					
	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2007-2018
137 countries	1.0057	0.9902	1.0053	0.9948	0.9964	0.9964
1st stage (56 countries)	1.0046	0.9923	1.0099	1.0052	0.9988	0.9988
2nd stage (45 countries)	0.9921	0.9929	1.0045	0.9836	0.9910	0.9910
3rd stage (36 countries)	1.0055	0.9950	0.9991	0.9817	0.9905	0.9905

Source: authors' elaboration based on the calculation in DEA Frontier, 2019

Broader aspects enter into the overall evaluation of economics, and these aspects are unnoticeable for DEA, i.e. part of the qualitative assessment in line with the evaluation of overall performance. Performance is linked with respect to competitiveness sense. The first Basic group represent the key basic drivers of all types of economies. As the economy develops, other factors enter into play for its advancement in competitiveness and are grouped in the second Efficiency group of pillars. At the most advanced stage of development of the economy, key drivers for improvement are pillars included in the third Innovation group. As countries move along the path of development, their socio-economic conditions change and different determinants become more important for macroeconomic competitiveness, as subsequently explained by WEF (2018). The best way to improve the competitiveness of more developed countries will not necessarily coincide with the idea to enhance less developed countries. At low levels of development, economic growth is determined primarily by the mobilisation of primary factors of production: land, primary commodities, and unskilled labour. As economies move from low- to middle-income status, global competitiveness becomes Investment-Driven, as economic growth is increasingly achieved by harnessing global technologies to local production. Foreign direct investment, joint ventures, and outsourcing arrangements help to integrate the national economy into international production systems, thereby facilitating the improvement of technologies and the inflows of foreign capital and technologies that support economic growth. In most economies, the evolution from middle-income to high-income status involves the transition from a technology-importing economy to a technology-generating economy, one that innovates in at least some sectors at the global technological frontier. For high-income economies at this Innovation-Driven stage of economic development, global competitiveness is critically linked to high rates of social learning and the rapid ability to shift to new technologies. The principal factors that contribute to competitiveness, and thereby improve living standards, will differ for economies at different levels of development. For some low-income economies, the main challenge is to get the basic factor markets – for land, labour, and capital – working correctly. As countries advance, the basic challenge is to make connections with international production systems by attracting sufficient flows of investment. Once reaching high-income status, the basic challenge facing countries is to generate high rates of innovation and commercialisation of new technologies. Critical institutions in the country and its barriers to continued growth will differ depending on the country's position. These facts also reflect the empirical analysis. Development potentials or weakness are inherent in the diversity that characterises a sample of all 137 evaluated WTO members.

Table 2 MPI Scores, Ranks of WTO Members based on Stage of Development

1st Stage of development (56 countries) Factor–Driven economies					2nd Stage of development (45 countries) Efficiency–Driven economies					3rd Stage of development (36 countries) Innovation–Driven economies				
Rank	DMU	Country	Score	Category	Rank	DMU	Country	Score	Category	Rank	DMU	Country	Score	Category
1	SEN	Senegal	1.0156	Efficient	1	BRB	Barbados	1.0099	Efficient	1	KOR	Korea, Rep.	1.0016	Efficient
2	KAZ	Kazakhstan	1.0153		2	HUN	Hungary	1.0084		2	PRT	Portugal	0.9983	Inefficient
3	VEN	Venezuela	1.0149		3	EGY	Egypt	1.0049		3	SWE	Sweden	0.9980	
4	MLI	Mali	1.0136		4	ARG	Argentina	1.0043		4	SVN	Slovenia	0.9968	
5	MWI	Malawi	1.0135		5	GTM	Guatemala	1.0037		5	NOR	Norway	0.9965	
6	CMR	Cameroon	1.0121		6	TUR	Turkey	1.0016		6	FRA	France	0.9959	
7	YEM	Yemen	1.0120			MEX	Mexico	1.0016		7	CHE	Switzerland	0.9957	
8	NGA	Nigeria	1.0114		7	COL	Colombia	1.0009		8	LUX	Luxembourg	0.9956	
9	MDA	Moldova	1.0107		8	MYS	Malaysia	0.9998		9	USA	United States	0.9955	
10	MDG	Madagascar	1.0093		9	THA	Thailand	0.9992		10	BEL	Belgium	0.9942	
11	LBR	Liberia	1.0081		10	LTU	Lithuania	0.9991		11	NLD	Netherlands	0.9933	
12	GMB	Gambia	1.0071		11	MAR	Morocco	0.9990		12	ITA	Italy	0.9927	
13	GHA	Ghana	1.0070		12	SVK	Slovakia	0.9989			CAN	Canada	0.9927	
14	MRT	Mauritania	1.0051		13	PAN	Panama	0.9972		13	ARE	United Arab Emirates	0.9926	
15	SYC	Seychelles	1.0045		14	JAM	Jamaica	0.9970		14	JPN	Japan	0.9925	
16	NPL	Nepal	1.0041		15	JOR	Jordan	0.9966		15	ISL	Iceland	0.9922	
17	BEN	Benin	1.0034		16	LVA	Latvia	0.9959		16	AUT	Austria	0.9915	
	GIN	Guinea	1.0034		17	CPV	Cape Verde	0.9958	Inefficient	17	CZE	Czech Republic	0.9912	
18	LAO	Lao PDR	1.0027		18	SLV	El Salvador	0.9952			SGP	Singapore	0.9912	
19	LSO	Lesotho	1.0026		19	DOM	Dominican Republic	0.9944		18	ESP	Spain	0.9911	
20	TCO	Chad	1.0020		20	SAU	Saudi Arabia	0.9941		19	EST	Estonia	0.9909	
21	RWA	Rwanda	1.0016		21	CHL	Chile	0.9913		20	CYP	Cyprus	0.9894	
22	UKR	Ukraine	1.0009		22	NAM	Namibia	0.9912		21	GBR	United Kingdom	0.9890	
	CIV	Côte d'Ivoire	1.0009		23	HRV	Croatia	0.9910		22	DEU	Germany	0.9884	
23	SUR	Suriname	1.0008		24	ZAF	South Africa	0.9907		23	ISR	Israel	0.9882	
24	MMR	Myanmar	1.0007		25	BGR	Bulgaria	0.9904		24	QAT	Qatar	0.9872	
25	MOZ	Mozambique	1.0004		26	MKD	Macedonia, FYR	0.9902		25	DNK	Denmark	0.9871	
26	GUY	Guyana	1.0000	Status Quo	27	LKA	Sri Lanka	0.9890		26	FIN	Finland	0.9870	

