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PREFACE

Complexities surrounding the globalization and the interconnectedness of nations are creating challenges for nation-states as well as other newly formed political structures. Innovative social, political, and economic structures are being formed and existing structures are being re-formed to adapt to the forces of globalization. With all these changes (and thus innovations), scholars and practitioners are trying to understand how they fit within these complexities and what the future will be like if we do not respond effectively.

Through this conference we brought experts from around the world to share their research and experiences in business, economics, finance and management. Our conference sparked some exceptional conversations around the very meaning of culture and cultural competencies.

Here, we present some of our scholarly discussions that took place during our conference in a more detailed manner and hope that these scholarly conversations continue to inform us all as we work towards an even more globalized world in which we can celebrate its unity.

Respectfully

On Behalf of the Advisory Board

Prof.Murat Tas

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Evaluation of Mobile Commerce in terms of Mobile Commerce Applications and Customer Loyalty

Assist. Prof. Serdar Yarlıkaş, Kocaeli University,

ABSTRACT

The purpose of this study is to gain insights into business administration students' perceptions regarding mobile commerce applications as well as to identify key factors influencing customer loyalty in mobile commerce. Firstly, based on the previous literature, 18 mobile applications and sets of customer loyalty constructs for mobile commerce were extracted from the literature. Then, a questionnaire was applied to obtain the importance ratings of business administration students' with regard to each mobile application and the impact of each factors on customer loyalty in mobile commerce. 291 business administration students were participated in the questionnaire. Of these, 150 were second-year students and 141 third-year students. Ten-point Likert scale was used to determine the importance of each mobile application and on the other hand five-point Likert scale was used to determine the impact of each factors on customer loyalty. The survey results denote that the participants prefer using mobile phone especially to search and reach information and there were no significant differences between the second-year students (who have not taken the Management Information Systems Course yet) and the third-year students with respect to importance ratings of mobile applications. Path analysis was used to determine the impact of each factors on customer loyalty. Research findings indicate that functionality, price and security statistically affected customer loyalty in mobile commerce. Besides, price is a less important factor than security and functionality for students that took the Management Information Systems course before.

KEYWORDS: Mobile Commerce, Path Analysis, Customer Loyalty

The Impact of Transformational Leadership on Turnover Intention: How Employees Level of Education and the Number of Employees Affect This Relationship?

Mr. Ahmet Cengiz Ucar, Gebze Technical University, acucar@gmail.com
Assist. Prof. Bora Yıldız, Istanbul University, borayildiz@istanbul.edu.tr

ABSTRACT

As it is well known, companies want to recruit employees, who have contributed to their business and have to meet their needs to keep such employees in the firm. To overcome these requirements, it is essential that employees' relations with their leaders must be steady and sustainable. Since extant literature shows that leadership styles play a crucial role in the prediction of turnover intention, we focused on the effect of transformational leadership on the turnover intention. Additionally, the second motivation of this study is that past researchers show that intention to leave is one of the dominant triggers of the turnover behaviour. Taken together these arguments, based on Social Exchange Theory, the purpose of this study is to uncover the role of transformational leadership on turnover intention. To shed light on this research question, in the first quarter of 2017, survey method was used, and convenient sampling method was used for gathering data. The sample of this study consists of 238 participants from the private sector. The data were analysed with using SPSS software. Findings show that transformational leadership and transformational leadership related factors reduce the intention to leave. Also, the level of education and the number of employees play moderator role in the negative relationship between intention to quit and transformational leadership. Specifically, If the level of education is high (bachelor and postgraduate level) and the number of employees is high (250 and over), the transformational leadership-turnover intention relationship is stronger. Managerial and practical implications, as well as further research directions, are also provided.

KEYWORDS: Transformational Leadership, Turnover Intention, Level of Education, Employee Headcount

A New Trend in Marketing; Viral Marketing

Vedat Ulusoy, Independent Researcher, dr.vedatulusoy@gmail.com

ABSTRACT

In this study, viral marketing, which is defined as share the positive or negative experience and information about the products or services that consumers buy with other consumers over the internet was evaluated. The use of the internet and accordingly usage of social media increase day by day with the development of technology and communication possibilities. The widespread use of social media has provided consumers to share their thoughts about the products or services they have received with other consumers over the internet. Viral marketing has taken place in the word of mouth marketing with the sharing of experiences and information by the consumers over the internet; viral marketing is one of the most effective marketing methods with the aim of reaching consumers very quickly and increasing brand awareness. Along with the widespread use of the Internet, communication between individuals has reached global dimensions. Today, a small message shared over the internet reaches vast quantities within seconds. Businesses which want to benefit from this high speed and impact have adapted to postmodern marketing activities, show that traditional marketing activities have less effect on people. In this study, viral marketing concept, which is one of the most effective post-modern marketing methods, was explained in the light of "rational choice" theory and was given information about the definition and importance of viral marketing. At the same time, strategies have been put forward to create an active viral marketing activity. This study based on the review of related literature because of viral marketing is a new concept in the marketing area. Finally, managerial and practical implications, as well as further research directions, are also provided

KEYWORDS: Internet, Social Media, Viral Marketing

Optimization Financial Technology Through the Application of E-Money Paytren: Reduce Poverty in Indonesia as a Direct Marketing Syariah Tiered (plbs)

Erwanda Nuryahya, University Education Indonesia, erwandanuryahya@student.upi.edu

ABSTRACT

Indonesia is a country with a population of highest number four in the world which are still having many troubles development myriad .One of the problems which is very important and unresolved is poverty , proven in 2017 unemployment rate of 5,33 % of the population indonesia while the people who are in the line of poverty by 10,70 % , limited jobs is the one of the causes of poverty in indonesia is not yet resolves .On the other side, technological development has changed the current financial of potential business with nominal promising transactions on of 14,5 billion dollars a year . The purpose of making a piece of writing this scientific so they knew benefits application e-money paytren in enhance its partners owned by .Veritra sentosa international .The methodology used is the method of quantitative and qualitative descriptive by case study approach. The data is primary and secondary data. The primary data was obtained from interviews and observation pt.Veritra international security and the distribution of 400 quistionnaires to paytren partner. Secondary data obtained from the literature study and documentary. The result of research conducted that the paytren as a direct marketing syariah tiered (plbs) proven able to enhance its partners. For that the optimization of financial technology through the application of e-money paytren has to be and best placed to the people of indonesia because were proven increase income of the partners. Hence, paytren's application is very useful for the government, the sharia financial industry, and society in reducing poverty in indonesia.

KEYWORDS: E-Money Paytren Application, Financial Technology, Sharia Financial Industry, Poverty, Direct Sales Syariah Tiered

Risk Management in Health Institutions; A Field Research

Assoc. Prof. Dr. Taşkın Kılıç, Gümüşhane University
Yüksel Aris, Gümüşhane University

ABSTRACT

Healthcare institutions with a high level of risk potential but at the same time indispensable Institutions for the continuation of life. This study is conducted in order to determine the risk factors that may occur in health institutions. Theoretical framework of the research was obtained from literature review. The field survey was conducted of a questionnaire on 100 health staff working in Van Education and Research Hospital. The obtained data was evaluated by L type risk analysis matrix method. As a result of the research; three high risk potentials have been identified. The first of these was seen as "the risk of violence against health workers". "Risk of hospital infections" was the second place. Another risk factor was "earthquake risk". In the middle risk group were; cut-and-drill injuries, inadequate lighting and heating, personnel leaving work, ergonomics and risk of radiation.

KEYWORDS: Risk, Hospital Risk, Risk Managment

Diffusing Brand Messages Through Digital Influencers for New Product Entries

Dr. Deniz Maden, Ege University, deniz.maden@ege.edu.tr

ABSTRACT

Social media created an entirely new type of influencers and changed the way for generating, collecting and sharing information and how people contribute to content. These influencers are called the “digital influencers” and they represent new type of opinion leaders with a huge potential of network and influential power over consumers. Their growing power is leading them to be gradually included in brand communication strategies with the aim of transmitting brand messages to target consumers.

In particular, many brands benefit from the huge influential power of this new group of opinion leaders for new product entries. Digital influencers seem to have an initiative role in introducing and diffusing messages about new products. This research explains the concept of digital influencers based on the theoretical framework of diffusion of innovations and examines how digital influencers diffuse brand messages for new product entries. This phenomenon is evaluated from the perspective of the ‘diffusion of innovations theory’ with an investigation directed to digital fashion influencers’ Instagram posts for new product entries. Following a qualitative approach and a multiple case study design, this research seeks to understand the diffusion of new product entries through digital influencers.

KEYWORDS: Social Media, Brand Communication, Digital Influencers, Diffusion of Innovations, New Product Entries.

The Situation of the Advertisement on Social Networking Sites Towards the Brokerage Firm and The Social Media Shareholders Taxation

Ceyda Kükreler, Afyon Kocatepe University, kukrerrceyda@gmail.com

Pınar Bengi Kaya, Afyon Kocatepe University, pinarbengi@hotmail.com

ABSTRACT

Intermediary companies are engaged in providing the environment that will enable taxpayer real or legal person's advertisements to reach more consumers on internet. These companies are working with famous or conspicuous social networkers on the basis of a special agreement that will allow more people or groups to advertise on social networks while doing this business and they are earning income according to the number of people or groups that social partners have reached. Individuals who provide continuous advertising services within a commercial organization within the pages of social media accounts they own must be taxpayers of income in terms of commercial gain. In the event that the activities of those who perform advertising services through social networks within the scope of the contract made over the internet are evaluated within the scope of commercial activity due to the Income Tax Law and the liability is established according to the Article 1/1 VAT. In this study, it will be evaluated the situation of the advertisement on social networking sites towards the brokerage firm and the social media shareholders on the income tax, the value added tax and the tax procedure law and how these deficiencies should be addressed are discussed.

KEYWORDS: Social media, Social Networking Sites, Advertisement, Taxation

An Empirical Examination of the Impact of Implementing TQM On the Competitiveness of Pharmaceutical Firms: The Case of Egypt

Prof.Hatem El-Gohary, Qatar University, helgohary@qu.edu.qa

Rania Elmenabbawy, Qatar University, rania_elmenabbawy@foc.cu.edu.eg

ABSTRACT

An empirical examination of the impact of implementing TQM on the competitiveness of pharmaceutical firms: The case of Egypt Rania Mohamed El-Menabbawy Faculty of Commerce, Cairo University, Egypt Professor Hatem El-Gohary College of Business & Economics, Qatar University, Qatar Abstract: This study addresses Total Quality Management approach as a managerial approach that aims to improve the overall performance of the organisation and direct its resources to achieve customer satisfaction. By using TQM, customer satisfaction can be achieved through: producing products (goods & services) with high levels of quality, continuous improvement of technical & managerial processes, developing human resources skills and organisation performance so that the organisation can exceed customers' expectations, maintain their loyalty and face competitors. Pharmaceuticals companies operating in the Arab Republic of Egypt in all sectors (public sector, joint sector and the private sector or domestic investment) in Cairo, Giza, 6th of October and Alexandria have been selected as the implementation field for this study. Within the study, the different factors for the effective implementation of Total Quality Management were examined in the context of Egyptian Pharmaceuticals companies to examine companies' ability to achieve and improve sustainable competitive capabilities through TQM. The results showed that the successful and effective implementation of Total Quality Management helps the organisation to build distinct and sustainable competitive capabilities to enable the organisation to have superiority over its competitors and maintain its customers and to respond to the changes that occur in the market & business environment. The factors and requirements for successful & effective implementation of TQM were found to be effective leadership, developing employees' skills, quality control & assurance, customer focus, managing suppliers' quality. The ranking of independent variables of TQM that have more impact that is powerful on achieving high average sales were managing suppliers' quality, customer focus, developing employees' skills, effective leadership, quality control & assurance. Meanwhile, the ranking of independent variables of TQM that have more impact that is powerful on achieving high average profits were managing suppliers' quality, developing employees' skills, customer focus, quality control & assurance, effective leadership. Based on the results achieved within the study, improving both quality and competitive capability of Egyptian pharmaceuticals companies can be achieved through the successful and effective implementation of Total Quality Management that works on developing the organisation's performance and improving its productivity in addition to investing its resources (human, physical, financial, information, knowledge, etc..).

KEYWORDS: TQM (Total Quality Management), Competitiveness, TQM Effective Implementation Enablers, TQM Effective Implementation Obstacles, Pharmaceutical Firms, Egypt.

Effect of Psychological Biases on Investment Decision Making: Evidence from Pakistan

Dr. Taqadus Bashir, Bahria University, doc.tbc.tabs@gmail.com

Mr. Ephraim John, Bahria University, iffyjohn.ej@gmail.com

ABSTRACT

The study aimed to examine the effect of psychological biases on investment decision making. Most available studies on investment decisions in the field of Behavioral finance have been conducted in the developed cities of Pakistan such as Islamabad, Rawalpindi, Karachi, Lahore etc. but the region of Khyber Pakhtoon Khawah was neglected in this context and no sample was previously taken from KPK. The present study selected sample of 200 respondents from this region to study overconfidence, regret aversion, self-control and investment decision making. The data was collected through the snow-ball sampling technique, in which each investor was requested to recommend another colleague investor having capital tied up in real estate, gold, currency, bonds (insurances) and shares or partnerships. The impact of overconfidence and self-control on investment decision was found to be positively significant whereas regret aversion contributes negatively. With reference to cultural dynamics of KPK region of Pakistan the data and results indicated the presence of mental and emotional biases in the decision making of investors. Real estate and personal business are found to be two most prevalent investment types among investors of KPK because these are considered as safe investment in comparison to other types.

KEYWORDS: Behavioral Finance, investment decisions, overconfidence bias, self-control, regret aversion, cognitive biases, emotional errors

The Perception Change of Migration in Europe After 9/11 Attacks and Its Effects on Syrian Migrants

Serpil Bardakçı Tosun, Alanya Alaaddin Keykubad University, serpil.bardakci@alanya.edu.tr

ABSTRACT

Poverty, unemployment, political instability, economic backwardness, political and religious pressures and civil war; the dynamics of immigration. On the other hand, the demand for workforce in the developed regions, due to the supply of inexpensive human resources by underdeveloped countries, Africa, the Middle East, South Asia, South America and Asia, towards the more secure and richer regions of the world, Europe and North America. When we look at numerical data on migration around the world, there are now about 232 million immigrants in the world - regular and irregular, of which 59 are in the geographical regions where developed countries are located. In short, almost every thirty one emigrates and 48 percent of this number consists of women. However, it should be noted that it is difficult to confirm the accuracy of the quantitative data obtained if it is remembered that immigrant populations and migration movements have developed illegally at present. There is an outbreak of illegal immigration to Europe, especially in the Middle East and African countries for reasons such as economic and security. Among the main reasons for this are Europe's stable environment and safety, as well as the fact that the world is an important production and market area, attracts immense interest from both immigrants and asylum seekers. It is widely widespread that the European Union's immigration policies, when observed in general, are aimed at accepting some political refugees in practice from the perspective of a qualified human resource and human rights perspective. However, this "acceptance" behavior refers to immigrants who have adopted the "European Identity", not the "global citizen" of the immigrant body in question, fully integrated and even able to be assimilated or to be succeeded in the next step. It is known that European countries are beginning to make decisions about illegal immigration before 9/11. There are two reasons for this. First, the Muslim presence in Europe has begun to gain more visibility in the urban fabric. Second, Muslim immigrants are more likely to claim more with their existence in life. So 9/11th, this process was accelerated. The 9/11 terrorist attacks are a new milestone for Europe, where the issue of othering is rooted and long-lived. In Europe, where belonging and the exclusionist culture have been open to debate, this has created a serious threat to Muslim immigrants, who are regarded as "others" in history, and European immigrants have become one of the key elements of the security problem. In European and American media, where Muslims are portrayed as potential suspects or terrorist candidates globally, brutal and strict discourse is expressed against immigrant Muslims. While these approaches are not to say but take place among countries' security policies, they also manifest themselves in social life, employment, business life and other income generating activities. The threat perception deepened as the perception change in the society was added to the concerns about Muslim immigrants. European and other states with immigration worries, on the basis of this and similar developments, have increased the strict measures taken to achieve a crusting and difficult access to their own countries. The Syrians who fled their countries due to the civil war want to migrate to Europe where they think they will be more comfortable in economic terms via Turkey or other illegal ways. Union members reported that they were opposed to this influx of immigration through terrorism. The influence of the immigration and Islamic opposition, which was reflected on 9/11, is inevitable.