27	IND	India	0.9996	Inefficient	28	BRA	Brazil	0.9889	27	HKG	Hong Kong SAR	0.9869
28	BRN	Brunei Darussalam	0.9989		29	MNE	Montenegro	0.9878	28	MLT	Malta	0.9861
29	SWZ	Swaziland	0.9978		30	CHN	China	0.9863	29	IRL	Ireland	0.9847
	BOL	Bolivia	0.9978		31	MUS	Mauritius	0.9862	30	AUS	Australia	0.9845
30	BFA	Burkina Faso	0.9976		32	URY	Uruguay	0.9857	31	BHR	Bahrain	0.9829
31	MNG	Mongolia	0.9973		33	PER	Peru	0.9844	32	NZL	New Zealand	0.9807
32	UGA	Uganda	0.9969		34	PRY	Paraguay	0.9832	33	GRC	Greece	0.9798
33	BWA	Botswana	0.9965		35	OMN	Oman	0.9831	34	TTO	Trinidad and Tobago	0.9742
	TJK	Tajikistan	0.9965		36	GEO	Georgia	0.9829				
34	KHM	Cambodia	0.9961		37	ECU	Ecuador	0.9818				
35	AGO	Angola	0.9955		38	ALB	Albania	0.9812				
36	VNM	Vietnam	0.9953		39	IDN	Indonesia	0.9805				
37	PHL	Philippines	0.9934		40	TUN	Tunisia	0.9803				
38	NIC	Nicaragua	0.9932		41	ARM	Armenia	0.9780				
39	ZMB	Zambia	0.9925		42	ROU	Romania	0.9775				
40	KGZ	Kyrgyzstan	0.9920		43	CRI	Costa Rica	0.9760				
41	PAK	Pakistan	0.9912		44	POL	Poland	0.9746				
42	KWT	Kuwait	0.9898									
43	HTI	Haiti	0.9897									
44	BDI	Burundi	0.9889									
45	GAB	Gabon	0.9876									
46	RUS	Russian Federation	0.9874									
47	TZA	Tanzania	0.9867									
	KEN	Kenya	0.9867									
48	HND	Honduras	0.9841									
49	BGD	Bangladesh	0.9832									
50	SLE	Sierra Leone	0.9819									
51	ZWE	Zimbabwe	0.9558									

Source: authors' elaboration based on the calculation in DEA Frontier, 2018

Part of the explanation of efficiency results has to do with differences in competitiveness. An economic entity in the country with low level of competitiveness may not have similar opportunities as an economic entity in a highly competitive state. What does it mean for efficiency? DEA results in efficiency differ from GCI results in competitiveness. Why? Is a high level of competitiveness necessarily associated with a high level of efficiency and vice versa? It may not always be the case of evaluated countries. Results for individual states shows Table 2. Level of efficiency

does not show extreme diversity and variability in the sample. Across stages of development, differences in MPI scores are not large both in the case of efficient and inefficient countries.

Based on Table 1, results of 56 countries within the 1st stage of development show a stable trend for productivity level recorded in most cases, i.e. the stable number of increasing and decreasing MPI scores. Also in this case, overall, increasing trend prevails over the decreasing direction. For the sample of 45 countries within the 2nd stage of development, i.e. Efficiency-driven economies, lower values prevailed above the higher profits, but overall the lower score recorded a growing trend over time. Based on results of 36 countries within the 3rd stage of development in this case, as in the previous example of Efficiency-driven economies, lower values prevailed above the higher profits, but overall the lower score recorded a growing trend over time. Related to a comparison of results between less and more developed countries, i.e. based on division countries into different stages of development, empirical results of MPI scores confirm the economic theory that less developed countries (in many cases) are growing at a faster or same pace than more developed countries. Developed countries are, however, the driver of the growth of less developed or developing countries, which in many respects depend on developed countries, especially regarding financial investment. In GCR, e.g. country achieves lower GCI score, and in DEA higher MPI score and seems to operate more efficiently in the whole reference period. Such a conclusion is relevant by comparing values of inputs and outputs in DEA, and the fact that outputs are achieved with given inputs. If the input-output ratio is low on both sides, countries could be considered as efficient in the transformation process. Such results are not linked with overall competitiveness evaluation which does not depend primarily on efficiency, but the effectiveness of global economic operations.

Conclusion

Economic globalisation has powered global growth and is an irreversible trend of our times. The pursuit and promotion of competitiveness increasingly shapes the dynamics of economic, social, political and cultural change in the contemporary world. Policy-makers at all levels have been swept up in this competitiveness fever too. This growing interest may perhaps be partly attributable to their awareness of the fact that all countries are having to contend with raised standards of economic efficiency as a result of the globalisation of goods and factor markets. The economy may be competitive, but if the society and the environment suffer too much, the country will face significant difficulties and vice versa. Many of the differences in economic growth and quality of life within a country may be explained by differences in competitiveness. Methodological framework of the article measure macroeconomic competitiveness of WTO members based on GCI pillars, this article thus closely followed the methodology proposed by WEF. Determinants of competitiveness – components were distinguished into input and output size which measure different aspects of transformation processes of economic activities.

Using efficiency analysis through DEA approach – the method aimed to identify the efficient and inefficient countries of WTO and to estimate the relative efficiency of each state within the evaluated sample. Does it evolve the question: why measuring macroeconomic competitiveness is so important? Because “if you cannot measure it, you cannot improve it” (Lord Kelvin, resp. an Irish mathematical physicist

William Thomson). A quantitative score of competitiveness will facilitate WTO members in identifying possible weaknesses together with factors mainly driving these weaknesses. It, in turn, will assist countries in catching up the process. In reality, every pillar may not play an equal role in the competitiveness of every country what is logical, and therefore the concept of different stages of economic development was applied. Accordingly, follow-up research will thus orientate on regional relations and linkages across individual continents (based on driven forces of competitiveness relevant to each stage of development), and the added value of regions' links to the competitiveness of WTO members.

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Bibliography

1. Annoni, P., Kozovska, K. (2010). EU Regional Competitiveness Index 2010. Luxembourg: Publication Office of the European Union.
2. Banker, R.D., Charnes, A., Cooper, W.W. (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis. *Management Science* 30(9):1078-1092.
3. Caves, D.W., Christensen, L.R., Diewert, E.W. (1982). The Economic Theory of Index Numbers and the Measurement of Input, Output, and Productivity. *Econometrica*, 50(6):1393-1414.
4. Charnes, A., Cooper, W.W., Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research* 2(6):429-444.
5. Christopoulos, D.K. (2007). Explaining country's efficiency performance. *Economic Modelling* 24:224-235.
6. Cooper, W.W., Li, S., Seiford, L.M., Zhu, J. (2004). Sensitivity analysis in DEA. In: Cooper W.W. et al. (eds.). *Handbook on Data Envelopment Analysis*. New-York: Springer, 71-92.
7. Deliktas, E., Balcilar, M. (2005). A Comparative Analysis of Productivity Growth, Catch-Up, and Convergence in Transition Economies. *Emerging Markets Finance and Trade* 41:6-28.
8. Deprins, D., Simar, L., Tulkens, H. (1994) Measuring Labor-Efficiency in Post Offices. In: Marchand, M. et al. (eds.). *The Performance of Public Enterprises: Concepts and Measurements*. Amsterdam: North-Holland, pp 243-267.
9. Färe, R., Grosskopf, S., Knox Lovell, C.A. (1994a). *Production Frontiers*. Boston: Cambridge University Press.
10. Färe, R., Grosskopf, S., Margaritis, D. (2011). Malmquist Productivity Indexes and DEA. In: Cooper, W.W. et al. (eds.). *Handbook on Data Envelopment Analysis*. New-York: Springer, 127-149.
11. Färe, R., Grosskopf, S., Norris, M., Zhang, Z. (1994b). Productivity Growth, Technical Progress and Efficiency Change in Industrialized Countries. *The American Economic Review* 84(1):66-83
12. Farrell, M.J. (1957). The Measurement of Productive Efficiency. *Journal of the Royal Statistical Society. Series A (General)*, 120(3):253-290.

13. Golany, B., Thore, S. (1997). Restricted best practice selection in DEA: An overview with a case study evaluating the socio-economic performance of nations. *Annals of Operations Research* 73:117-140.
14. Hančlová, J., Melecký, L. (2016) Application of the Nonparametric DEA Meta-frontier Approach with Undesirable Outputs in the Case of EU Regions. *Business Systems Research Journal* 7(2):65-77.
15. Hsu, M., Luo, X., Chao, G.H. (2008). The Fog of OECD and Non-OECD Country Efficiency: A Data Envelopment Analysis Approach. *The Journal of Developing Areas* 42:81-93.
16. Krugman, P. (1994). Competitiveness: A Dangerous Obsession. *Foreign Affairs* 73(2):28-44.
17. Melecký, L. (2018). The main achievements of the EU structural funds 2007-2013 in the EU member states: efficiency analysis of transport sector. *Equilibrium. Quarterly Journal of Economics and Economic Policy* 13(2):285-306.
18. Mihaiu, D.M., Opreana, A., and Cristescu, M.P. (2010) Efficiency, effectiveness and performance of the public sector. *Romanian Journal of Economic Forecasting* 1(4):132-147.
19. OECD (1992). *Technology and the Economy: The Key Relationships*. Paris: OECD.
20. Porter, M.E. (1990). *The competitive advantage of the nations*. Basingstoke: Macmillan Press.
21. Tone, K. (2002). A slacks-based measure of super-efficiency in data envelopment analysis. *European Journal of Operational Research* 143(1):32-41.
22. WEF (2018). Reports. WEF <https://www.weforum.org/reports>. Accessed 2018.
23. WTO (2016). Members and Observers. WTO https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm. Accessed 2016.