KEYWORDS: Syria, 9/11, Migration, Europe, Otherization

Humanitarian Response in Disaster Management: A Case of Logistics Coordination Among Humanitarian Organizations in Pakistan

Ms. Hifsa Aftab, Fast Nuces University, hifsa.aftab@nu.edu.pk

Mr. Rehan Aftab, Fast Nuces University, rehan.aftab@nu.edu.pk

Ms. Farah Naz, Fast Nuces University, farah.naz@nu.edu.pk

ABSTRACT

The aim of this research is to study the impact of donor condition and information sharing on effective logistics coordination during humanitarian response. The disaster management activities during the Earthquake of 2005 in Pakistan are the primary focus of this research. Effective logistic coordination during disaster management emerges as consistent issue in humanitarian response. In this study, the determinants of effective logistics coordination are studied in context of Earthquake of 2005 in Pakistan. Data is gathered from humanitarian organizations which were part of humanitarian response in 2005. Statistical analysis is performed to determine the nature of relationship. The results of statistical tests resemble a reasonable impact of independent variables on dependent variable in the paper. This study implies that there are other factors as well that influence the logistic coordination of humanitarian organizations. The findings of the study are valuable for future work in this regard.

KEYWORDS: Information Sharing Network, Donor Funding, Effective Logistics Coordination, Humanitarian Organizations, Disaster Management.

Integrating E-Trust Antecedents into TAM to Explain Mobile Banking Behavioral Intention: A SEM-Neural Network Modeling

Yakup Akgül, Alanya Alaaddin Keykubat University, yakupakgul@gmail.com

ABSTRACT

Higher penetration of powerful smartphones and high-speed mobile internet access (3G and 4G mobile networks) are leading to better offer and higher usage of powerful mobile devices - especially smartphones- for mobile banking activities among people. The purpose of this paper is to identify key antecedents that influence the adoption of mobile banking. The research extends the original Technology Acceptance Model, by incorporating four e-trust antecedents, namely, benevolence, credibility, integrity, in addition to orientation to resolve problems components for understanding adoption. Data were collected from 192 mobile banking users and analyzed using an innovative two-stage research methodology. In the first stage, structural equation modeling was employed to test the research hypotheses and identify significant antecedents influencing mobile banking acceptance. In the second stage, the significant antecedents obtained from the first stage were input to a neural network model for ranking. The results showed that integrity, perceived usefulness and perceived ease of use are the three main predictors influencing mobile banking acceptance. Theoretical and practical implications of findings are discussed.

KEYWORDS: TAM, Mobile Banking, Trust, Turkey Neural Network, SEM

Perception Versus Experience of Islamic Banks in Pakistan

Assist. Prof. Falak Khan, Fast-Nuces University, falak.khan@nu.edu.pk

Mr. Imran Ahmad Salfi, Maju University, iasalfi@gmail.com

ABSTRACT

Islamic banking has grown rapidly in the past three decades with its existence in more than 75 countries globally. The banking system litigates itself to be following Sharia law in its true sense, which is questioned by many religious scholars. This paper follows a qualitative approach to find out the differences of perceptions of Islamic banks and their experiences from two perspectives i.e. customers of Islamic banks and managers of Islamic banks. Our analysis suggests that there exists a difference between what people see Islamic banks are and what they experience. This gap is growing and calls for Islamic banking system to take measures in order to grow their banking system further.

KEYWORDS: Islamic Banking, Perceptions, Experiences and Sharia Compliance

Reflecting and Practicing Entrepreneurship in the Arab Gulf: The Case of Oman

Assist. Prof. Fahri Benli, Sultan Qaboos University, fbenli@squ.edu.com

ABSTRACT

The development and growth of entrepreneurship programs in higher education has had phenomenal growth across the globe for the past twenty years. Currently there is a growing body of knowledge that contemporary research in entrepreneurship education needs a clarification in definition, uniqueness and process to be effectively promoted. Economies in the Arabian Gulf are running dual economies as they exploit natural resources and are also working towards developing an innovative economy. The entrepreneurship ecosystem in the Arabian Gulf is regarded in its development stages, encompassing a complex system of culture and external influences pursuing innovation and competitive advantage. Higher education institutes play an important role in the ecosystem as change agents to contribute to social and economic renewal by teaching entrepreneurship knowledge and skills. The Arabian Gulf needs entrepreneurship programs that are unique and address the complex systems in the ecosystem. The purpose of this paper is to present an integrative learning path to entrepreneurial process through reflective learning and practice to enhance learning outcomes and applied skills. The research is interested in how students used reflective learning journals (RJLs) and applying entrepreneurial models. In total 31 RJLs were submitted as part of an entrepreneurship course involving a business modelling exercise. Content analysis was applied to the RJLs in assessing the depth of student reflection based upon Kolb's learning cycle. To date, findings show that students appear to be ambiguous about the different courses in entrepreneurship and learning outcomes and show a variance in reflective ability. Practical application of business models in understanding entrepreneurship appears to have increased engagement and learning outcomes. This study responds to a call for more innovative teaching approaches to entrepreneurship education in the Arabian Gulf and specifically for Oman. Integrating RJLs into entrepreneurship curriculum should enhance skill development in reflection ability and business planning. In terms of policy making, practical application of entrepreneurial models should play an important role in moving towards an innovative economy.

KEYWORDS: Reflection, Experiential Learning, Entrepreneurship Education, Skill Development

The Potential of Issuance Sukuk Region for Infrastructure Financing in Special Region of Yogyakarta

Ms. Gina Nabilah, Islamic University of Indonesia, missginanabilah@gmail.com

Mr. Ahmad Hidayatullah, Islamic University of Indonesia, ahmdhidayatullah@gmail.com

ABSTRACT

The Special region of Yogyakarta (simply Yogyakarta) is one of the provinces in Indonesia which has stable economic and investment condition. Pursuant to this situation, Yogyakarta has great potential in issuing regional sukuk as a stimulus of infrastructure financing to overcome the obstacles at the local level so as to support the acceleration in the development of infrastructure that has been designed. This paper aims to know an overview in financing infrastructure and preparedness in its publication. Descriptive methods by utilizing secondary data and existing publications as our study objective. So based on the analysis we found that Yogyakarta is ready to issue the regional sukuk because it is supported by a clear underlying asset, relatively stable economic and investment conditions and urgency of infrastructure development that designed in the 2012-2017 Regional Medium-Term Development Plan (RPJMD) 2012-2017.

KEYWORDS: Sukuk Region, Infrastructure Financing Yogyakarta, Economic.

The Mediating Role of Job Satisfaction in the Impact of the Burnout on Cyberloafing

Assist.Prof. Fatih Yıldırım, Erzurum Technical University, fatih.yildirim@erzurum.edu.tr

ABSTRACT

The rapid development of technology has made virtual platforms a part of human life. So much so that people spend hours in virtual environments. This situation has shifted to working hours for people working in organizations. Hence, many people are virtually free at work. This situation is divided into two important and insignificant virtual records which attracted the attention of researchers. On the other hand, the stress levels in socio-economic life and people's burnout levels have increased due to various reasons. For these reasons, it is aimed to show that job satisfaction will play a role in reducing this effect by considering that you have increased the level of positive and negative virtual resignation in your study. This study has been carried out on Public Accountants and Financial Advisors operating in Erzurum. Correlation analysis of the obtained data with the SPSS package program revealed a positive relationship between burnout and virtual withdrawal as well as a negative relationship between job satisfaction and burnout and virtual withdrawal. In the analysis of Structural Equation Modeling at LISREL, it has been found that exhaustion plays a role of enhancing effect on positive and negative virtual resilience by playing an intermediary role of job satisfaction.

KEYWORDS: Cyberloafing, Burnout, Job Satisfaction

Financing and Investment Pattern of Small Businesses Owned by Women Entrepreneurs in India

Prof. Shivaji Borhade, Bharati Vidyapeeth University, Pune, drsnborhade@gmail.com

ABSTRACT

Small business sector in India constitutes a major part of the economy. It plays a great role in terms of creating additional employment with low capital investment. Financial assistance is being provided through the banking sector and other funding agencies to encourage women entrepreneurs. This paper examines financing and investment pattern of small businesses owned by women entrepreneurs in India. The study is based on primary data collected from 120 women entrepreneurs from the state of Maharashtra. The attitude of women entrepreneurs towards financial institutions were sought on a five-point scale. Analysis of the data reveals that financial institutions' role in financing small businesses owned by women entrepreneurs is low. Hence, majority of the women entrepreneurs are depending upon internal sources of finance to establish their business. Moreover, awareness of different sources of finance is low among women entrepreneurs. There is a need to increase entrepreneurship among women by taking efforts to increase the awareness of different sources of finance available to them. Loans should be available to women entrepreneurs easily and at low cost. Rules and regulations regarding method of availing loans should be simple and supportive.

KEYWORDS: Finance, Investment Pattern, Small Business, Women Entrepreneurs

Phases of University Industry Interaction: An Example from Creative Cultural Industries Perspective

Assoc. Prof. H. Okan Yeloglu, Baskent University, okany@baskent.edu.tr

Assoc. Prof. G. Senem Gençtürk Hizal, Baskent University, gencturk@baskent.edu.tr

Asst. Prof. Nihan Gider Işıkman, Baskent University, ngider@baskent.edu.tr

Dr. Erman Demir, Baskent University, medemir@baskent.edu.tr

ABSTRACT

This study aims at explaining University Industry Interaction (UII) with the sub-phases of interaction process. In a last couple of years there is a growing trend about the interaction between universities and the industries (Vedovello, 1997; Barnes, et. all, 2002). The links established with universities and industries strength many subjects like collaboration, transferring of knowledge, skills and ideas, making projects for better product and/or service improvements (Etzkowitz, 1998; Azagra-Caro, 2007). For these reasons this study addresses the question of how to organize university-industry interaction more effectively. To answer this important question, the interaction is defined as the combination of a process which has several sub-phases. These sub-phases are defined as formation phase, operational phase, outcome phase and impact phase.

Başkent University Creative Cultural Industries Research Center (BU-CCIRC) aims at achieving these interactions with intertwining academic, social and sectoral levels. To accomplish this, BU-CCIRC collaborates with sector in career-focused student activities; with municipalities in adult education activities and academic research. The focal point of the formation phase is “Creative Ecosystem of BU” research project. In this project, the meaning of creativity was examined and the center was introduced to discuss the possibilities of cooperation with different disciplines for the above mentioned activities. A variety of activities are planned for the operational phase with the interaction potentially created.

This study will also try to draw a conceptual framework for UII by giving examples to each phase and give insights about what to be done in the future.

KEYWORDS: University-Industry Interaction, Interaction Process, Creative Cultural

The Competitive Effect of Corporate Reputation Practises in The Global World

Assist. Prof. Dr. V. Özlem Akgün, Selcuk University, ozlemakgun@selcuk.edu.tr

ABSTRACT

The marketing strategies that today's businesses are pursuing in order to survive and provide competitive advantage in changing competitive conditions are very important. Businesses' most valuable assets are undoubtedly their corporate reputation. Institutional reputation also reveals the structure of an institution's core competence, which is evaluated by its stakeholders, and whose institutional intellectual accumulation is transformed into a competitive advantage. Beyond competing with products and services, they compete with businesses, reputation and tangible assets. The most important contributions to operating the corporate reputation are the sustainable growth and the advantages created by the competition. Today, competitive superiority is shaped in direct proportion to the ability to use different products and services, or differentiation from the manufacturers, technology and technology. In the same context, advantages such as being able to sell products and services at higher prices, demanding lower prices from suppliers, increasing consumer and employee loyalty, general income level, and avoiding crisis periods are among the gains that the concept of corporate reputation management provides in terms of competitive advantage. The underlying reasons for evaluating corporate reputation as a competitive tool are the fact that the reputation is a value on its own and is considered as a business entity and that the value created by the entity creates indirectly on business functions. Corporate reputation, awareness of the business and the products or services offered by the enterprise creates a sense of difference and this perception increases the overall productivity by increasing the business income in terms of perception and financial function by attracting and holding qualified workforce in terms of human resources.

As a result, in a modern marketing environment where products and services are similar to each other, enterprises have struggled to put their assets in front of their competitors. In particular, the perception of business stakeholders in the recent period is at the forefront of issues that are highly regarded. Corporate reputation management practices, which have a significant place among abstract assets that can not be bought with money, and competitive position in the market for brand-name enterprises to increase after successful implementation of these applications.

KEYWORDS: Corporate Reputation, Competition, Globalization

Examination of Conflict, Constraint, And Counter-Productive Work Behaviors of Hospital Employees

Salih Börteçine Avcı, Ataturk University, savci@atauni.edu.tr

Muhammer Şahin, Ataturk University

Fatih Yıldırım, Erzurum Technical University, faith.yildirm@erzurum.edu.tr

ABSTRACT

One of the main ways for organizations to be standing in a competitive environment is to be aware of the precautions that they need to take in terms of counter-productive work behaviors. The purpose of this study is to increase awareness on counter-productive work behaviors and examine the effects of negative factors that lead to these behaviors. There are multiple factors that influence the counter-productive work behaviors in literature and there is limited research on these factors in our country. Particularly the concepts of constraint and conflict had not been examined thoroughly in terms of counter-productive work behavior. Therefore, this research study addresses the concepts of conflict and constraints between individuals, which influence counter-productive work behaviors. This research study aims to examine the effects of eliminating issues that cause negative emotions such as constraint, work over-load, and not being involved in decision making, on the organization's employees as internal customers, and society and environment as external customers. The research was conducted in a public hospital with 2500 employees. Data wer collected through a survey instrument. For the analysis of the data, SPSS 20,0 was used to perform frequency test, Mann-Whitney U test, Kruskal-Wallis H test, and Spearman correlation test. The results showed relationships between conflicts and constraint between individuals, and counter-productive work behaviors.

KEYWORDS: Conflict, Interdependence, Disagreement, Interference, Negative Emotions, Constraint, Counter-Productive Work Behaviors

The Problem of Taxation of Electronic Commerce in Turkish Tax System

Ceyda Kükürer, Afyon Kocatepe University, kukrerrceyda@gmail.com

ABSTRACT

Electronic commerce (e-commerce), took part in our lives with technological advancements. On the other hand, the Turkish tax system is based on the physical assets of taxpayers of other countries known to the taxpayers and where the transaction is made. Therefore, due to a number of features coming from the nature of e-commerce, some problems arise when e-commerce, which forms a new tax base, is taxed with existing tax laws. According to the report of the global competitiveness, which shows the countries' latest technological suitability, between 2016-2017, Turkey is in 67th place with 4.2 points in 2016. This shows that Turkey has yet to do business in the e-commerce process. For the solution of this problem, the key question that needs to be answered is whether the digital activities could possibly be taxable under current legal system. The aim of this study is to examine the problem regarding taxation of e-commerce under the Turkish tax system.

KEYWORDS: E-Commerce, Taxation, Digital Economy.

Introduction

As the internet has become an important part of our lives, it has also been used for business transactions. With the globalization phenomenon affecting everybody in society, it has come to the point of restructuring the financial administrations of the countries parallel to the developments in information and technology. In this framework, countries have gone through e-government.

States have to get rid of traditional structures and adopt electronic understanding into their institutions. Within the context of e-government project in Turkey, Electronic Billing Registration System started to be implemented with a limited number of enterprises. It was then included in the system, requiring the use of e-bills for businesses with certain criteria. Businesses that use the e-billing application have started to use the next level of e-book application.

While there have been various opinions on the taxation of e-commerce, a consensus on these ideas has not yet been reached because each view has its own advantages and disadvantages. However, the fact that a common tax system has not been established for the taxation of e-commerce has led to the fact that the people and businesses that are engaged in traditional commercial activities are damaged due to unfair competition, and that some persons and businesses that perform e-commerce activities are tax evasion or tax evasion.

The main aim of this study is to be an increasingly important place in today's commercial life detailed analysis of the concept of e-commerce being acquired, investigation of the studies made within the scope of taxation, taxation solutions presented to the problems and problems experienced in the analysis of proposals and to evaluate e-commerce practices and e-commerce taxation in Turkey.

Electronic tax applications

Electronic tax management; tax declarations are filled in electronic form by taxpayers to taxpayers and delivered to the tax office. Taxes can be paid without going to the tax office with computers connected to the internet and online communication tools. In e-government practice e-taxation is used in most developed and developing countries. E-taxation is an e-government application that enables the pedagogy and collection of the tax.

Electronic tax applications applied with technological development are mentioned below.