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MARKET POWER, STABILITY AND BANK PROFITABILITY: EVIDENCE FROM SLOVAKIA

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Abstract

The banking sector, as a part of the financial market, influences the whole financial market but also the economy of whole country. It is necessary to analysis the situation of the banking sector and it is regulated by national banks. The Slovak banking sector is considered to be the one of the most stable in Europe because Slovak banks have enough own resources. The main aim of the banks is to achieve profit, which is influenced not only by customer preferences but also by changes in stability or competition between banks. The aim of the paper is to analyse, how changes in competition and bank stability affect their profitability. Using the annual data from the detailed balance sheets of the banks that operated in the years from 2005 to 2016, we analysed the relationship between variables. In examining this relationship we used two methods - Granger causality and linear regression.

Key words: *Profitability, stability, competitiveness, The Slovak banking sector*

JEL Classification: C21, G21, G28

Introduction

Banks are one of the most important subjects of the economy, because they significantly contribute to the development of the country by promoting different activities (Temizsoy et al. 2015). Beck et al. (2014) explains that it is necessary to meet certain requirements and without them modern economies could not function. One of the requirements is well developed financial system which has an essential role in every country and the stability of the financial system is important for stability of the whole economy. According to Kočíšová (2012), bank activities are regulated by rules, the aim of which is not only to prevent from failure of the financial institution, but also to protect funds of clients. Regulation also help to secure health of the banking and financial system. Athanasoglou et al. (2008) argues that healthy and profitable banking sector is able to maintain a stable position and ensure the stability of the entire financial system even in the time of negative economic shocks. Claeyes and Vander

Vennet (2008) found that a sufficient level of equity capital supports the stability and profitability of banking systems in Central and Eastern Europe.

In the last decades, the global financial system has been influenced by a number of significant changes – by deregulation, market globalization and innovation (Piotrowska et al., 2017). The most important of these changes is the process of globalization, which affected structure, performance and stability of the financial system (Galloppo et al., 2015). Financial globalization has brought considerable benefits to national economies and many opportunities for economic growth, as well as challenges to increase profitability and competition in this environment (Scott and Arias, 2011). In the last two decades, globalization of the financial market and the banking sector has increased sharply, mainly in low – income and developing countries (Klomp and Haan, 2015). However, the latest global financial crisis has affected the banking sector. Bank profits declined significantly and it led to a boom in literature and studies on the determinants of banking profitability. These studies involve different countries, for example this topic was processed by Athanasoglou et al. (2008) and in Switzerland it was processed by Dietrich and Wanzenried (2011).

The banking sector of Slovakia is composed of the National Bank of Slovakia and a network of commercial banks. It indicates two-tiered banking system. In 2004, the National Bank of Slovakia joined the European System of Central Banks (ESCB) and in 2009 became a part of Eurosystem. Since 2014, the National Bank of Slovakia has been a part of single supervisory regime for banks in Europe. The main objective of the European Central Bank and the National Bank of Slovakia is to maintain price stability. It contributes to achieving high levels of economic activities and an improvement in economic conditions also influences the banking sector and its profitability.

Slovak banking sector is considered to be the one of the most stable in Europe. This suggests that banks are prepared to face to negative economic shocks thanks to a sufficient level of own resources. The National Bank of Slovakia adjusts the volume of own resources of commercial banks and helps to maintain the financial stability also in the case of financial crisis. Banks are subjects of analysis conducted under hypothetical negative economic scenarios, for example deep recession or financial crisis. The main goal of this analysis is to see whether the bank has the capital to manage itself during tough times. Banks are dependent not only on economic development but also on their clients. The development of the economy influences the preferences of citizens. It leads to higher or lower interest in banking products which causes increase or decrease of bank profitability. Hence it is important to analyse the situation on the Slovak banking sector at regular intervals and it allows competent authorities to take preventive or corrective measures.

The banking sector of Slovakia has been hit by global financial crisis less than banks in other countries. The most frequently used measures of bank profitability are ROA (Return on Assets), ROE (Return on Equity) and NIM (Net Interest Margin). All of these indicators had similar trend before and after financial crisis. Financial stability reports of The National Bank of Slovakia indicate that the Slovak banking sector was developing and the major bank indicators improved before financial crisis. By the year 2008 bank profitability increased but the accrue-ment was different in individual banks and it deepened the inequality between banks. Banks are closely associated with the economies and therefore the global financial crisis reduced bank profits. The determinants of bank profitability are specific to each bank. According to Trujillo-Ponce (2012), the main determinants of the bank profitability are for example capitalization, size, effectiveness and economic growth.

According to Smirlock (1985), the relationship between size and bank profitability is significant and positive. Short (1979) explains that large banks are more profitable because they can raise less expensive capital. Berger and Bouwman (2013) argues that better-capitalized banks should be more flexible to make certain types of loans and it may increase their profitability. Sujud and Hashem (2017) suggest positive relationship between efficiency and profitability. They explain that development of information technology leads to product development. This decreases cost-income ratio and increases bank efficiency. It means that cost per unit should be lower. Alhassan et al. (2015) found significant positive influence of economic growth on bank profitability.

One of the most important macroeconomic objectives of the National Bank of Slovakia is maintaining stability. The global financial crisis is the major factor which can influence the stability of Slovak banks. Although Z-score value, which is one of the measures of bank stability, decreased, Slovak banks had enough own resources and it helped to overcome the crisis. After great recession of 2007-2009, the Z-score value increased. To ensure the stability of Slovak banking and financial sector, The National Bank of Slovakia adopted measures which led to improvement of capital adequacy. Thus banks were prepared to face the negative economic shocks. This is also the reason, why the profit is one of the most important goals of banks. According to Diaconu and Oanea (2015), the financial stability is influenced mainly by country's economic characteristic – economic growth. They suggest that economic growth have a significant and positive impact on stability.