Electronic Tax Declaration Program

Electronic declaration, filling of tax statements in digital form and to be delivered. Systems relating to electronic filing of tax returns, in terms of the state, reduces the labor costs associated with entering tax data by hand; data destroys human faults in the entrances and stores; your tax evangelists reduce the time spent in filling in preparation; incorrect registration and incorrect ensures a reliable tax return that is free from information (GIB, 2016).

On October 1, 2004, in Turkey, the internet address of the Internet Tax Office, which was initiated on an optional basis and which became mandatory on 03 March 2005 e-declaration, except for inheritance and transfer tax, all of the obligatory tax declaration applied in taxation. While the electronic declaration rate was 0.5% in 2004, this ratio has reached 99% by the end of 2016 (Kocamış, 2017).

Electronic Lien Project

The implementation of the electronic lien (e-lien) put into practice in 2009 was developed by the Presidency of Revenue Administration. According to the 79th article of AATUHK No. 6183, taxpayers are notified of the foreclosure of tax offices, T.C. The Ministry of Finance is notified in the electronic environment of the e-lien which is participated in the application of e-lien on behalf of the creditor tax offices by the Ministry of Finance and all these kinds of receivables and rights are transferred to the tax office accounts (GIB, 2016).

The tax office consists of three main sections: the Central Registry Agency and the bank. Application software for tax office and center was prepared and test works were completed. With the Law no. 5904, legal amendments were made to allow for the seizure of real estate, ships and vehicles in the electronic environment and infrastructure works started. In addition, it will be ensured that the vehicles registered to Traffic Branches and Bureaus are registered in the electronic environment (Kocabeyoğlu, 2010).

Elektronik Notification

Since 01.04.2016, some taxpayers have been taken under the scope of e-notification application and due to the obligations of these taxpayers to receive e-notifications, it became necessary to use electronic address that is convenient for the notification. It is also understood that the taxpayers who are to be e-notified are those who are involved in this application and are responsible for fulfilling the necessary obligations, irrespective of their wishes, but also are taxpayers who are allowed to apply this application depending on their wishes. However, in both cases, those who are to be e-notified are obliged to receive an e-notification address

and use electronic notification system. In addition to this, some taxpayer groups are not informed in electronic media provided that they do not obtain commercial, agricultural and professional profits and do not demand to be notified of them electronically.

Taxpayers of electronic communications have the obligation to notify and obtain an e-notification address. When legal arrangements are examined, it is understood that there are different requirements according to taxpayer groups.

Taxpayers who enter the new taxpayer after 01.04.2016 must file an electronic notification request within 15 days following the date of commencement of work. Taxpayers are examining these applications and obtaining internet tax office user code, password and password and e-notification address given to those who have the necessary conditions (VUK 456 numbered General Communiqué).

The income taxpayers who have established a new liability after 01.04.2016 may fulfill their reporting obligations by themselves during the taxpayers' establishment or through the persons authorized by the power of attorney given in the notary public with special authorization to carry out transactions related to the electronic notification system. The notification of E-Notification must be given to the tax authorities (VUK 456, General Communiqué).

E-Bookkeeping

The first regulations related to e-Book were prepared by Ministry of Finance and Ministry of Customs and Commerce and published in December 2011 with e-Book General Communiqué. With the General Communiqué of Code No. 421 Tax Procedure Law (VUK), some sectors and taxpayers have been obliged to go to e-book application as well as e-bills. Taxpayers under the obligation to bookkeepers must complete the e-book application process by December 2014 at the latest and they have to go through e-book application starting from 1 January 2015.

E-Invoice Application

The E-Invoice is a system that allows the transmission of information between the seller and the buyer via a central platform (Revenue Administration), where the data format and standard are set by the Revenue Administration. Europe-wide e-billing, multiple standards and a very wide format (Doğan, 2013).

In respect of the authorization granted to the Ministry of Finance by the provision in the paragraph 2 of Article 242 of the Tax Code, the e-invoice created with the arrangements regarding the regulation of the customer, the issuance of the customer, the invitation of the customer, the issuance of the invoice as an electronic document, the transmission of the customer in the electronic environment and the preservation and submission in the electronic environment is not a new document type and is the same as the paper invoice have legal qualifications.

Problem of Taxation of Electronic Commerce in Turkish Tax System

The Turkish tax system is based on the physical assets of taxpayers of other countries known to the taxpayers and where the transaction is made. Therefore, due to a number of features

coming from the nature of e-commerce, some problems arise when e-commerce, which forms a new tax base, is taxed with existing tax laws.

In Turkish tax law, when e-commerce is taxed with current tax laws, most of the problems that arise are stemming from the commercial form of digital e-commerce, such as digital product sales, virtual companies. The "comparison law", which is also valid in the tax law as it is in the penal law and the "legal principle of taxation", which takes the grounds from Article 73 of the Constitution, makes it difficult to tax the above-mentioned free e-commerce with the existing tax laws.

Apart from a detailed examination of the problems that arise in Turkish tax legislation on taxation of e-commerce, it is worth mentioning a problem that affects all tax legislation. E-commerce has brought a new terminology to concepts such as "virtual" and "electronic". The evaluation of these concepts within this terminology will affect tax laws based on traditional trade terminology. Just as other countries are subject to tax laws, Turkish tax legislation does not in any way predict these new terminologies and concepts that emerged from e-commerce. For this reason, the absence of e-commerce terminology in tax laws can be regarded as the greatest deficiency (TOBB, 2002). The problems of taxation of existing Turkish tax legislation and e-commerce can be examined in more detail (Coşkun, 2003).

Problems in Tax Procedure Law

Article 7 of the Tax Procedural Code, dated 23.7.2010 and numbered 6009 Article 107 / A numbered with the heading "Notification in electronic media" a new one has been added to the notification procedures stipulated in the Law. Notification shall be made in accordance with the provisions of the VUK in the first paragraph of the said regulation notwithstanding the procedures listed in Article 93 of the Law, may be communicated electronically by means of an address available for notification; In the second paragraph, it is stated that the Ministry of Finance is authorized to establish all kinds of technical infrastructure related to the notification to be made in electronic environment, to use the established ones, to make the necessity of using electronic address convenient to the notification and to be notified in electronic environment and to determine other procedures and principles related to notification in electronic environment it is connected.

According to article 107 / A of the VUK, Article 5 of Law No. 6637 dated 7.4.2015 it is foreseen that the notification made in the electronic environment by adding a paragraph will be made at the end of the fifth day following the date of reaching the electronic address of the correspondent. The Ministry of Finance has determined the procedures and principles related to the notification in electronic environment with the General Communiqué No: 456 of VUK and that electronic notification will be started as of 01.01.2016 and that those notified before this date may be notified in electronic environment as of 01.10.2015 but with the General Communiqué No 467 of the VUK General Communiqué and the taxpayers of the corporations changed the period required to make electronic notification requests to 01.04.2016 and re-determined the date to start the electronic notification application in parallel with this change. According those regulations, the problem is occur for determining the parties in relation to taxand durations problem in electronic environment; the problem of determining the taxable

event in digital product sales; problem of notifying tax; assignments of taxpayers and electronic document-registration scheme.

Problem in Personal Income Tax and Corporation Tax

At the beginning of taxation problems, the classical definitions in tax law are inadequate in terms of comprehending electronic commerce as income or corporation tax. It lies at the basis of the fact that the concept of "workplace" or "permanent representative", which constitutes the basis for the formation of taxation authority in terms of commercial gains, has not been established in international law, especially in terms of electronic commerce (Avcı, 2017). The other problem in income tax is taxpayer. In terms of income tax, the resident who is subject to the residence criteria of real persons loses the importance of full liability on the condition of being permanently lengthened six months in a calendar year. According to the generally accepted view, internet service providers will not be considered as permanent representatives. There are two reasons for this (Avcı, 2017). First, internet service providers do not have contractual authority on behalf of the enterprise in the current operation. Second, the website on which the business activity is conducted will not be considered a natural person.

The double taxation problem will also arise in terms of corporations tax. In some cases it is difficult to determine where the people are located. In the corporation tax, it is difficult to apply the centrally located workplace center criterion where the works which are valid for the determination of full tax liability are actually managed. Because management and production centers can be shown in different countries (Erdem, 2017).

Another problem is the difficulty in determining the tax base. To be subject to income tax, the tax base must be found. For this, gross income and expenditure must be determined.

However, it is not easy to determine the gross earnings, expenses, and therefore the tax base for commercial and professional activities in the electronic environment.

In summarize the problem of determining the liability claim; the problem of determining where the income is obtained; the problem of determining the quality of income obtained and the tax base problem are the common problems on personal income tax and corporation tax.

Problem in Value Added Tax

Value Added Tax (VAT); commercial, industrial, agricultural and professional quality of goods delivered and service performed over the indirect tax. In the current situation, VAT is quite effective in e-commerce compared to earnings tax. The problems arising from VAT are mostly due to cross-border activities (Erdem, 2017).

All the process coverage of VAT from production to consumption provides self-control (Giray, 2002). However, since there are no intermediaries in e-commerce, determining the taxable transaction is particularly difficult in digital products (Avcı, 2017).

Many elements in the e-taxation bring different work and investments to the agenda. For example, the advertisement of a product given by a customer in Turkey may be dependent on the important raw, infrastructure and technological investment elements in another country where the company providing advertising service to reach the correct and related person in Turkey again. At this point, it does not carry the full value added of the customer's local

product to the source country. For this reason, the main issue is how to distribute the created value added between the resident country and the source country.

In this case, it is very difficult to determine how much of the income generated from Turkey is created in Turkey as added value and which will be taxed in Turkey by being attributed to the work that is deemed to have occurred in Turkey (Erdem, 2017).

Conclusion

In e-commerce, sales can be made through a server that will be established anywhere in the world without opening a business in the country or having a permanent representative. This will lead to some problems in the scope of existing taxation principles. At the very least, these troubles should be tried to be minimized as much as possible.

The application of e-taxation facilitates the tax collection functions, while facilitating the fulfillment of legal obligations of taxpayers, by evaluating the information obtained from information obtained from other institutions. For this reason, it is necessary to make necessary legal and technical regulations within the public order to balance and reduce the risks that the blessings of technology have brought against the positive effects in terms of society and the individual.

One of the most important dimensions of these regulations is the steps that will ensure the harmonization of the tax system with the new world order. we have not yet established a worldwide taxation system for e-Commerce taxation. For this reason, it would not be right to say that Turkey is late in taxing e-commerce, but it is reasonable to start serious work as soon as possible. In this regard, it can be said that Turkey has the advantage of evaluating the results of the proposed proposals and applications. At this stage, Turkey will have to make the necessary technical and legal infrastructure before it is taxed. Although the enactment of "electronic signature" is considered a major development, there are important steps to be taken.

REFERENCES

- Avcı O. (2017), "E-Commerce Taxation Problem", Pamukkale University Journal Of Social Science Institute N:27.
- Coşkun N. (2003), "Evaluation Of International Developments İn Taxation Of Electronic Commerce İn Terms Of Turkey", H.Ü. Sosyal Bil. Ens. Doktora Tezi.
- Dogan U.,(2013) " E-Bookkeeping", Seçkin Yayıncılık, Tax & Finance, 2nd Edition.
- Erdem T. (2017), "New World Order, E-Commerce And Taxation", Financial Analysis, Issue:143.
- GİB (2016), Revenue Department Presidency Annual Report, [Http://Www.Gib.Gov.Tr](http://www.gib.gov.tr).
- Giray, F. (2002). "Electronic Commerce İn Terms Of Expenditure Taxes", Journal Of Tax World, 254/10, [Https://Vergidunyasi.Com.Tr/Dergiler.Php?id=3048](https://vergidunyasi.com.tr/Dergiler.php?id=3048).
- Kocabeyoğlu A. (2010), "E-Lien And Encountering Issues", Journal Of Tax Approach, Issue:18, N:209.
- Kocamiş T. And Kekeç M. (2017), "Development Of Electronic Tax Applications İn Turkey: Electronic Denetim Transition Process İn Tax Auditing", Journal Of Tax Issues, No:348
- TOBB (2002), Turkish Tax System Problems And Solution Suggestions, Doğuşum Matbaacılık Ltd.Şti., Ankara General Communiqué Numbered. 456 (27.08.2015). Ankara: Official Gazette (No.29458)
- T. C. The Laws (06.01.1961). 193 Income Tax Law. Ankara: Official Gazette (No. 10700).
- T. C. The Law (10.01.1961). Tax Procedural Code Numbered 213. Ankara: Official Gazette (10703-10705).
- T. C. The Law (22.06.2002). Law No. 4761. Ankara: Official Gazette (No. 24793).
- T. C. The Law (21.06.2006). Law No. 5520 On Corporate Tax. Ankara: Official Gazette (Number 26205).

Investigating the Potential of Job Motivation in Organizational Enabling /Inhibitor Structures in Occurrence of Organizational Indifference

Seyed Abdul Karim Ghazifar, Research Institute of Shakhespajouh,
sghazifarabdolkarim@yahoo.com

Jafar Turkzadeh, Shiraz University, Shiraz University, djt.2891@gmail.com

Assoc.Prof. Sayyid Akbar Nilipour Tabatabaee, Research Institute of Shakhespajouh,
amouzesh@bshakhespajouh.ac.ir

ABSTRACT

Job motivation potential is one of the factors that plays an important role in shaping the behavior and performance of personnel, in individual and social life and can also affect organizational indifference. Indeed, job motivation potential is a combination of the level of skill variety, identity, significance, independence, and level of feedback in the job, which is meant that if the job has a greater potential, it has capability to motivate its employees and result more effort and higher satisfaction with the job. In this regard, we decided to examine the potential of job motivation in a variety of structures of empowering and inhibiting in the occurrence of organizational indifference phenomenon. Research method in this study is descriptive - survey method based on tools of interviews, observations and library studies. The statistical population of the study consisted of all faculty members (334 people) and staff (452 people) of Islamic Azad universities of Kohgiluyeh and Boyer-Ahmad provinces in 2014. For statistical analysis, Spss and Amos software, average and analysis of variance of data, multivariate regression, t-test, correlation coefficient, structural equations, and Friedman test was used. Findings of the research show that the motivational potential of any organization can create a joyful and happy atmosphere, reduce the level of absence, increase satisfaction, respect the rules and regulations of the work environment, and cause individuals to pursue the goals and strategies of the organization.

KEYWORDS: Organizational Structure, Indifference, Job Motivation, Enabling

Inhibitor Structure

Various reasons can prevent the productivity of an organization's workforce, one of the most important of which is the staff's indifference to the organization. Not paying attention will not only create competitive advantages for the organization, but also increase organizational costs. In addition, the individual is not motivated to realize the goals of the organization (Liner, 2009). The soul takes on the motivation of work and effort from the employee's behavior, and on the other hand, the organization is indifferent in the pursuit of indifferent employees (Kiev, 2003). Therefore, the study of the phenomenon of indifference in organizations and its decreasing factors is one of the most important issues that should be considered by managers in various organizations, including universities, as the most important institution of science production and development of the country. One of the most important factors that can affect such a space is the potential for job motivation. Since employees' motivation affects their productivity, the ability to identify factors influencing motivation

stimulates the sense of creativity and innovation in the staff, and people with a high motivation often perform better than other people. Hence, by identifying the various dimensions of motivational potential, their impact on organizational impersonality phenomena can be examined and finally, by presenting guidelines and research suggestions, directors of sample research universities can help by trying to create dimensions. Different motivational potential helps to reduce the indifference among their employees and eventually reduce organizational costs in different dimensions. In general, it can be said that identifying the motivation potential of faculty members and employees can be considered as one of the most important mechanisms for creating indifference or diminishing it. According to the results obtained to the university directors in the direction Developing different dimensions of motivation potential. Job motivation potential through creating a sense of belonging and responsibility towards the organization can facilitate the effectiveness of employee activities. Thus, recognizing the various ways in which the creation of motivation potential can be designed as an organizational intervention designed to rebuild the profession (and in academic environments, administrative domains) With the aim of exacerbating, motivating and creating more satisfaction in individuals (Mueller and Fitzgerald, 1985). Faculty members as a part of the input of the education system and one of the key elements of the university structure play an important role in improving and improving the performance of the educational system. Therefore, determining the factors that increase the effectiveness of the faculty members' staff and its staff Becomes very important (Ranjbar and Vahid Shahi, 2007). Accordingly, in this research, we have tried to investigate the potential of job motivation in a variety of capable and deterrent organizational structures in the emergence of organizational indifference phenomenon of faculty members and employees of the Islamic Azad universities of Kohgiluyeh and Boyerahmad, because this recognition can be for university Creates a competitive advantage and, on the other hand, can provide very useful knowledge and information to meet the needs and anticipate social change. Therefore, it is imperative that academic managers and administrators obtain information about the type of organizational structure, the motivational potential and the organizational depersonalization. Based on this, we tried to examine the potential of job motivation in a variety of organizational structures capable of inhibiting organizational indifference.

Theoretical Foundations of Research:

-Organizational Structure

Hoy and Mischel (2008), summarizing the views of the scholars before themselves, introduce two types of empowerment structures and deterrent structures, including four essential elements, formalism, focus, process, and context for organizational structure. In the structure of the empowerer, the responsibilities of the organization are clearly outlined and the necessary guidance is provided on how to solve organizational problems to the members of the organization, and thus their stress in the workplace is reduced. Also, members of the organization always feel effective by virtue of their abilities and capabilities (Hui and Maslik, 2008). An organizational structure with a rigid hierarchy and a system of punitive rules and regulations is focused on the responsiveness of the members of the organization (Tylos, 2009) and leads to strengthening the power of managers to exercise control over employees (Hui

and Maslik, 2008). Hence, the deterrent structure through these characteristics can weaken employee incentives and expand indifference in different ways among them. Empowering organizational structure can, through its functional capability, make it possible to regulate the organizational framework, increase the commitment and productivity of the employees, and create and motivate them among them. Therefore, it can be expected that by motivating the staff and faculty members of the university and the growth of their job motivation potential, they will also lead to their career success. Organizational depersonalization is a slow process that appears gradually in individuals (Individual and Islamic Knowledge, 2011) and leads to an organization and employees not having the incentive to pursue organizational goals. There may be several reasons, signs and symptoms in the organization that indicate the employee's indifference to the organization. In general, it can be said that knowing the factors affecting the organizational structure from which coordinates all the activities and goals of the organization and is considered as one of the essential and necessary conditions for successful adaptation to the changes (Farzaneh , Sohrabi and Rayesi Vanani, 2011) are among the necessities that should be of interest to managers, because such a cognition can have a huge impact on employee productivity and the prevention of organizational depersonalization.

-Organizational Indifference

In leadership, indifference is defined as a lack of interest, concern, or sympathy towards others and indifference in an organization often starts at the senior level and trickles down to those selling the product or providing the service. It manifests itself through our intent and actions and often becomes the cultural norm of an organization. Moreover, a management that focuses on problem solving rather than leadership leads to increased bureaucracy, a competitive middle management and indifference among senior management(Ehrheart) 2017,. Organizational indifference occurs when employees no longer care about the company's success. They're simply working for a paycheck, doing only what it takes to not get fired. They're not looking for opportunities that will help the organization thrive. Unfortunately, organizational indifference exists in companies of all sizes and in all industries. It hits the bottom line. No one is immune. Moving employees away from such indifference becomes a top priority. Corporate learning programs have an exciting opportunity to bring the strategic vision to life(<http://www.clomedia.com>2003). Organizational indifference represents the state of occurrence or non-occurrence of peripheral phenomena, and specifically the realization or non-fulfillment of organizational goals, for a member or group of members (Behdad, 1381). In this regard, Saduk and Kaplan also point out that organizational indifference is a condition lacking in feeling and emotion, a lack of interest, and an emotional involvement with the environment. (Nasr Esfahani et al., 2013). The rate of organizational indifference is a matter of viewpoint, of perspective. It varies widely based on the position one holds in the company.

- Indications for organizational indifference

Baird (2008) examines the symptoms of organizational indifference in two classes of behavioral and functional symptoms: Behavioral Symptoms: Behavioral symptoms are signs that manifest themselves in the overall behavior of the individual. Non respect for

organizational rules, non-committing failures, wasting resources and organizational capabilities, and feeling of non-existence. The sense of belonging to the organization is one of the most important signs of behavioral organizational indifference. The indifferent person does not pay attention to the success and failure of the organization. Feeling deserted easily can be seen in an indifferent individual (Nasr Esfahani et al., 2013). In fact, the person who becomes indifferent will ignore the implementation of the rules in the organization. This can include all of the rules in the organization, such as not having to worry about entry and exit hours or controversial laws. The indifferent person easily falls off when the organization faces a failure or loss, and does not express any inconvenience (Jahanshahi, 2010).

Functional Signs: This is a sign that manifests itself in the performance of the individual and the performance of the duties as well as his behavior towards the customers. An indifferent person does not make the necessary effort to perform organizational tasks. Such a person not only does not pay attention to his organizational goals and missions, but also does not have the interest to coordinate with the organization. The indifferent person has no interest in doing his job better and creativity and innovation in his work (Nasr Esfahani et al, 2013 and Jahanshahi, 2010).

-The reasons and factors of organizational indifference Today, in all organizations, manpower is considered as the capital of an organization. For this reason, sensitivities have increased in terms of employee productivity. Unfortunately, several reasons can prevent the productivity of an organization's employees, one of the most important of which is the indifference of employees to the organization. In a comprehensive section presented by the Jahanshahi (2010) for reasons of organizational indifference, the reasons and factors Organizational indifference was classified into three groups, including managerial, structural and motivational factors. Here is a brief explanation of each of these factors:

Management factors : these factors directly relate to the function and type of manager's look and feel. These factors can be considered as the most important causes of inferiority.

Structural :Structural factors are factors that shape the structure of an organization or, rather, create a weakness in their organization's structure. The lack of monitoring of staff performance, the failure of employees to inform their performance results, the lack of incentive systems in the organization, the lack of authority and freedom to act, and the existence of a decision pyramid are among the factors that create their organizational structure. (Hui and Mischel, 2013).

4-7-3- Motivation
Motivational factors: the factors that lead to a kind of impulsiveness in the individual and, as a result, indifference. Not having the opportunity to change a job and freely choosing a job in accordance with one's own person's morale and expertise will cause the person to perform duties in his current job with indifference.

Restrictive structure :Tayos (2009) argues that an inhibitory organizational structure with a rigid hierarchy and a system of punitive rules and regulations is focused on the responsiveness of the members of the organization. In addition, according to Hui and Maskele (2008)

-Job Motivation

People want: Control of their work inspires motivation: including such components as the ability to have an impact on decisions; setting clear and measurable goals; clear responsibility for a complete, or at least defined, task; job enrichment; tasks performed in the work itself; and recognition for achievement. To create a work environment in which an employee is motivated about work involves both intrinsically satisfying and extrinsically encouraging factors. Employee motivation is the combination of fulfilling the employee's needs and expectations from work and the workplace factors that enable employee motivation - or not. Motivation is an employee's intrinsic enthusiasm about and drive to accomplish activities related to work. Motivation is that internal drive that causes an individual to decide to take action. An individual's motivation is influenced by biological, intellectual, social and emotional factors. As such, motivation is a complex, not easily defined, an intrinsic driving force that can also be influenced by external factors. Every person is motivated. Every employee has activities, events, people, and goals in his or her life that he or she finds motivating. So, motivation about some aspect of life exists in each person's consciousness and actions.

- Motivation at Work

The trick for employers is to figure out how to inspire employee motivation at work. To create a work environment in which an employee is motivated about work involves both intrinsically satisfying and extrinsically encouraging factors. Employee motivation is the combination of fulfilling the employee's needs and expectations from work and the workplace factors that enable employee motivation or not. These variables make motivating employees challenging. Employers understand that they need to provide a work environment that creates motivation in people. But, many employers fail to understand the significance of motivation in accomplishing their mission and vision. Even when they understand the importance of motivation, they lack the skill and knowledge to provide a work environment that fosters employee motivation. Too often, organizations fail to pay attention to the employee relations, communication, recognition, and involvement issues that are most important to people (Heathfield, 2017)

These are some of the factors that are present in a work environment that many employees find motivating. Following, I'll cover two of the ideas in depth: minimize rules and policies and employee involvement:

- Management and leadership actions that empower employees,
- Transparent and regular communication about factors important to employees,
- Treating employees with respect,
- Involving employees in decisions about their work and job.
- Minimizing the number of rules and policies in an environment that demonstrate trust for employees and treats employees like adults.
- Providing regular employee recognition,
- Feedback and coaching from managers and leaders,
- Above industry average benefits and compensation,
- Providing employee perks and company activities, and

- Positively managing employees within a success framework of goals, measurements, and clear expectations.

-Enabling/ disabling organizational structures

There has been much discussion recently about the “learning organization” as an organization that attains success through the ability to learn faster than its competitors (Senge 1990). What is missing from this discussion is a conceptual framework for thinking about how people learn and perform in an organization and a practical mechanism for the rapid capture and dissemination of organizational learning. Management approaches are still inherited from 19th Century models. Companies resemble rigid machines in which parts and problems are fragmented, put in boxes and separated by various levels and silos. Imagine an elephant touched by blind people. They would never get the big picture and understand what the "whole" elephant is. The complex and turbulent world we now live in requires immediate answers from companies as well as customization of products and services. It also requires Creativity and Innovation. The majority of work occurring in human service organizations (HSOs) today, is ameliorative in nature, leaving the original sources of problems in our communities or society unchanged. The current tendency is to unreflectively reproduce these ameliorative practices that at best are superficially addressing a problem, and at worst are perpetuating the issues our communities face. Structures and ways of operating can be "enabling" or "disabling". They can either serve or dis-serve the goals and success of any organization. Enabling structure is a resilient, proactive, reactive, intelligent, innovating and learning organisation. A place where people enjoy working together, cross-silos, cross-cultures, cross-disciplines and cross-levels (Baudoin 2017). Hoye and Mischel (2008) state that an empowering organizational structure is the type of organizational structure that emphasizes flexible rules and processes, the context for promotion, the level of trust, motivation, commitment, participation, and loyalty among individuals (Terschade and Dear, 1393; Taraksadeh & Momeni, 1392; Dear, 1390). According to Hoye and Mischel (2008), the capable structure is a structure with flexible procedures, a low-level, low-level responsibility that elevated trustworthiness, participation, and authority among individuals and members of the organization, and in the performance of their duties Self-empowered and provides the potential and motivation necessary for individuals to enhance the personality and identity of the organization and optimize their behavior and performance as well as interaction with the environment (Turkzadeh and Momeni, 2013).

Restrictive structure Tayos (2009) argues that an inhibitory organizational structure with a rigid hierarchy and a system of punitive rules and regulations is focused on the responsiveness of the members of the organization. In addition, according to Hui and Maskele (2008), the institutional structure of the hierarchical basis of deterrence is the obligatory compliance of employees; hence, their behavior is closely and accurately managed and controlled (Turkzadeh and Respected, 2014; Certain Et al., 2011). Hoy and Mischel (2013) also argue that a deterrent structure is a structural, suppressive, uncompromising, supportive, high-focus, which, along with the expansion of distrust and the spread of doubt, reduces the ability and lack of authority and authority The employees and the organization's exhaustion are interacting with the environment and will have a negative and inhibitive effect on the enhancement of the personality and identity of the organization and optimize its behavior and

performance (Turkzadeh and Momeni, 2013). In the deterrent structure, roles and procedures are compulsory and largely The problems with pressure and modulation are seen.

Research Methodology

The purpose of this study was to investigate the role of the customary norms of Yasuj city in the amount of delinquency, based on the purpose of the applied type and based on the data collection method, descriptive-analytical and descriptive-survey method has been used, using both field and library methods.

-Statistical population and sampling method

The statistical population of the study consisted of all faculty members (334 people) and staff (452 people) of the Islamic Azad universities of Kohgiluyeh and Boyerahmad Province in the 2014 academic year. Also, the sample was selected using Cochran's formula of 200 faculty members and 200 employees.

scales

The following scales have been used to collect the information and measure the variables of the research.

1. Scale of Organizational Structure Type (Turkzadeh and Hon., 2011). In order to evaluate the type of organizational structure (empowering and deterrent), the scale of the organizational structure type (Turkzadeh and Honorable, 2011) will be used. This scale has 35 items and involves two dimensions of empowering and deterrent and four sub-scales (formalization, focus, process, and field) with Likert's five-choice spectrum. Replies are scored from five (totally agree) to one (totally disagreeing).

2. Job motivation potential: In this study, to measure the job motivation potential of faculty members and staff, Wagner's (2008) Motivation Potential Assessment Scale, developed by Turkzadeh et al. (2012) and Turkzadeh and Zainali (2011), has been redefined. And its validity and reliability are confirmed. This scale consists of 15 items which I totally disagree with in the 5-degree Likert scale of the spectrum.

Procedure

In order to carry out the present research, after adjusting the scales, determining their validity and reliability, and determining the sample size, the necessary steps were taken to obtain the license from the authorities of the universities of Kohgiluyeh and Boyer Ahmad, and then the data were collected using five scale. Has been.

Analysis tools and types of models:

Spss and Amos software were used for answering the research questions. Also, data analysis using descriptive statistics was used to calculate mean, standard deviation, variance, elongation, skewness, minimum value and maximum amount of each of the research variables, and to answer the main research questions in accordance with the structural equation model (Baron and Kenny, 1986) and multivariate regression statistical methods were used to answer the research sub-queries.

T single sample test

Using the single-sample t-test, the members of the staff and the faculty view the importance of each factor. In this test, the assumption of zero (H0) is based on the insignificance of each variable in the universities, and the alternative assumption (H1) is the test claim. The statistical expression of the research hypotheses is as follows:

$$H_0: \mu \leq 3$$

$$H_1: \mu > 3$$

Since the data are collected with a 5-point Likert spectrum, the mean number 3 is considered to be the midpoint of the Likert spectrum. Also, since this study has been verified at 95% confidence level, therefore, if the average of each dimension is calculated, the test statistic (meaningful value) of the critical value (error level = 5%) is lowered, then the assumption of zero is rejected and therefore the claim of the verification test The utility of the variables used is for studying and performing statistical tests. The results of the calculations performed on a single sample t test are as follows.

Confidence intervals	Average	A significant amount	Degrees of freedom	T statistics	name of the variable	
name of the variable	Confidence intervals	disputes		T statistics	name of the variable	
0/5150	0/4013	0/4581	0/001	399	15/8	Organizational structure
0/5224	0/4055	0/4639	0/001	399	15/6	compatible
0/5308	0/4098	0/4703	0/001	399	15/2	Inhibitory
0/5800	0/4844	0/5322	0/001	399	22	Motivation
0/7121	0/5846	0/6483	0/001	399	20	Diversity
0/3525	0/2109	0/2817	0/001	399	7/8	identity
0/6356	0/5060	0/5708	0/001	399	17/3	importance
0/7708	0/6592	0/7150	0/001	399	25	independence
0/5179	0/3854	0/4517	0/001	399	13/4	Feedback
0/5772	0/6712	0/6242	0/001	399	26	indifference
0/2402	0/3618	0/3010	0/001	399	9/7	director
0/3704	0/5121	0/4413	0/001	399	12	organization
0/7703	0/8972	0/8338	0/001	399	25/8	lord
0/8886	0/1401	0/9644	0/001	399	25	cooperation

Confidence intervals	Average	A significant amount	Degrees of freedom	T statistics	name of the variable	
name of the variable	Confidence intervals	disputes		T statistics	name of the variable	
0/8069	0/9302	0/8686	0/001	399	27/6	Work

Research Questions

1. Is the type of organizational structure of the university predictive of the potential motivation of faculty members?

There is a positive and significant relationship between organizational structure and motivational potential, so that the significance level and the correlation coefficient between organizational structure and motivational potential are ($P = 0.001$ and $r = 0.56$, respectively). Therefore, with increasing organizational structure, motivational potential also increases. 30.9% of the motivation potential changes are related to organizational structure. There is a positive and significant relationship between empowerment organizational structure and motivational potential, so that the significance level and the correlation coefficient between empowerment organizational structure and motivational potential are ($P = 0.001$ and $r = 0.56$, respectively). Therefore, with increasing organizational structure, the empowerment variable also increases the motivational potential. There is a meaningful relationship between empowerment organizational structure and motivational potential. ($0.05 / P <$). So that 31.2% of the motivation potential changes are related to the organizational structure of empowerment. There is a positive and significant relationship between deterrent organizational structure and motivational potential, so that the significance level and the correlation coefficient between the deterrent organizational structure and the motivational potential are ($P = 0.001$ and $r = 0.05$, respectively). Therefore, with increasing organizational structure, the variable of motivational potential also increases. There is a significant relationship between inhibitory organizational structure and motivational potential. ($0.05 / P <$). So that 26% of the motivation potential changes are related to the organizational structure of the deterrent. The explanation is that there is no significant relationship between the simultaneous effect of organizational structure dimensions and motivational potential ($P < 0.05$). And only the effective empowerment variable is described in the table, and the inhibitory variable has been removed and removed simultaneously from the model wheel and has not been effective in motivating potential at the same time.