Global financial crisis also affected competition in the banking sector. Classen and Leaven (2003) analysed the competitiveness indicators. They found that concentration, entry restrictions and foreign ownership should influence the banking sector. They explain that banking system concentration is negatively related to competitiveness. Lower entry barriers and greater foreign bank entry should increase competition among banks.

The period of negative economic shocks clearly shows the existence of relationship between various bank characteristics. For example, sufficient level of equity capital is important to ensure the financial stability and it is also related to bank profitability.

The main aim of this paper is to analyse the statistically significant relationship between bank characteristics – profitability, competitiveness and stability. Based on the analysis we evaluate how changes in competitiveness and stability affect changes in profitability and whether these changes are positive or negative. The rest of the paper is structured in following manner. Next section describes methods and also dependent and independent variables which we used in analysis. The section results and debate provides empirical results of both analysis – Granger causality and linear regression. The last section gives the concluding remarks on our main findings.

Material and Methods

This paper focuses on the analysis of the relationship between profitability, stability and competition of Slovak banks in the period 2005 - 2016. We used bank-level data from Finstat, a database containing bank financial statements and we include 11 Slovak commercial banks.

Based on existing literature, we used various indicators to evaluate profitability, stability and competitiveness. A description of each variable can be found

in Table 1. Following Alhassan et al. (2015), profitability of Slovak banks is represented by two profitability indicator ratios – return on assets, return on equity and also by net interest margin. We measured bank competition as a ratio of bank assets to total assets of all banks. According to Berger et al. (2009), to measure bank stability we used indicator, namely the Z-score. The indicator is estimated as follows:

$$Z - score_{it} = \frac{ROA_{it} + \frac{E_{i,t}}{TA_{i,t}}}{\sigma_{ROA_T}} \quad (1)$$

Where $ROA_{i,t}$ represents the return on assets for banking sector i in year t , $\frac{E_{i,t}}{TA_{i,t}}$ is the equity to total assets ratio for banking sector i in year t , and σ_{ROA_T} denotes the standard deviation of return on assets over the full sample period (T years). A higher Z-score implies a higher degree of solvency and higher degree of bank stability.

Our model includes two more independent variables from banking and macroeconomic environment – bank capitalization and GDP growth rate. Bank capitalization is measured with the ratio of equity on total assets.

Table 1 Variables description

Variables	Symbols	Definition
<i>Dependent variables</i>		
Profitability	ROA	Return on assets
	ROE	Return on equity
	NIM	Net interest margin
<i>Independent variables</i>		
Stability	Z-score	See equation (1)
Competitiveness	MS	Bank's assets to total assets of all banks
Bank capitalization	EQR	Equity to total assets ratio
Economic growth	GDP	GDP growth rate

Source: Prepared by authors

In order to test the Granger causality relation between profitability, stability, competitiveness and two more variables – capitalization and GDP growth rate we will follow the concept of Granger causality developed by Granger (1981). The Granger causality model is computed by running bivariate regressions and therefore the general equations can take the following form:

$$y_{i,t} = \alpha + \sum_{k=1}^K \gamma_i^{(k)} * y_{i,t-k} + \sum_{k=1}^K \beta_i^{(k)} * x_{i,t-k} + \varepsilon_{i,t} \quad (2)$$

$$x_{i,t} = \alpha + \sum_{k=1}^K \gamma_i^{(k)} * x_{i,t-k} + \sum_{k=1}^K \beta_i^{(k)} * y_{i,t-k} + \varepsilon_{i,t} \quad (3)$$

Where $i = 1, 2, \dots, N$ denotes the cross-sectional dimension; $t = 1, 2, \dots, T$ denotes the time period dimension of the panel; α is intercept; $k = 1, 2, \dots, K$ are lags; ε is error term. The analysis was based on the following hypotheses:

$$H_0: \beta_i = 0, \forall i = 1, 2, \dots, N \quad (4)$$

$$H_1: \beta_i \neq 0, \forall i = 1, 2, \dots, N \quad (5)$$

$$\beta_i \neq 0, \forall i = N_1 + 1, N_1 + 2, \dots, N; (0 \leq \frac{N_1}{N} \leq 1) \quad (6)$$

The null hypothesis states that there exists no relationship between variables. On the other hand, the alternative hypothesis states that there exists a causal relationship from x to y for at least one cross-unit of the panel.

Before the Granger causality testing it was necessary to test the stationarity of the series and also to choose the optimal number of lags. The stationarity of the series we tested by unit panel root test. The optimal number of lags is estimated using multiple criteria - Akkaike, Hannan - Quinn and Schwarz criterion.

We also analysed the effect of independent (explanatory) variables on dependent (explained) variables by using linear regression, through which we estimated the beta coefficients. The general equation for linear regression has a following form:

$$Y_i = \beta_0 + \sum_{j=1}^k \beta_j X_{ij} + \varepsilon_i \quad (7)$$

In this general equation Y_i represents explained (dependent) variable, in case of this study it is ROA, ROE, Z-score, market share and GDP. X_{ij} are explanatory (independent) variables and represent the value of market share, ROA, ROE, Z-score and also capitalization of bank in observation i . i is number of observations, $i = 1, 2, \dots, n$ and ε is error term. β_0 represents the intercept of the regression and β_j proxy the value of regression coefficient j , for $j = 0, 1, 2, \dots, k$.