2. Does the organizational structure of the university predict a meaningful organizational depersonalization?

There is a negative and significant relationship between organizational structure and organizational indifference, so that the significance level and the correlation coefficient between organizational structure and organizational indifference are ($P = 0.001$ and $r = -0.49$,

respectively). Therefore, with increasing organizational structure, organizational indifference variables decrease.

24.5% of the organizational anonymity changes related to organizational structure. There is a negative and significant relationship between organizational empowerment structure and organizational indifference, so that the significance level and correlation coefficient between organizational structure empowerment and organizational indifference are ($P = 0.001$ and $r = -0.47$, respectively). Therefore, with increasing organizational structure, organizational empowerment variability decreases. There is a significant relationship between organizational empowerment and organizational indifference. ($05 / P <$). So that 21.9% of the changes in organizational and organizational changes are related to empowerment. There is a negative and significant relationship between inhibitory organizational structure and organizational indifference, so that the significance level and correlation coefficient between organizational deterrent structure and organizational indifference are ($P = 0.001$ and $r = -0.48$, respectively). Therefore, with increasing organizational structure, the variable of organizational indifference decreases. There is a significant relationship between organizational deterioration and organizational indifference. ($05 / P <$). So that 23.3% of the organizational anonymity changes are related to the organization's deterrent structure. According to the results of stepwise regression analysis, the multivariate correlation coefficient for linear combination of organizational structure dimensions with organizational indifference is significant ($p < .05$). This means that 23.2% of the organizational anxiety changes related to the organizational structure of the deterrent and 23.8% of the organizational anxiety changes related to the simultaneous effect of the organizational structure of the deterrent and the organizational structure of empowerment.

3. Are organizational structure and job motivational potential interacting with each other as a significant predictor of organizational organizational apathy?

According to the results of stepwise regression analysis, the multivariate correlation coefficient for linear combination of simultaneous effect of organizational structure and occupational motivation potential with organizational indifference is significant ($p < 0.05$). This means that 24.3% of the organizational anxiety changes related to the organizational structure and 29.5% of the organizational anxiety changes related to the simultaneous effect of organizational structure and job motivation potential.

4. What is the type of organizational structure dominant in Islamic Azad universities in Kohgiluyeh and Boyerahmad province from the point of view of faculty members?

In all cases where the mean value is higher than 3 and the value of t is greater than 2, the value is less than the error margin of 5%. So, the average organizational structure is 3.4, 3.6 and deterrent is 4.3. Therefore, the observed mean difference is significant.

5. What is the motivational potential of the faculty members of the Islamic Azad universities of Kohgiluyeh and Boyer Ahmad?

In all cases where the mean value is higher than 3 and the value of t is greater than 2, the value is less than the error margin of 5%. The average motivational potential is 3.5, diversity 6.6, identity 3.3, significance 3.6, independence 3.7, and feedback 3.4. Therefore, the observed mean difference is significant.

6. What is the motivational potential of the staff of the Islamic Azad universities of Kohgiluyeh and Boyer Ahmad?

In all cases where the mean value is higher than 3 and the value of t is greater than 2, the value is less than the error margin of 5%. The average motivational potential is 3.5, diversity 6.6, identity 3.3, significance 3.5, independence 6.6, and feedback 3.4. Therefore, the observed mean difference is significant.

7. What is the organizational depersonalization of the faculty members of the universities of Islamic Azad University of Kohgiluyeh and Boyer Ahmad?

In all cases where the average numerical value is less than 3 and the value of t is greater than 2, the significance level is smaller than the test error level of 5%. The mean of anesthesia 2.4, manager 2.7, organization 2.5, master 1/2, co-worker 2 and work 2. Therefore, the observed mean difference is significant.

Conclusion

Today, in the age of information, universities need to measure the factors affecting their indifference. To this end, various frameworks and models have been developed to measure the factors affecting indifference. In addition to the importance of measuring the factors affecting the organizational indifference of work for universities, individual effectiveness is also of particular importance to universities. On the other hand, today we see that expectations from academic centers for more accountability to stakeholders and the requirements for more efficiency and effectiveness in academic operations increasing the focus and the need to measure the factors influencing organizational indifference. Now, with regard to the issues raised, the purpose of this study was to investigate whether the potential motivation of a job causes organizational indifference. To answer this question, the effect of job motivation potential and dimensions They are Which have been effective organizational indifference have been studied . Findings of the research showed that the motivational potential of any organization can create a joyful and happy atmosphere, reduce the level of absence, increase satisfaction, respect the rules and regulations of the work environment, and cause individuals to pursue the goals and strategies of the organization. Impressive.so that, given that the motivational potential causes employees to feel satisfied or disagree with the organization, the tendency or unwillingness to cooperate among faculty members, staff and management . Organizational structure reflects people's attitude towards an organization that is attached to that feeling of affection, and is a set of features and factors that are found by the organization's staff and is an effective force in employee behavior. The motivational potential

of any organization, by creating a joyful and happy atmosphere without problems, will increase the managerial portfolio of group potentials. Naturally, in such a situation, a healthy environment will create the ground for the creativity and inclusiveness among faculty members and staff and will lead to capacity building, and the members of the faculty and staff in such an atmosphere will have maximum participation and will transfer their findings and affiliations by attracting partnerships and coordinating and exchange of experiences. transfer of specialized skills and learning will lead to system rehabilitation and increased work incentives for faculty members and staff, and the spirit of care, interest in work, motivation, job dependence, capacity building, work attraction among board members It will cause science.

REFERENCES

- Abolfazli,, Elham , Yousefi Saidabadi , Vahid Fallah (2016) Attempted to explore and analyse the indifference management trend in the Educational system of Iran .
- Aiken LH, Clarke SP, Sloane DM. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *AMA*: 288:1987-1993
- Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical consideration. *Journal of Personality and Social Psychology* 1986; 51: 1173-1182.
- Effect of organization indifference dimensions on the organizational commitment of gas company employees in Ilam province.
- Hackman, J. R., & Oldham, G. R.(1975). Development of the job diagnostic survey. *Journal of Applied Psychology*,60(2),159-70
- Hoy,W..K. & Miskel,C.G. (2008). *Educational Administration Theory, Research, and Practice*. New York: Mc Graw-Hill
- Jogaratnam, G; & Ching-Yick Tse, E (2006).Entrepreneurial orientation and the structuring of organizations. *International Journal of Contemporary Hospitality Management*,. 18, No. 6, pp. 454-468.
- Johari, J., Mit, D.A.C., & Yahya, K.K. (2009). Construct validation of the job characteristics scale in the Malaysian public service setting. *International Review of Business Research Papers*, 5(3), 58-71.
- Keefe L (2003). How to overcome organizational indifference: *Women in Bus.*, 55 (22): 27-29.
- Leander, P, N. (2009). *Losing the will: Automatic Reactions to the Indifference Perceived in Others*. Unpublished master's thesis, Duke University.
- Moeller, N. L. & Fitzgerald, M. P. (1985). A Meta- Analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology*, 70(2), 280
- Mollaabbasi, H, Rezaeemanesh B & Salehi Sadaghiani, J (2013). A study on relationship between emotional intelligence and organizational indifference through the organizational commitment: A case study of an Iranian firm. *Management Science Letters* 3 ,pp: 1327–1332.
- Nasr Esfahani, A; Ghorbani, O; Amiri, Z; Farokhi, M (2013). Identifying and Ranking the Effective Factor on the Organizational Indifference through Fuzzy analytical Hierarchy Process (FAHP)(Damavand Municipality as a Case Study). *International Journal of Academic Research in Business and Social Sciences*, Vol. 3, No. 6 ISSN: 2222-6990
- Nelson D. L Campbell Quick, J., (2008). *Organization Behavior*, 5th edition, Thomson, south western.
- Tylus, J. D. (2009). *The impact of Enabling School Structures on the Degree of Internal School Change as Measured By the Implementation of Professional Learning Communities*. Dissertation of PHD, Virginia Commonwealth University.

Designing the Model of Moral Growth Management for Khuzestan High School Students Using Virtual Social Networks with Future Studies Approach

Dr. Mohammad Mehdi Rashidi, Assistant Prof., Institute for Int. Energy Studies,
rashidimm@yahoo.com

Malek Mohammad Kavooosi, Research Institute of shakhespajouh, kavooosi.m@yahoo.com

ABSTRACT

The advancement of technology and communication has affected the students' moral development and had a profound impact on students. The purpose of this research is to design an effective management model for the moral development of high school male students in the first and second period of Khuzestan province in using virtual social networks with a futuristic approach. In terms of applied purpose, the analytical nature and the method of collecting data are combined (in the qualitative, delphi technique and in the quantitative, survey method). For analysis of data, SPSS23 software and AMOS software were used. The findings showed that environmental, individual, family, social, human and transcendental ethics with a significant coefficient of $P < 0.05$ was effective in using virtual social networks (with a futuristic approach) and moral development of the students affects quality of virtual social networks.

KEYWORDS: Moral Growth Management, Khuzestan High School Students, Virtual Social Networks, Future Studies Approach.

Introduction

Environmental, individual, family, social, human and transcendental ethics are effective in using virtual social networks and moral development of the students affects quality of virtual social networks. The purpose of this research is to design an effective management model for the moral development of high school male students in the first and second period of Khuzestan province in using virtual social networks with a futuristic approach.

Moral Growth Management of Students

Morality can be developed either negatively or positively, depending on how an individual accomplishes the tasks before him during each stage of moral development across his lifespan. Moral development refers to the ways we distinguish right from wrong as we grow and mature. Very young children generally do not have the same level of moral development as adults.

Think about your behavior as a young child. How did you decide if something was right or wrong, or good or bad? Did you follow what your parents did? Did you copy the behavior of your friends? At one time or another, you probably did both. When were you able to decide for yourself what was right and what was wrong? Do you currently base your decisions on societal or cultural laws? For example, is it wrong to steal because the law says it is wrong? Do you ever feel that the morally correct decision conflicts with the law? These are the types of questions that Lawrence Kohlberg asked while studying moral development in human beings. The Theory of Moral Development is a very interesting subject that stemmed from Jean Piaget's theory of moral reasoning. Developed by psychologist Lawrence Kohlberg, this

theory made us understand that morality starts from the early childhood years and can be affected by several factors. All his ideas started from the research he performed with very young children as his subjects. He found out that children are faced with different moral issues, and their judgments on whether they are to act positively or negatively over each dilemma are heavily influenced by several factors. In each scenario that Kohlberg related to the children, he was not really asking whether or not the person in the situation is morally right or wrong, but he wanted to find out the reasons why these children think that the character is morally right or not. Of course, Moral development theory is associated with three names: Jean Piaget, Lawrence Kohlberg, and Carol Gilligan(Dienhart,2015).

In this research, we classified the moral growth of students in these elements:

Environmental Morality.

Individual Morality.

Family Morality.

Social Morality.

Human Morality.

Transcendental Morality.

Stages of Moral Development

Lawrence Kohlberg, building upon Jean Piaget's cognitive theory of development, developed three levels with six stages to reflect our progression through moral development. These levels and stages describe how our ideas of right and wrong change as we grow. However, Kohlberg did admit that not all people progress through these changes at the same age due to differences in cognitive functioning. In fact, he stated that some people never reach full moral development.

Level 1: Pre-conventional Moral Development

The first level in Kohlberg's theory is the **pre-conventional level of moral development**.

This level of development has two stages and is based on punishments and rewards. In other words, people who are functioning at the pre-conventional level of development make decisions on right and wrong to earn rewards or avoid punishments.

Stage 1: Punishment- Obedience Orientation

Related to Skinner's Operational Conditioning, this stage includes the use of punishment so that the person refrains from doing the action and continues to obey the rules. For example, we follow the law because we do not want to go to jail.

Stage 1 is all about the rules. Moral decisions are based on either being good by following the rules or being bad by breaking them. For example, a child may think, 'I don't want to be spanked so I'm not going to hit my brother!'

Stage 2: Instrumental Relativist Orientation

In this stage, the person is said to judge the morality of an action based on how it satisfies the individual needs of the doer. For instance, a person steals money from another person because

he needs that money to buy food for his hungry children. In Kohlberg's theory, the children tend to say that this action is morally right because of the serious need of the doer. Stage 2 is about self-reward. Moral decisions in this stage are based on getting a reward that is personally meaningful. For example, a child may think, 'I want dessert, so I will eat all of my vegetables.'

Level 2: Conventional Moral Development

The second level, **the conventional level of moral development**, also has two stages, but focuses more on parental rules and societal laws. People at this level of moral development base their decisions on what their parents and/or law enforcement says is right.

Stage 3 is about social conformity. For example, a student may think, 'Students who cheat on tests are bad, so I will not cheat.'

Stage 4 is all about law and order for all. For example, someone may think, 'If I steal, I will break the law and breaking the law is wrong.'

Level 3: Post-conventional Moral Development

The third level is the **post-conventional level of moral development**, which also has two stages. This level of moral development considers humanity and universal ideas of right and wrong above all else. People at this level of moral development base their decisions on ethical principles related to humanity.

Stage 3: Good Boy-Nice Girl Orientation

In this stage, a person judges an action based on the societal roles and social expectations before him. This is also known as the "interpersonal relationships" phase. For example, a child gives away her lunch to a street peasant because she thinks doing so means being nice.

Stage 4: Law and Order Orientation

This stage includes respecting the authorities and following the rules, as well as doing a person's duty. The society is the main consideration of a person at this stage. For instance, a policeman refuses the money offered to him under the table and arrests the offender because he believes this is his duty as an officer of peace and order.

Level 3: Postconventional Morality

The post-conventional morality includes stage 5 and stage 6. This is mainly concerned with the universal principles that relation to the action done.

Stage 5 : Social Contract Orientation

In this stage, the person is look at various opinions and values of different people before coming up with the decision on the morality of the action.

Stage 6 : Universal Ethical Principles Orientation

The final stage of moral reasoning, this orientation is when a person considers universally accepted ethical principles. The judgment may become innate and may even violate the laws and rules as the person becomes attached to his own principles of justice.

Virtual Social Networks

What is a virtual social network?

Social networking services are the most prominent type of virtual community. They are either a website or software platform that focuses on creating and maintaining relationships.

Facebook, Twitter, and Myspace are all virtual communities. With these sites, one often creates a profile or account, and adds friends or follow friends. This allows people to connect and look for support using the social networking service as a gathering place. These websites often allow for people to keep up to date with their friends and acquaintances' activities without making much of an effort. On Facebook, for example, one can upload photos and videos, chat, make friends, reconnect with old ones, and join groups or causes. All of these functions encourage people to form a community, large or small, on the Internet. A **virtual** community is a **social network** of individuals who interact through specific **social media**, potentially crossing geographical and political boundaries in order to pursue mutual interests or goals. Some of the most pervasive **virtual** communities are online communities operating under **social networking** services.

The term virtual community is attributed to the book of the same title published by Howard Rheingold in 1993. The book's discussion ranges from Rheingold's adventures on The WELL, computer-mediated communication and social groups and information science. Technologies cited include Usenet, MUDs (Multi-User Dungeon) and their derivatives MUSHes and MOOs, Internet Relay Chat (IRC), chat rooms and electronic mailing lists. Rheingold also points out the potential benefits for personal psychological well-being, as well as for society at large, of belonging to a virtual community. Virtual communities all encourage interaction, sometimes focusing around a particular interest or just to communicate. Some virtual communities do both. Community members are allowed to interact over a shared passion through various means: message boards, chat rooms, social networking sites, or virtual worlds (Wellborne, 2009).

Future Studies Approach

Futures studies (also called **futurology**) is the study of postulating possible, probable, and preferable futures and the worldviews and myths that underlie them. There is a debate as to whether this discipline is an art or science. In general, it can be considered as a branch of the social sciences and parallel to the field of history. History studies the past; futures studies considers the future. Futures studies (colloquially called "**futures**" by many of the field's practitioners) seeks to understand what is likely to continue and what could plausibly change. Part of the discipline thus seeks a systematic and pattern-based understanding of past and present, and to determine the likelihood of future events and trends.^[1] Unlike the physical sciences where a narrower, more specified system is studied, futures studies concerns a much bigger and more complex world system. The methodology and knowledge are much less

proven as compared to natural science or even social science like sociology, economics, and political science.

Methodology

Research Purposes

Purpose: Designing an effective management model for moral education of high school boys in the first and second period of Khuzestan province in using virtual social networks with a futuristic approach.