For detailed analysis, linear regression was applied only on the relationships which seemed to be statistically significant in Granger causality. Based on the results of the Granger causality, we lagged the series of the individual explanatory variables by one year thus we obtained ten different models. The entire analysis was performed in the Program R.

Results and Debate

Results of Granger causality

The Granger causality results in Table 2 clearly show that the profitability is influenced by other bank characteristics - competitiveness, stability and also by capitalization of banks. It means that market share, Z - score and the capitalization have the impact on profitability return indicators (ROA and ROE).

Table 2 reports the causal relationship between two bank characteristics in models with various dependent variables. Results of Granger causality analysis suggest that changes in bank profitability evaluated by ROA affect the banks stability in the Granger sense. In addition, changes in return on assets anticipate the changes in bank competitiveness. On the other hand, bank profitability represented by coefficient ROA is influenced by the changes of stability, competitiveness and bank capitalization.

Similar results are found in the model with dependent variable return on equity (ROE). Changes in the bank profitability evaluated by ROE have an impact on bank stability and also on GDP growth rate in the Granger sense. Additionally, changes in stability, competitiveness and bank capitalization predict changes in return on equity.

Results indicate that model with dependent variable NIM does not include statistically significant relationship between variables. Therefore we did not analyse this model in more detail.

Table 2 Granger causality results

Model	Direction	P - value	Direction	P - value
ROA	ROA=>MS	0,06737 .	MS=>ROA	0,002597 **
	ROA=>Z-score	5,064e-05 ***	Z-score=>ROA	0,001657 **
	ROA=>EQR	0,973	EQR=>ROA	0,001657 **
	ROA=>GDP	0,2371	GDP=>ROA	0,4158
ROE	ROE=>MS	0,2811	MS=>ROE	0,004733 **
	ROE=>Z-score	0,002789 **	Z-score=>ROE	0,02915 **
	ROE=>EQR	0,6772	EQR=>ROE	0,02391 *
	ROE=>GDP	0,208163 .	GDP=>ROE	0,2634
NIM	NIM=>MS	0,6008	MS=>NIM	0,8713
	NIM=>-Z-score	0,9186	Z-score=>NIM	0,6177
	NIM=>EQR	0,5258	EQR=>NIM	0,4032
	NIM=>GDP	0,8757	GDP=>NIM	0,6826

*** significant at 0,1% level ($\alpha=0,001$), ** significant at 1% level ($\alpha=0,01$), * significant at 5% level ($\alpha=0,05$) and . significant at 10% level ($\alpha=0,1$)

Source: Prepared by authors

Results of linear regression and debate

Based on the results of Granger causality, we analysed statistically significant relationships by linear regression in more detail and formed ten various models (ten equations). Linear regression was based on the results of Granger causality and therefore independent (explanatory) variables were lagged by one year. The models had a following form:

$$\text{Model 1: } MS_t = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 MS_{t-1} + \varepsilon_t \quad (8)$$

$$\text{Model 2: } ROA_t = \beta_0 + \beta_1 MS_{t-1} + \beta_2 ROA_{t-1} + \varepsilon_t \quad (9)$$

$$\text{Model 3: } Z - \text{score}_t = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 Z - \text{score}_{t-1} + \varepsilon_t \quad (10)$$

$$\text{Model 4: } ROA_t = \beta_0 + \beta_1 Z - \text{score}_{t-1} + \beta_2 ROA_{t-1} + \varepsilon_t \quad (11)$$

$$\text{Model 5: } ROA_t = \beta_0 + \beta_1 EQR + \beta_2 ROA_{t-1} + \varepsilon_t \quad (12)$$

$$\text{Model 6: } ROE_t = \beta_0 + \beta_1 MS_{t-1} + \beta_2 ROE_{t-1} + \varepsilon_t \quad (13)$$

$$\text{Model 7: } Z - \text{score}_t = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 Z - \text{score}_{t-1} + \varepsilon_t \quad (14)$$

$$\text{Model 8: } ROE_t = \beta_0 + \beta_1 Z\text{-score}_{t-1} + \beta_2 ROE_{t-1} + \varepsilon_t \quad (15)$$

$$\text{Model 9: } ROE_t = \beta_0 + \beta_1 EQR + \beta_2 ROE_{t-1} + \varepsilon_t \quad (16)$$

$$\text{Model 10: } GDP_t = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 GDP_{t-1} + \varepsilon_t \quad (17)$$

We tested linear regression models to know for sure they fulfil key assumptions. The linear regression has five key assumptions – linear relationship, multivariate normality Jarque-Bera test), no or little multicollinearity (VIF factor), no autocorrelation (Durbin-Watson test) and homoscedasticity (Breusch – Pagan test and Goldfeld Quandt test). If linear regression models satisfy these assumptions, we can interpret the results.

However, some of our models did not fulfil the assumption of homoscedasticity and no autocorrelation. It caused distorted statistical significance of coefficients. Therefore we applied variance – covariance matrix on these models which helped us to analyse statistical significance of coefficients apart from heteroscedasticity and autocorrelation. Results of linear regression are reported in Table 3.