Sub- Purposes: Assessing the Impact of Environmental Ethics, Individual Ethics, Family Ethics, Social Ethics, Human Ethics, and Transcendent Ethics of Students in Khuzestan Province in Using Virtual Social Networks.

-Statistical population and sampling method

The statistical population of the study consisted of all high school male students in the first and second period of Khuzestan province in the 2016 academic year. Also, the sample was selected using Cochran's formula .

Analysis tools and types of models:

Spss and Amos software were used for answering the research questions. Also, data analysis using descriptive statistics was used to calculate mean, standard deviation, variance, elongation, skewness, minimum value and maximum amount of each of the research variables, and to answer the main research questions in accordance with the structural equation model (Baron and Kenny, 1986) and multivariate regression statistical methods were used to answer the research sub-queries.

T single sample test

Using the single-sample t-test, the members of the staff and the faculty view the importance of each factor. In this test, the assumption of zero (H0) is based on the insignificance of each variable in the universities, and the alternative assumption (H1) is the test claim. The statistical expression of the research hypotheses is as follows:

$$H_0: \mu \leq 3$$

$$H_1: \mu > 3$$

Since the data are collected with a 5-point Likert spectrum, the mean number 3 is considered to be the midpoint of the Likert spectrum. Also, since this study has been verified at 95% confidence level, therefore, if the average of each dimension is calculated, the test statistic (meaningful value) of the critical value (error level = 5%) is lowered, then the assumption of zero is rejected and therefore the claim of the verification test The utility of the variables used

is for studying and performing statistical tests. The results of the calculations performed on a single sample t test are as follows.

Conclusion

The advancement of technology and communication has affected the students' moral development and had a profound impact on students. In this research, we classified the moral growth of students in these elements:

Environmental Morality.

Individual Morality.

Family Morality.

Social Morality.

Human Morality.

Transcendental Morality.

The purpose of this research is to design an effective management model for the moral development of high school male students in the first and second period of Khuzestan province in using virtual social networks with a futuristic approach.

findings showed that environmental, individual, family, social, human and transcendental ethics with a significant coefficient of $P < 0.05$ was effective in using virtual social networks (with a futuristic approach) and moral development of the students affects quality of virtual social networks.

REFERENCES

- Bhola, R. & Mahakud, G. (2014). A qualitative analysis of social networking usage, *Int J Res Dev Health*; Vol 2(1): 34-44.
- Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (Vol. 1). Hillsdale, NJ: Erlbaum.
- Boyd, D. M., & Ellison, N. B. (2007). «Social network sites: definition, history, and scholarship», *Journal of Computer-Mediated Communication*, 13(1), pp 210-230.
- Bell, Wendell. (2003). *Foundations of Futures Studies: Human Science for a New Era*; New Brunswick, New Jersey, USA: Transaction Publishers.
- Freed PE, McLaughlin DE. (2011). Future thinking: Preparing Nurses to Think for Tomorrow. *Nurs Educ Perspec*, 32(3): 173-8.
- Gonzalez, R., Llopis, J., Gasco, J. (2015). Social networks in cultural industries, [Journal of Business Research, Volume 68, Issue 4](#), Pages 823–828.
- Granovetter, M. (1984). The strength of weak ties: A network theory revisited, *Sociological Theory*, Vol. 10: 201-233.
- Hansen, D.L., Shneiderman, B., & Smith, M. A. (2011). *Analyzing Social Media Networks with NodeXL: Insights From a Connected World*.
- Hansen, D.L., Shneiderman, B., & Smith, M. A. (2011). *Analyzing Social Media Networks with NodeXL: Insights From a Connected World*.
- Hilberman, J. (2009). Young People are Social Networking in Drove, Retrieved in <http://iipdigital.usembassy.gov/st>.
- Kiouis, S. (2002). "Interactivity: A Concept Explication", *New Media and Society*, Vol.3.
- Kurtosi, Z. (2004). "Aspects of Gender in Social Network", *Social Identity, Information and Markets*. Proceeding of Faculty of Economics and Business Administration.

The Change of Effective Fundamental Analysis Variable After Financial Crisis

Janghee Lee, Konkuk University, jlee@kku.ac.kr

ABSTRACT

In this study's analysis pre and post the Financial Crisis, the value correlations of the accounting information and the additional explanation ability of the fundamental variables were found to be very high after the Financial Crisis. The significant fundamental variables varied pre and post the crisis. Inventory (SALINV) was found to be significant before the Financial Crisis but was found insignificant after. On the other hand, Accounts Receivable (Δ SALAR) and Personnel Expenses (Δ ASLR) were not significant before the Financial Crisis but significant after the crisis, and the signs also changed from negative (-) to positive (+). Meanwhile, Gross Profits (Δ GMSAL) showed negative (-) coefficients before the crisis, but showed positive (+) coefficients after.

Also, the results from conducting regression analysis using POST, which is the dummy variable representing the periods pre and post the Financial Crisis, show that Gross Profits (POST* Δ GMSAL), Sales (POST* Δ SALA), Cost of Sales (POST* Δ CGSA), Accounts Receivable (POST* Δ SALAR) and Personnel Expenses (POST* Δ ASLR) showed positive (+) signs, but Equipment Investment (POST* Δ CAPEX) and Assets (POST* Δ ASA) showed negative (-) signs.

KEYWORDS: Financial Crisis, Inventory (SALINV), Accounts Receivable (Δ SALAR)

1. Introduction

The Korean economy has been undergoing many changes since the 1997 Financial Crisis. Such radical changes in the capital market include expansion in foreign stock investments in stocks, full-scale advance of foreign financial institutions into the Korean market, selling off domestic enterprises overseas, and the expansion of foreign ownership rate in domestic enterprises. Owing to such rapid changes after the Financial Crisis, investment methods in the Korean stock market have also changed. As is the case with other countries, investment analysts of securities companies in Korea evaluate the intrinsic value of the enterprises through fundamental analysis using financial statements and the current investment opinions on applicable enterprises and industries. Generally after the crisis, investments in stocks are advised based on the opinions of these securities analysts.

Particularly after the crisis, the country's securities companies made full-scale investments in establishing research centers competitively based on favorable business results following the stock market boom in 1998. Backed by the extensive investments in the business analysis sector, investment analysts have been greatly growing both qualitatively and quantitatively. (Analysts utilizing fundamental analysis are considered the best analysts by media organizations.) Based on such growths, research centers of securities companies have been able to conduct more systematic and logical corporate analyses. Accordingly, the use of

corporate analysis reports has become generalized and the influence of investment analysts continues to expand. The investment analysts of securities companies utilized the fundamental analysis in order to find and analyze the stocks that deviate from intrinsic values as being overestimated or underestimated in the efficient market. The investment strategy that utilizes fundamental analysis suggests to buy underestimated stocks and to sell overestimated stocks. Meanwhile, focusing on profit information, researches have been made on the effect of information that began to support the utility of financial statements information in the study of accounting. Such research works were based on the assumption that the sum of the present value of future cash flows is the corporate value and that the profit information can be used as the replacing value of cash flows. In the actual capital market, however, the ability to explain the fluctuations of stock prices is found to be minimal. This is primarily due to the fact that profit information is only one part of a company's economic value as contained in the financial statements but the stock prices reflect all information factors contained in the statements. In other words, profit data on the financial statements are important information with regard to the evaluation of corporate values but are only a part of various accounting information. Accordingly, in order to evaluate the utility of financial statements, all the pieces of information reflected in the financial statements should be used, and not only the ones on profit.

From the viewpoint of fundamental analysis, this study observed that one can predict future profits by using the collection of information besides the information on stock prices alone on the assumption that stock prices do not sufficiently represent all the necessary information. This thesis therefore attempts to verify how much the Financial Crisis has influenced the effects of financial statements information in the country's capital market by utilizing the variables of fundamental analyses that have been generalized through the Financial Crisis. This thesis consists of the following. Chapter 1 explains research objectives and purposes; Chapter 2 explains the conceptual framework of performing the research and describes the research designs; Chapter 3 proves the analysis and presents the results of analysis; and Chapter 4 discusses the results of the research.

II. Research Design

1. Setting Up Hypotheses

Starting from the Financial Crisis that greatly changed the Korean economy, this research will verify whether there are any differences before and after the financial crisis in the use of the financial statements information that utilizes fundamental analysis variables. The reasons for verifying this are twofold. First, due to the Financial Crisis, the accounting transparency of domestic companies was emphasized, expectations for the local companies' accounting information were raised and the responsibility for inappropriate accounting was reinforced. Second, the domestic financial market environment has rapidly changed due to full-scale foreign investments. And, as investment analysts of securities companies have been engaged in full-fledged activities, fundamental analyses utilizing the financial statements have been

very active. Actually, due to substantial business analysis investments since 1999, the business analysis sector of the domestic securities companies has been experiencing rapid quantitative expansion and qualitative growth. Also, the competitions among the investment analysts of securities companies have intensified due to several special events sponsored by news media such as the selection of the best analyst and other prize awards, which have caused general investors to recognize fundamental analysis. Based on this, additional and more diverse fundamental analysis data have been produced and transmitted through diverse channels to investors. So, Hypothesis 1 was set up since it was expected that there would be differences in the use of financial statements that utilize fundamental analysis variables before and after the Financial Crisis.

Hypothesis 1: There are no differences in the use of financial statements that utilizes fundamental analysis variables before and after the Financial Crisis.

Before the crisis, the local companies focused mainly on sales growth rather than on profitability in business management. Such expansion-oriented management led to over borrowing, which was one of the causes of the Financial Crisis. During the crisis however, the local enterprises lowered their debt ratio and focused on profit-oriented management rather than on sales growth. Investors also evaluated the companies and decided to make investments based on profitability rather than on sales or on the asset size of the companies concerned. Due to this, along with the utility of fundamental analysis variables, the variables representing profitability, Gross Profits (ΔGMSAL), Cost of Sales (ΔCGSA), and Personnel Expenses (ΔASLR) are expected to be more significant during after the crisis. So, in addition to the above hypothesis, Hypothesis 2 was set up since it was expected that there would be differences in value correlations of Gross Profits (ΔGMSAL), Cost of Sales (ΔCGSA) and Personnel Expenses (ΔASLR).

Hypothesis 2: Of the fundamental analysis variables, there are no differences in the value correlations of the fundamental analysis variables representing profitability, Gross Profits (ΔGMSAL), Cost of Sales (ΔCGSA) and Personnel Expenses (ΔASLR) before and after the crisis.

On the other hand, during crisis, the local companies lowered their debt ratios, sold off non-business properties and pushed forward restructuring, which are factors that favored the stock market. Variables representing an enterprise's external growth such as equipment investment (ΔCAPEXA) or assets (ΔASA) are expected to have negative (-) impact on the earning rates after the Financial Crisis. In addition therefore, Hypothesis 3 was set up since it was expected that there would be differences in the value correlations of Equipment Investment (ΔCAPEXA) or Assets (ΔASA) representing the external growth of a company before and after the Financial Crisis.

Hypothesis 3: Of the fundamental analysis variables, there are no differences in the value correlations of the fundamental analysis variables representing an

enterprise's external growth, Equipment Investment (Δ CAPEXA) or Assets (Δ ASA).

2. Selection of Variables

This research attempts to verify the utility of the financial statements by using a total of 16 fundamental analysis variables, which are made up of eight fundamental analysis variables that can be applied to the Korean market, 12 fundamental analysis variables are based on the expertise of American securities analysts presented in the dissertation of Lev and Thiagarajan (1993), and eight fundamental analysis variables that do not overlap with the other eight fundamental analysis variables of American securities analysts.

In general, the distinction between good signal and bad signal is clear in the accounting profit information but unclear in the non-profit accounting information. Investment analysts of securities companies generally interpret accounting information that is based on fundamental analysis. For example, the imbalanced increase in inventory is interpreted as bad signal. Of course, such imbalance can be due to the managers' expected increase in sales. Although such interpretation is not always right, this research makes the necessary judgment regarding the signal of non-profit accounting information in accordance with the criteria that the securities analysts use to distinguish between good signal and bad signal when conducting fundamental analysis. In general, a sharp increase in inventory more than net sales means the company is experiencing sales difficulties. Moreover, such imbalanced increase in inventory will force management to attempt to maintain the level of inventory, which will reduce profit. Besides, an increase in inventory will lower future profit due not only to the opportunity cost of inventory purchase, inventory storage costs, inventory diminution and loss but also to the reserve of overhead costs allotted to inventory. Accordingly, in general, the increase in inventory is regarded as a bad signal and the decrease in inventory is a good signal. In this research, the rate of increase in sales less the rate of increase in inventory is denoted as Δ SALINV.

Accordingly, as mentioned above, the value of the variable resulting from the increase in inventory is expected to be negative (-) or as a bad signal, and the value of the variable resulting from the decrease in inventory is expected to be positive (+) or as a good signal. It is expected to have the same effect on the fluctuation of stock prices.

The rate of increase in inventory is calculated by dividing the change in the inventory amount at the end of the current year (t) compared with the inventory amount at the end of the immediate previous year by the inventory amount at the end of the immediate previous year. This can be expressed as:

$$\Delta\text{SALINV}_t = (\text{Inventory}_t - \text{Inventory}_{t-1}) / \text{Inventory}_{t-1}$$

This equation shall be used to determine the rate of increase in sales and all the other fundamental analysis variables that are discussed below. Table 1 below summarizes the investment analysts of securities companies that are used in this research.

Table 1: Definition of Fundamental Analysis Variables

Fundamental Analysis Variables	Measurement of Variables
1. Inventory	The increase rate of sales – the increase rate of inventory
2. Accounts Receivable	The increase rate of sales – the increase rate of accounts receivable
3. Equipment Investment	The increase rate of equipment investment – the increase rate of equipment investment of the same industry
4. Gross Profits	The increase rate of gross profits – the increase rate of sales
5. Selling and Administrative Expenses	The increase rate of sales – the increase rate of selling/administrative expenses
6. Bad Loan Reserves	The increase rate of bad loan reserves – the increase rate of accounts receivable
7. Effective Corporate Tax Rates	(Before tax net profit per share/stock price of the immediate prior year)
8. Labor and Personnel	The increase rate of sales compared with immediate prior year per employee
9. Sales	The increase rate of sales – the increase rate of sales of the same industry
10. Accounts payable	The increase rate of sales – the increase rate of accounts payable
11. Cash Flow	The increase rate of cash flow compared with the immediate prior year per share
12 Liquidity	The increase rate of current assets – the increase rate of current liabilities
13. Debt	The increase rate of liabilities – the increase rate of current liabilities
14. Cost of Sales	The increase rate of cot of sales of the same industry – the increase rate of cost of sales
15. Personnel Expenses	The increase rate of personnel expenses of the same industry– the increase rate of personnel expenses
16. Assets	The increase rate of assets – the increase rate of assets of the same industry

* Variables 1to 8 are the variables used by Lev and Thiagarajan, and variables, 9 to 16 are used by Korean investment analysts that do not overlap with 1 to 8.

3. The Enterprises Analyzed

Among the enterprises listed on the Korea Stock Exchange from January 1, 1992 to December 31, 2001, the sample enterprises include the companies settling accounts in December and whose stock prices and financial statements data are included in the database of the enterprises information warehouse TS2000 of the Korea Listed Companies Association, excluding the following companies:

- (1) Banks, investment finance companies, securities companies and insurance companies. (Financial industries and similar services industries widely differ from the other industries in business activities, asset structures and accounting policies.)
- (2) Stocks that are classified as controlled. (Their trade was sluggish or even discontinued, incurring problems in data continuity.) This research may have certain biases in the sampling as it included only the relatively sound enterprises.
- (3) Company stocks that were merged from January 1993 to December 2001 (due to the same reason of the problems of data continuity).

The period applicable begins in 1992 in consideration to the fact that in 1993 the country's capital market opened and investment organizations including securities companies began to adopt the fundamental analysis.

4. Descriptive Statistics

As the summary of descriptive statistics of the variables used in this research, Table 2 shows mean, median, and the percentage value of the parts within 1% and 5% at both ends of the distribution of the variables. The distribution of the value of $\Delta EARN$ poses a serious problem in extreme value in that it ranges from the minimum of -38.62 to the maximum of 80.79. So, the extreme value in $\Delta EARN$ was treated through "winsorize" at the values of ± 1 at both ends of the distribution.