Table 3 Linear regression results

Model	Regression coefficient	Value of the coefficient	Statistical significance
Model 1 (MS)	MS _{t-1}	1,00427	< 2,2e-16 ***
	ROA _{t-1}	0,04658	0,2227 x
Model 2 (ROA)	MS _{t-1}	0,04771	0,00157 **
	ROA _{t-1}	0,10893	0,62676 x
Model 3 (Z-score)	ROA _{t-1}	-82,9809	0,003842 **
	Z-score _{t-1}	0,99286	< 2,2e-16 ***
Model 4 (ROA)	Z-score _{t-1}	0,00129	0,00159 **
	ROA _{t-1}	-0,00094	0,9932 x
Model 5 (ROA)	EQR _{t-1}	0,11634	0,00159 **
	ROE _{t-1}	0,11545	0,21825 x
Model 6 (ROE)	MS _{t-1}	0,58488	3,252e -05 **
	ROE _{t-1}	0,10824	0,3605
Model 7 (Z-score)	ROE _{t-1}	-4,3232	1,07e – 05 ***
	Z-score _{t-1}	0,9170	< 2,2e – 16 ***
Model 8 (ROE)	Z-score _{t-1}	0,01125	0,1402 x
	ROE _{t-1}	0,08674	0,5583 x
Model 9 (ROE)	EQR _{t-1}	1,08728	0,108 x
	ROE _{t-1}	0,14893	0,2899 x
Model 10 (GDP)	ROE _{t-1}	0,04186	0,07579 .
	GDP _{t-1}	0,19508	0,04174 *

*** significant at 0,1% level (a=0,001), ** significant at 1% level (a=0,01), * significant at 5% level (a=0,05) and . significant at 10% level (a=0,1)

Source: Prepared by authors

Linear regression confirmed the existence of seven out of ten relationships presented in Granger causality (see Table 2). The results indicate that bank profitability is largely influenced by competitiveness, stability and capitalization. The growing competition represented by higher market share causes increase in bank profitability. Applied on Slovak banking sector, it means that the size of market share has a positive impact on bank profits. We found that market share has a positive significant relationship with profitability indicator ratios – ROA and ROE at the 1-percent significant level. Higher competition among banks can lead to loosening of credit standards. It increases demand for loans by households or companies. As a consequence of this, bank profit raises. According to Tan (2016), growing competition motivates banks to improve efficiency and reduce costs. As a result of cost reduction, bank profitability improves. We can see that impact of competition on bank profits depends on the economic development of countries. This is consistent with the study Mirzaei et al. (2013). On the one hand, this study shows statistically significant relationship between market share and bank profitability in modern economies, but on the other hand it demonstrates that impact of market share on bank profits is not statistically significant in emerging economies. In contrast to this and our study, Alhassan (2015) rejected the effect of market share on profitability in Ghanaian banking industry.

Another important factor influencing bank profitability is stability. Our results show that Z – score which is measure of bank stability has a significant positive relationship with return on assets (ROA) at the 1-percent significant level. This indicates that increasing bank stability (with higher Z-score value) translates into higher return on assets in the next period. Our analysis confirmed the existence of causal relationship between profitability and stability. It means, level of stability depends on return profitability indicators ROA and ROE, as well as the profitability depends on stability (Z-score value). The negative value of regression coefficient suggests that higher return on assets ratio (ROA) reduces the financial stability of banks in the next period. ROA indicator does not recognize the internal (own capital and reserves) and external sources of finance. The negative relationship between profitability and stability is the result of increasing indebtedness and raising finance from external sources in bank financial statements. Higher level of external resources increases risks to the financial stability. We found similar results, when profitability was measured by ROE indicator. Higher return on equity ratio reduces bank stability (Z-score) in the next period.

One of the most important determinants of bank profitability is capitalization. The effect of capitalization on bank profitability is positive and statistically significant across the models giving an indication that higher capitalization translates into higher profitability. Capitalization has a significant positive relationship with profitability at the 1-percent significant level. Capitalization is one of the most important determinants of bank profitability for many reasons. According to Trujillo – Ponce (2013), one of these reasons relies on the effects of the Basel Accord. It requires banks to hold a minimum level of capital as a percentage of risk-weighted assets. The capitalization represents the equity-to-asset ratio and therefore better capitalized banks should be more profitable. The high level of capitalization helps bank to gain clients confidence. As a result, the volume of loans increases and it leads to higher profitability. Tan and Floros (2012) has found that capitalization has the tendency to increase bank profitability because well capitalized banks have good lending habit and the cost of funds for banks with high capitalization are low. Highly capitalized banks are prepared to face the negative economic shocks and secure deposit from a customer. According to Sufian a Chong (2008), lower capital ratios in banking imply higher

leverage and risk. It leads to greater borrowing costs and therefore the profitability level should be lower for the worst-capitalized bank and higher for better-capitalized bank.

The banking and financial sector is one of the most important part of many development economies which significantly contribute to economic growth. Our results show that GDP which is a measure of economic growth has a significant positive relationship with profitability (ROE). This indicates that increasing profits translate into economic growth in the next period. Against expectations, positive effect of economic growth on bank profitability was not confirmed.

Conclusion

The Slovak banking sector is considered to be the one of the most stable in Europe but it has been influenced by significant changes – globalization, innovations and deregulation. The Slovak banking sector was influenced also by global financial crisis of 2008. In this period of time, macroeconomic and banking indicators became worse and dropped sharply. As a result of financial crisis, profitability and stability of Slovak banks decreased. Regulation and supervision over the Slovak banking sector is carried out by specialised institution – The National Bank of Slovakia. This institution adjusts the volume of own resources of commercial banks depending on the economic situation. By this means, the National Bank of Slovakia helps to maintain financial stability also in the case of financial crisis. Economic monitoring allows to the National Bank of Slovakia to take preventive or corrective measures and it helps commercial banks to deal with negative economic shocks.

This paper examines the determinants of bank profitability and the relationship between profitability, stability, competitiveness, capitalization and GDP growth rate. We used annual data of 11 Slovak banks in period 2005-2016.