Table 2: Descriptive Statistical Measures of the Sample
 2299 Enterprises/Year, 1993-2001

Variables	Mean	Standard Deviation	Minimum	1% Value	Median	99% Value	Maxmum
Rt	0.072	0.704	-0.940	-0.853	-0.031	2.040	14.000
$\Delta EARN$	0.183	0.336	-38.62	-4.280	-0.000	8.713	80.79
$\Delta SALINV$	-0.000	0.373	-2.805	-1.290	-0.026	0.878	1.990
$\Delta SALAR$	-1.703	0.405	-80.20	-46.63	-1.703	70.70	166.35
$\Delta CAPEXA$	-0.626	-10.00	-82.07	-54.76	-10.00	184.251	380.35
$\Delta GMSAL$	0.024	2.237	-87.33	-1.843	0.010	2.308	23.71
$\Delta SALS A$	0.013	0.288	-1.475	-0.642	-0.002	0.902	3.603
$\Delta BDAR$	0.683	3.915	-5.383	-1.277	0.000	13.523	80.55
ΔETR	0.254	3.709	-5.499	-0.249	0.000	2.220	96.53
$\Delta SALPP$	-15.05	26.52	-278.8	-114.95	-10.98	35.70	73.50
$\Delta SALA$	-0.293	19.49	-80.20	-46.743	-1.788	70.426	166.35
$\Delta SALAP$	-0.128	1.308	-25.15	-3.0698	0.000	0.960	19.64
$\Delta CFPS$	-18.33	335.76	-15380	-96.267	-9.841	43.212	393.21
$\Delta ASDB$	-0.005	0.462	-9.36	-1.544	-0.001	0.715	2.81
$\Delta DEBT$	-0.005	0.387	-9.60	-1.232	-0.002	0.6031	0.98
$\Delta ACGS$	1.086	4.32	-2.40	-0.706	-0.004	18.633	19.51
$\Delta ASLR$	0.003	0.265	-2.63	-0.728	-0.003	0.621	1.12

ΔASA	0.000	0.229	-2.64	-0.7994	0.003	0.448	1.12
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Pearson correlation coefficients among the proof model variables that were used when proof analysis was conducted on the sample of the enterprises/accounting year are shown in Table3.

Table 3: Correlation Coefficients of Variable of Proof Models

	Rt	ΔEARN	ΔSALINV	ΔSALAR	ΔCAPEXA	ΔGMSAL	ΔSALSA	ΔBDAR	ΔETR
Rt	1	0.19***	0.11***	0.11***	0	0	-0.02	-0.06***	0.06
		0	0	0	-0.447	-0.445	-0.168	-0.005	-0.004
ΔEARN		1	0.09***	0.04	-0.02	0.03	-0.20***	-0.06***	-0.01
			0	-0.023	-0.188	-0.067	0	-0.002	-0.285
ΔSALINV			1	0.10***	-0.07***	-0.04	-0.13***	-0.03	-0.05
				0	-0.001	-0.034	0	-0.076	-0.018
ΔSALAR				1	-0.03	0	-0.09***	-0.03	-0.04
					-0.089	-0.444	0	-0.082	-0.032
ΔCAPEXA					1	-0.01	0	-0.03	0.03
						-0.262	-0.465	-0.128	-0.106
ΔGMSAL						1	0.03	0	0
							-0.061	-0.483	-0.424
ΔSALSA							1	0.20***	0.01
								0	-0.385
ΔBDAR								1	-0.01
									-0.32
ΔETR									1

When the correlations among the independent variables are high, the core model of this research can cause the problem of Multicollinearity at the time of multiple regression analysis. In this research, however, the problem of Multicollinearity is not considered a serious threat in view of the figures of VIF and condition index in the later multiple regression analysis.

5. Research Methodology

In order to verify the hypotheses, this research examines the utility of the information of fundamental analysis variables before and after the Financial Crisis. The basic regression model used to prove the research hypotheses is as follows:

$$R_{t,i} = a_0 + a_1 \Delta EARN_{t,i} + V_{t,i} \dots \dots \dots (1)$$

$R_{t,i}$ = Stock earning rates from April, Year t to March, Year t+1

$\Delta EARN_{t,i}$ = Change in EPS of i enterprises in the Year t divided by the stock prices of Year t-1

In this research, each fundamental signal is defined such that the more positive value it has by logical inference, the more positive effects they have on the excess earning rates.

Accordingly, the purpose of this research is to verify whether or not b_j , which is coefficient of each S_j , has positive value when the fundamental analysis variables are used as additional independent variables. If b_j has positive value it can be interpreted as having positive influence on the future earning rates.

Each of partial F values are examined in order to determine the adaptability of the model. In the regression model, R_t is the buy-and-hold stock prices earning rates for the period t from April to March of the succeeding year, and $\Delta EARN_t$ is the change in EPS for the period t divided by the stock prices of the previous year, and a and b are coefficients of the regression model. When fundamental analysis variables are not useful at all, the slope coefficient b should be 0, and when fundamental analysis variables are useful, b should be greater than 0 ($b > 0$). So, partial F value is the value used to verify the regression coefficient for the fundamental signal in its entirety, as well as to prove the hypothesis that the regression coefficients of the fundamental signals are all 0. If partial F value is high, then the hypothesis that the regression coefficients are all 0 can be rejected.

In order to verify whether or not there are differences in the utility of non-profit financial statements information before and after the Financial Crisis which greatly impacted the Korean economy, this research repeated the regression analysis three years (1994 to 1996) before the crisis and three years (1999 to 2001) after. This study also verifies whether the regression coefficient B_j of the fundamental analysis variables differ before and after the said crisis.

$$R_{t,i} = a_0 + a_1 \Delta EARN_{t,i} + b_{1t} \Delta SALINV_{t,i} + b_{2t} \Delta SALAR_{t,i} + b_{3t} \Delta CAPEXA_{t,i} + b_{4t} \Delta GMSAL_{t,i} + b_{5t} \Delta SALSAL_{t,i} + b_{6t} \Delta BDAR_{t,i} + b_{7t} \Delta ETR_{t,i} + b_{8t} \Delta SALPP_{t,i} + b_{9t} \Delta SALA_{t,i} + b_{10t} \Delta SALAP_{t,i} + b_{11t} \Delta CFPS_{t,i} + b_{12t} \Delta ASDB_{t,i} + b_{13t} \Delta DEBT_{t,i} + b_{14t} \Delta ACGS_{t,i} + b_{15t} \Delta ASLR_{t,i} + b_{16t} \Delta ASA_{t,i} + V_{t,i} \dots \dots \dots (2)$$

The period before and after the Financial Crisis are divided into two periods, 1994-1996 and 1999-2001, because 1997 was the year of the crisis and 1998, the following year, was excluded. In 1999, the Accounting Institute aimed to enhance the transparency of accounting was established. Furthermore, in order to verify whether there were changes in the fundamental analysis variables which investors consider important in making decisions on investment, the regression analysis is conducted on the Regression Model (3) in which the dummy variable, Post, representing the period before and after the crisis was added into the regression expression.

$$R_{t,i} = a_0 + a_1 \Delta EARN_{t,i} + b_{1t} \Delta SALINV_{t,i} + b_{2t} \Delta SALAR_{t,i} + b_{3t} \Delta CAPEXA_{t,i} + b_{4t} \Delta GMSAL_{t,i} + b_{5t} \Delta SALSAL_{t,i} + b_{6t} \Delta BDAR_{t,i} + b_{7t} \Delta ETR_{t,i} + b_{8t} \Delta SALPP_{t,i} + b_{9t} \Delta SALA_{t,i} + b_{10t} \Delta SALAP_{t,i} + b_{11t} \Delta CFPS_{t,i} + b_{12t} \Delta ASDB_{t,i} + b_{13t} \Delta DEBT_{t,i} + b_{14t} \Delta ACGS_{t,i} + b_{15t} \Delta ASLR_{t,i} + b_{16t} \Delta ASA_{t,i} + c_{1t} POST * \Delta SALINV_{t,i} + c_{2t} POST * \Delta SALAR_{t,i} + c_{3t} POST * \Delta CAPEXA_{t,i} + c_{4t} POST * \Delta GMSAL_{t,i} + c_{5t} POST * \Delta SALSAL_{t,i} + c_{6t} POST * \Delta BDAR_{t,i} + c_{7t} POST * \Delta ETR_{t,i} + c_{8t} POST * \Delta SALPP_{t,i} + c_{9t} POST * \Delta SALA_{t,i} + c_{10t} POST * \Delta SALAP_{t,i} + c_{11t} POST * \Delta CFPS_{t,i} + c_{12t} POST * \Delta ASDB_{t,i} + c_{13t} POST * \Delta DEBT_{t,i} + c_{14t} POST * \Delta ACGS_{t,i} + c_{15t} POST * \Delta ASLR_{t,i} + c_{16t} POST * \Delta ASA_{t,i} + V_{t,i} \dots \dots \dots (3)$$

Provided POST= 1 if after the Financial Crisis, otherwise, POST= 0

III. Results

Table 4: shows the results of the regression analysis on each of the two period-groups before and after the crisis, into which the sample was divided based on the criteria set up previously.

The explanation ability of the fundamental analysis variables before and after the crisis was compared. The R2 of the period after the Financial Crisis was 0.172, higher than 0.102 of the period before the Financial Crisis. This means the explanation ability of the fundamental analysis variables after the Financial Crisis was found to be higher. Also, when only accounting profits were used as an independent variable, the R2 for the period after the Financial Crisis was 0.050, which is higher than 0.026 for the period before the Financial Crisis. This now means that the explanation ability of accounting profits was found to be higher. With regard to the increase in the additional explanation ability of the fundamental analysis variables, the R2 increase before the crisis was 0.076 whereas the R2 increase after the crisis was 0.122, which means the additional explanation ability of the fundamental analysis variables after the Financial Crisis was found to be higher.

The results of the regression analysis by group showed that before the Financial Crisis, Gross Profits (Δ GMSAL), Sales (Δ SALA), and Cost of Sales (Δ CGSA) were found to be statistically significant at the level of 1%; Liquidity (Δ ASDB) and Debt (Δ DEBT) were found to be significant at the level of 5%; and Inventory (Δ SALINV) was found to be significant at the level of 10%. After the Financial Crisis, Accounts Receivable (Δ SALAR), Sales (Δ SALA), Cost of Sales (Δ CGSA) and Personnel Expenses (Δ ASLR) were found to be statistically significant at the level of 1%; Gross Profits (Δ GMSAL) were found to be significant at the level of 5%; and Liquidity (Δ ASDB) and Debt (Δ DEBT) were found to be significant at the level of 10%. Thus, there were differences in significant fundamental analysis variables among the period-groups before and after the crisis.

Inventory (Δ SALINV) was found to be significant before the Financial Crisis but found insignificant after. Before the crisis, Inventory responded significantly in the positive (+) direction when the increase rate of sales is greater than that of Inventory, which means that in the period after the crisis it did not respond significantly. This means that before the crisis, Inventory showed significant results when the increase rate of Sales is higher than that of Inventory. After the crisis however, the mere fact that the increase rate of Sales is higher than that of Inventory was not received as good signal in the stock market.

As opposed to this, Accounts Receivable (Δ SALAR) and Personnel Expenses (Δ ASLR) were not significant before the Financial Crisis but were found to be significant after, with the negative (-) sign changing into positive (+). This means that, with regard to Accounts Receivable (Δ SALAR), the increasing rate of Accounts Receivable exceeding that of Sales was received as negative (-) signal in the stock market during the Financial Crisis. In other words, the stock market responded negatively to the softening of payment terms or increasing Accounts Receivable during the crisis, all of which are commonly used to expand the external growth through sales growth. This is thought to be attributable to the fact that the increase in sales by the softening of payment terms deteriorates profitability. Also regarding Personnel Expenses, it is thought to be attributable to the fact that the increase in personnel expenses exceeding the industry average was received negatively (-) in the stock market since personnel expenses became a burden to a company's profitability as enterprises experienced the rapid rise in personnel expenses after the crisis.

Meanwhile, Gross Profits (Δ GMSAL) showed negative (-) coefficients before the Financial Crisis but positive (+) coefficients after. This means that before the crisis, growth was

considered more important in the stock market than profitability. After the crisis however, profitability was considered more important. Such changes mean that investors saw profitability in their stock market investments as more important since companies that continued to focus on gross sales-oriented growth had difficulties during the crisis. This is attributable to the fact that after the Financial Crisis, the investment analysts of securities companies placed the greatest weight on profitability in their fundamental analysis.

Table 4: Comparison of the Results of Regression Analysis by Group Before and After the Financial Crisis

$$R_{t,i} = a_0 + a_1 \Delta EARN_{t,i} + b_{1t} \Delta SALINV_{t,i} + b_{2t} \Delta SALAR_{t,i} + b_{3t} \Delta CAPEXA_{t,i} + b_{4t} \Delta GMSAL_{t,i} + b_{5t} \Delta SALSAL_{t,i} + b_{6t} \Delta BDAR_{t,i} + b_{7t} \Delta ETR_{t,i} + b_{8t} \Delta SALPP_{t,i} + b_{9t} \Delta SALA_{t,i} + b_{10t} \Delta SALAP_{t,i} + b_{11t} \Delta CFPS_{t,i} + b_{12t} \Delta ASDB_{t,i} + b_{13t} \Delta DEBT_{t,i} + b_{14t} \Delta ACGS_{t,i} + b_{15t} \Delta ASLR_{t,i} + b_{16t} \Delta ASA_{t,i} + V_{t,i}$$

	Whole	Financial Crisis	
		Before	After
ΔEARN	0.178 (0.000)	0.152 (0.000)	0.142 (0.000)
ΔSALINV	0.060** (0.012)	0.082* (0.055)	0.006 (0.891)
ΔSALAR	0.060*** (0.009)	-0.042 (0.301)	0.107*** (0.005)
ΔCAPEXA	0.068** (0.014)	0.014 (0.778)	-0.009 (0.854)
ΔGMSAL	- 0.009 (0.678)	-0.106*** (0.004)	0.088** (0.017)
ΔSALSAL	0.075*** (0.002)	0.017 (0.756)	0.072 (0.114)
ΔBDAR	- 0.062*** (0.004)	-0.033 (0.377)	- 0.040 (0.312)
ΔETR	0.062*** (0.003)	-0.017 (0.651)	0.014 (0.697)
ΔSALPP	0.085*** (0.001)	-0.021 (0.629)	0.053 (0.234)
ΔSALA	0.157*** (0.000)	0.285*** (0.000)	0.672*** (0.000)
ΔSALAP	0.012 (0.560)	0.026 (0.471)	0.026 (0.466)
ΔCFPS	0.014 (0.495)	-0.011 (0.816)	-0.000 (0.990)
ΔASDB	0.123*** (0.001)	0.140** (0.024)	0.128* (0.086)
ΔDEBT	- 0.130*** (0.000)	-0.154** (0.013)	-0.132* (0.080)
ΔACGS	0.179*** (0.000)	0.361*** (0.000)	0.585*** (0.000)
ΔASLR	0.093*** (0.000)	-0.072 (0.161)	0.134*** (0.004)
ΔASA	0.105*** (0.000)	0.019 (0.732)	0.006 (0.903)
R ²	0.117	0.102	0.172

*/**/** represent statistical significance at the level of 10%, 5% and 1%, respectively.

Table 5 shows the results of the regression analysis by using POST, which is the dummy variable additionally representing the periods before and after the Financial Crisis in order to analyze the differences in the use of the fundamental analysis variables before and after the crisis. The results of the regression analysis showed that the R2, which represents the explanation amount of the regression model, was 0.143, representing an increase from the R2

of 0.117 shown before POST was taken. The F value of significant verification for the adaptability of the regression model was 11.403 and p value was 0.000, which was statistically significant at the level of 1%.

The dummy variables of equipment investment, $POST*\Delta CAPEX$, of Gross Profits, $POST*\Delta GMSAL$, of Sales, $POST*\Delta SALA$ and of Cost of Sales $POST*\Delta CGSA$ were significant at the level of 1%. Also, the dummy variables of Accounts Receivable $POST*\Delta SALAR$, of Personnel Expenses, $POST*\Delta ASLR$ and of Assets, $POST*\Delta ASA$ were significant at the level of 5%.

With regard to the signs of beta value of the standardized coefficients of each value, the dummy variables of Gross Profits, $POST*\Delta GMSAL$, of Sales, $POST*\Delta SALA$, of Cost of Sales, $POST*\Delta CGSA$, of Accounts Receivable $POST*\Delta SALAR$, and of Personnel Expenses, $POST*\Delta ASLR$ showed a positive sign (+), while the dummy variables of Equipment Investment, $POST*\Delta CAPEX$, and of Assets, $POST*\Delta ASA$ showed a negative (-) sign. This means that the fundamental analysis variables representing profitability such as Gross Profits ($\Delta GMSAL$), Cost of Sales ($\Delta CGSA$), Personnel Expenses ($\Delta ASLR$) and Sales ($\Delta SALA$), and Accounts Receivable ($\Delta SALAR$) became more significant in the stock market after the crisis. Such changes mean that investors consider profitability and stability in their stock market investments as more important since enterprises that continued to focus on gross sales-oriented growth had difficulties during the crisis. Also, Equipment Investment ($\Delta CAPEXA$) and Assets (ΔASA), all of which represent the growth of the scale of enterprises, were found to have negative (-) effects during the crisis.