The main aim of the banks is to achieve profit and therefore this paper evaluates the determinants that affect the profitability the most. The main contribution of the paper can be considered the application of a Granger causality approach to examine the relationship between variables.

The results of Granger causality showed more relations but only two of them were causal. Granger causality results showed the existence of causal relationship between profitability and stability (return on assets ROA and Z – score). Causal relationship was also confirmed between profitability and market share, it means between profitability and competitiveness. Additionally, the results showed one-way relations running from capitalization to return on assets (ROA) and return on equity (ROE). We also found that market share influences return on equity and return on equity significantly affects the GDP growth rate.

Based on the Granger causality results, we analysed statistically significant relationships by linear regression in more detail. The linear regression confirmed the existence of seven out of ten relations. The results of Granger causality suggesting the impact of return on assets (ROA) on stability (Z-score) and the impacts of stability and capitalization on return of equity (ROE) were rejected. Specifically, the linear regression clearly shows whether the relations between variables are positive or negative. We found that only ROA and ROE which are the measures of profitability have a negative impact on stability (Z-score).

Linear regression did not confirm all of the statistically significant results of Granger causality. Therefore we suggest to analyse these relationships by using

additional methods and variables to evaluate bank characteristics. To bring robustness to our findings, we also suggest that similar studies could be replicated in banking markets in other European countries.

Bibliography

1. Alhassan, A. L., Tetteth, M. L., Brobbey, F. O. (2015). Market power, efficiency and bank profitability: evidence from Ghana. *Economic Change and Restructuring*, 49(1), 71-93.
2. Athanasoglou, P., Brissimis, S., Delis, M. (2008). Bank – specific, industry – specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions & Money*, 18(2), 121-136.
3. Beck, T., Colciago, A., Damjan, P. (2014) The role of financial intermediaries in monetary policy transmission. *Journal of Economic Dynamics & Control*, 43, 1-11.
4. Berger, A., N., Bouwman, CH., H., S. (2013). How does capital affect bank performance during financial crises? *Journal of Financial Economics*, 109, 146-176.
5. Berger, A. N., Klapper, L. F., Turk – Ariss, R. (2009). Bank Competition and Financial Stability. *Journal of Financial Services Research*, 35(2), 99-118.
6. Claeys, S., Vander Vennet, R. (2008). Determinants of Bank Interest Margins in Central and Eastern Europe: A Comparison with the West. *Economic Systems*, 32(2), 197-216.
7. Diaconu, I. R., Oanea, D.C. (2015). Determinants of bank's stability. Evidence from CreditCoop. *Procedia Economics and Finance*, 32, 488 – 495.
8. Dietrich, A., Wanzenried, G. (2011). The determinants of bank profitability before and during financial crisis: evidence from Switzerland. *Journal of International Financial Markets, Institutions & Money*, 21(3), 307-327.
9. Galloppo, G., Paimanova, V., Aliano, M. (2015). Volatility and Liquidity in Eastern Europe. *Financial Markets under Efficiency and Transparency Conditions. Economics and Sociology*, 8(2), 70-92.
10. Granger, C. W. J. (1981). Investigating casual relations by econometric. *Rational Expectations and Econometric Practice*, 1, 371.
11. Klomp, J., Haan J. (2015). Bank regulation and financial fragility in developing countries: Does bank structure matter? *Review of Development Finance*, 5(2), 82-90.
12. Kočíšová, K. (2012). Kapitálová primeranosť a efektívnosť vybraných bankových sektorov Európskej únie. *Acta academica karviensis: vedecký recenzovaný časopis*, 12(4), 71-84.
13. Classens, S., Leaven, L. (2003). What drives bank competition? Some international evidence. *Journal of Money, Credit and Banking*, 36(3), 563-583.
14. Mirzaei, A., Moore, T., Liu, G. (2013). Does market structure matter on bank's profitability and stability? Emerging vs. advanced economies. *Journal of Banking and Finance*, 37(8), 2920-2937.
15. Piotrowska, A., Polasik, M., Piotrowski, D. (2017). Prospects for the application of biometrics in the Polish banking sector. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 12(3), 501-518.
16. Scott, J., Carlos – Arias, J. (2011). Banking profitability determinants. *Business Intelligence Journal*, 4(2), 209-230.
17. Short, B.K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe and Japan. *Journal of Banking and Finance*, 3, 209-219.

18. Smirlock, M. (1985). Evidence on the (non) relationship between concentration and profitability in banking. *Journal of Money, Credit, and Banking*, 17, 69-83.
19. Sufian, F., Chong, R. R. (2008). Determinants of bank profitability in a developing economy: empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting and Finance*, 4(2), 91-112.
20. Sujud, H., Hashem, B. (2017). Effect of bank innovations on profitability and return on assets (ROA) of commercial banks in Lebanon. *International Journal of Economics and Finance*, 9(4), 35-50.
21. Tan, Y. (2016). The impacts of risk and competition on bank profitability in China. *Journal of International Financial Markets, Institutions & Money*, 40, 85-110.
22. Tan Y, Floros C. (2012). Bank profitability and inflation: the case of China. *Journal of Economic Studies*, 39(6), 675-696
23. Temizsoy, A., Iori, G., Montes - Rojas, G. (2015). The role of bank relationships in the interbank market. *Journal of Economic Dynamics and Control*, 59, 118-141.
24. Trujillo - Ponce, A. (2013). What determines the profitability of banks? Evidence from Spain. *Accounting and Finance*, 53(2), 561-586.

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