This agrees with the fact that company restructuring after the crisis was received as a good sign in the stock market.

Accordingly, the three hypotheses, Hypothesis 1 (which says there are no differences in the utility of the financial statements information utilizing the fundamental analysis variables before and after the crisis), Hypothesis 2 (which says there are no differences in the value correlations of the fundamental analysis variables representing profitability such as Gross Profits ($\Delta GMSAL$), Cost of Sales ($\Delta CGSA$), and Personnel Expenses ($\Delta ASLR$) before and after the crisis) and Hypothesis 3 (which says there are no differences in the value correlations of the fundamental analysis variables representing gross sales growth such as Equipment Investment ($\Delta CAPEXA$) and Assets (ΔASA) before and after the crisis) were rejected. In conclusion, there were differences in the value correlations of the fundamental analysis variables in the periods before and after the Financial Crisis, and the explanation ability of the fundamental analysis variables and profits was enhanced after the crisis. After the crisis, the value correlations of Gross Profits ($\Delta GMSAL$), Cost of Sales ($\Delta CGSA$) and Personnel Expenses ($\Delta ASLR$) of the fundamental analysis variables representing profitability were increased. On the other hand however, Equipment Investment ($\Delta CAPEXA$) and Assets (ΔASA) of the fundamental analysis variables representing gross sales growth were found to have negative (-) effects.

Table 5: The Regression Analysis Result of the Regression Model (3)

$$R_{t,i} = a_0 + a_1 \Delta EARN_{t,i} + b_1 \Delta SALINV_{t,i} + b_2 \Delta SALAR_{t,i} + b_3 \Delta CAPEXA_{t,i} + b_4 \Delta GMSAL_{t,i} + b_5 \Delta SALSAL_{t,i} + b_6 \Delta BDAR_{t,i} + b_7 \Delta ETR_{t,i} + b_8 \Delta SALPP_{t,i} + b_9 \Delta SALA_{t,i} + b_{10} \Delta SALAP_{t,i} + b_{11} \Delta CFPS_{t,i} + b_{12} \Delta ASDB_{t,i} + b_{13} \Delta DEBT_{t,i} + b_{14} \Delta ACGS_{t,i} + b_{15} \Delta ASLR_{t,i} + b_{16} \Delta ASA_{t,i} + c_1 POST * \Delta SALINV_{t,i} + c_2 POST * \Delta SALAR_{t,i} + c_3 POST * \Delta CAPEXA_{t,i} + c_4 POST * \Delta GMSAL_{t,i} + c_5 POST * \Delta SALSAL_{t,i} + c_6 POST * \Delta BDAR_{t,i} + c_7 POST * \Delta ETR_{t,i} + c_8 POST * \Delta SALPP_{t,i} + c_9 POST * \Delta SALA_{t,i} + c_{10} POST * \Delta SALAP_{t,i} + c_{11} POST * \Delta CFPS_{t,i} + c_{12} POST * \Delta ASDB_{t,i} + c_{13} POST * \Delta DEBT_{t,i} + c_{14} POST * \Delta ACGS_{t,i} + c_{15} POST * \Delta ASLR_{t,i} + c_{16} POST * \Delta ASA_{t,i} + V_{t,i}$$

	Non-standardized Coefficients		Standardized Coefficients	t	Significance Probability	Colinearity Measures	
	B	Standard Error	Beta			Tolerance Limit	VIF
(상수)	0.034	0.016		2.070	0.039		
$\Delta EARN$	0.294	0.042	0.156	7.000	0.000	0.866	1.154
$\Delta SALINV$	0.111	0.045	0.071	2.459	0.014	0.520	1.922
$\Delta SALAR$	0.048	0.039	0.033	1.211	0.226	0.564	1.773
$\Delta CAPEXA$	0.002	0.000	0.116	3.402	0.001	0.371	2.697
$\Delta GMSAL$	- 0.007	0.006	- 0.030	-1.338	0.181	0.847	1.181
$\Delta SALSAL$	0.143	0.070	0.067	2.050	0.041	0.400	2.502
$\Delta BDAR$	- 0.008	0.004	- 0.052	-2.146	0.032	0.734	1.363
ΔETR	0.012	0.004	0.069	2.977	0.003	0.791	1.264
$\Delta SALPP$	0.001	0.001	0.049	1.635	0.102	0.483	2.071
$\Delta SALA$	0.004	0.001	0.123	3.287	0.001	0.305	3.275
$\Delta SALAP$	0.001	0.011	0.002	0.063	0.950	0.682	1.467
$\Delta CFPS$	0.000	0.000	0.003	0.146	0.884	0.969	1.032
$\Delta ASDB$	0.183	0.058	0.132	3.177	0.002	0.250	4.002
$\Delta DEBT$	- 0.279	0.076	- 0.157	-3.649	0.000	0.232	4.305
$\Delta ACGS$	0.024	0.003	0.189	8.466	0.000	0.863	1.158
$\Delta ASLR$	0.076	0.068	0.034	1.117	0.264	0.466	2.146
ΔASA	0.373	0.107	0.136	3.495	0.000	0.283	3.536
POST* $\Delta SALINV$	- 0.079	0.080	- 0.029	-0.990	0.322	0.498	2.007
POST* $\Delta SALAR$	0.139	0.070	0.053	1.980	0.048**	0.609	1.643
POST* $\Delta CAPEXA$	- 0.002	0.001	- 0.084	-2.624	0.009***	0.421	2.377
POST* $\Delta GMSAL$	0.042	0.015	0.065	2.835	0.005***	0.823	1.214
POST* $\Delta SALSAL$	0.026	0.105	0.008	0.243	0.808	0.361	2.770
POST* $\Delta BDAR$	- 0.003	0.007	- 0.011	-0.437	0.662	0.663	1.509
POST* ΔETR	- 0.010	0.009	- 0.025	-1.080	0.280	0.776	1.288
POST* $\Delta SALPP$	0.002	0.001	0.042	1.427	0.154	0.489	2.046
POST* $\Delta SALA$	0.014	0.002	0.285	5.613	0.000***	0.166	6.025
POST* $\Delta SALAP$	0.014	0.019	0.018	0.723	0.470	0.679	1.473
POST* $\Delta ASDB$	- 0.054	0.109	- 0.025	-0.496	0.620	0.168	5.947
POST* $\Delta DEBT$	0.125	0.137	0.048	0.909	0.363	0.156	6.398
POST* $\Delta ACGS$	1.240	0.195	0.281	6.360	0.000***	0.219	4.568
POST* $\Delta ASLR$	0.304	0.121	0.079	2.508	0.012**	0.430	2.325
POST* ΔASA	- 0.429	0.176	- 0.091	-2.435	0.015**	0.307	3.263
Explanation Ability of Model	Sample Size : 1,999 R ² : 0.156 Revised R ² : 0.143 F value : 11.403(p Value .000)						

*/**/** denotes statistical significance in the level of 10%, 5% and 1%, respectively.

IV. Conclusion and Suggestions

In this study's analysis before and after the Financial Crisis, the value correlations of the accounting information and the additional explanation ability of the fundamental variables were found to be very high after the crisis. The significant fundamental variables varied before and after the crisis. Inventory (SALINV) was found to be significant before the Financial Crisis but was found insignificant after. This means that the increase rate of Sales exceeding that of Inventory, responded in the positive (+) direction before the Financial Crisis, but did not respond significantly after. This means that during the crisis, the mere fact that the increase rate of Sales is greater than that of Inventory was not received as good signal in the stock market. On the other hand, Accounts Receivable (Δ SALAR) and Personnel Expenses (Δ ASLR) were not significant before the Financial Crisis but significant after the crisis, and the signs also changed from negative (-) to positive (+). This means that during the crisis, the increase rate of Accounts Receivable exceeding that of Sales was received as a negative (-) sign in the stock market. In other words, during the crisis, the stock market responded negatively to the easing of payment terms that is commonly used for the gross sales growth through expanding sales of the enterprises or the increasing of Accounts Receivable through sales on credit. Regarding Personnel Expenses (Δ ASLR), rapid increase in personnel expenses after the crisis became a burden on a company's profitability, so the increase in Personnel Expenses was received as a negative (-) signal in the stock market. Meanwhile, Gross Profits (Δ GMSAL) showed negative (-) coefficients before the crisis, but showed positive (+) coefficients after. This means that before the crisis, the stock market considered growth more important than profitability, but after the crisis, profitability became more important. Such changes mean that while undergoing the crisis, companies that continued to focus on gross sales-oriented growth underwent many difficulties, so that investors gave greater weight on profitability when investing in the stock market.

Also, the results from conducting regression analysis using POST, which is the dummy variable representing the periods before and after the Financial Crisis, show that Gross Profits ($POST \cdot \Delta$ GMSAL), Sales ($POST \cdot \Delta$ SALA), Cost of Sales ($POST \cdot \Delta$ CGSA), Accounts Receivable ($POST \cdot \Delta$ SALAR) and Personnel Expenses ($POST \cdot \Delta$ ASLR) showed positive (+) signs, but Equipment Investment ($POST \cdot \Delta$ CAPEX) and Assets ($POST \cdot \Delta$ ASA) showed negative (-) signs. This means that Gross Profits (Δ GMSAL), Cost of sales (Δ CGSA) and Personnel Expenses (Δ ASLR), all of which are the fundamental analysis variables representing profitability, became more significant in the stock market after the crisis. Such changes mean that during crisis, companies that continued to focus on gross sales-oriented growth underwent many difficulties, so that investors gave greater weight on profitability and stability when investing in the stock market. Equipment Investment (Δ CAPEXA) and Assets (Δ ASA), both of which represent the growth of the scale of the enterprise, were found to have negative (-) effects during the crisis. This agrees with the fact that company restructuring was received as a good signal in the stock market after the crisis.

This research contributes to the existing research works as follows:

First, the utility of the fundamental analysis generally used for evaluating stocks in Korea has been verified on an actual proof basis, and as opposed to existing works, the fundamental analysis variables used by securities analysts in Korea have been additionally utilized for

verification. Second, this research has presented the change that took place sometime in 1997 during the Financial Crisis, in which participants in the stock market, when establishing their investment strategy, emphasize more on profitability than on the gross sales or size of enterprises. Third, this study has presented that there are differences before and after the Financial Crisis in the fundamental analysis variables which securities analysts after the crisis consider significant.

Notwithstanding this contribution, there may be limitations in generalizing the results of this research since only the listed manufacturing enterprises were analyzed. The influence of the industry was not removed. In future research, research works on the enterprises that are included not only in the manufacturing industry but also in the service and financial industries are considered meaningful. Additional research works that shall utilize the unique fundamental analysis variables that are used by securities analysts on an industry basis are necessary.

REFERENCES

- Abarbanell, J. and B. Bushee, 1998. Abnormal Returns to a Fundamental Analysis Strategy. *Accounting Review* 73(January), 19-45
- Abarbanell, J. and B. Bushee, 1997. Fundamental Analysis, Future Earnings, and Stock Prices. *Journal of Accounting Research* 35, 1-24
- Abarbanell, J. and V. Bernard, 1992. Tests of Analysts' Overreaction /Underreaction to Earnings Information as an Explanation for Anomalous Stock Price Behavior. *The Journal of Finance*, Vol 47, No.3(July), 1181-1207
- Amir, Eli and Baruch Lev, 1996. Value Relevance of Nonfinancial Information: The Wireless Communications Industry. *Journal of Accounting and Economics* 22, 3-30
- Ball, R., 1992. The Earnings-Price Anomaly. *Journal of Accounting and Economics*, Vol 15, 510-532
- Basu, S. 1983. The Relationship Between Earnings' Yield, Market Value and Return for NYSE Common Stock. *Journal of Financial Economics* 12: 129-156
- Bernard, V. and J. Tomas. 1989. Post-Earnings-Announcement Drift: Delayed Price Response or Risk Premium? *Journal of Accounting Research* 27: 1-36
- Dechow, P., A. P. Hutton, L. Meulbroek and R. G. Sloan, 2001. Short-Sellers, Fundamental Analysis, and Stock Returns. *Journal of Financial Economics* 61, 77-106
- Ghicas, D. C., N. Iriotis, A. Papadaki, and M. Walker, 2000. Fundamental Analysis and the Valuation of IPOs in the Construction Industry. *The International Journal of Accounting*, Vol. 35, No. 2, 227-241
- Greig, A. 1992. Fundamental Analysis and Subsequent Stock Returns. *Journal of Accounting and Economics* 15 (June/September), 413-442
- Lee, C. 2001. Market Efficiency and Accounting Research : A Discussion of 'Capital Market Research in Accounting' by S. P. Kothari. *Journal of Accounting and Economics* 31, 233-253
- Lev, B. and S. Thiagarajan. 1993. Fundamental Information Analysis. *Journal of Accounting Research* 31, 190-215
- Lev, B. and P. Zarowin, 1999. The Boundaries of Financial Reporting and How to Extend Them. *Journal of Accounting Research* 37, 353-385
- Nissim, D. and S. Penman. 2001. Ratio Analysis and Equity Valuation: From Research to Practice. 6, 109-154
- Ohlson, J. 1995. Earnings, Book Values, and Dividends in Security Valuations. *Contemporary Accounting Research* 11, 661-687
- Ou, J. 1990. The Information Content of Nonearnings Accounting Numbers as Earnings Predictors. *Journal of Accounting Research* 28 (Spring), 144-163
- Ou, J. and S. Penman, 1989. Financial Statement Analysis and the Prediction of Stock Returns. *Journal of Accounting and Economics* 11, 295-329
- Penman, S. 1991. An Evaluation of Accounting Rate-of-Return. *Journal of Accounting & Finance* 6, 233-255
- Penman, S. 1992. Return to Fundamentals. *Journal of Accounting, Auditing & Finance* 7, 465-483
- Penman, S. 1996. The Articulation of Price-Earnings Ratios and Market-to-Book Ratios and the Evaluation of Growth. *Journal of Accounting Research* 34, 235-259
- Piotroski, J. 2000. Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers. *Journal of Accounting Research*:1-51
- Quirin, J., K. T. Berry and D. O'Bryan, 2000. A Fundamental Analysis Approach to Oil and Gas Firm Valuation. *Journal of Business Finance and Accounting* 27, 785-820
- Stober, T. 1992. Summary of Financial Statement Measures and Analysts' Forecasts of Earnings. *Journal of Accounting and Economics* 15 (June/September), 347-372
- Zhang, G. 2000. Accounting Information, Capital Investment Decisions, and Equity Valuation: Theory and Empirical Implications. *Journal of Accounting Research* vol. 38 No. 2 (Autumn), 271-295

Presentation of Model for Quality Improvement of Human Resource Management (Case Study: Social Security Organization of Mazandaran Province)

Azizollah Alemi Mahmoodi, Research Institute of Shakhespajouh,
Assist.Prof. Mohammad Mehdi Rashidi, International Institute for Energy Studies,

ABSTRACT

Human Resource Management is designed to maximize employee performance in service of an employer's strategic objectives. This research is applied in terms of the purpose, and in terms of data collection method, the qualitative section of the interview method is deep and in the quantitative part of the descriptive-survey method has been used. The total number of statistical population was 213 experts working in social security organization of Mazandaran province 132 individuals were selected as a sample. a closed-ended questionnaire was used to test the model and Lisrel software for verifiable factor analysis. We conclude that factors such as "selection, absorption ,training, service compensation , Performance evaluation " can be important factors in HRM and effective factors on improving the quality of resource management To be human. We also conclude that all factors in the HRM model. Among the factors, the most important factor was selection. It was also found that the factor of motivation among other factors is less important than other factors in improving the quality of human resources management.

KEYWORDS: social security organization of Mazandaran province, Quality, Improvement, Human Resource Management

Research Literatur

1.Human resources Management:

Human Resource Management (HRM) is the term used to describe formal systems devised for the management of people within an organization. The responsibilities of a human resource manager fall into three major areas: staffing, employee compensation and benefits, and defining/designing work.

2.History of HRM

The Human Resources field evolved first in 18th century Europe from a simple idea by Robert Owen and Charles Babbage during the industrial revolution. These men knew that people were crucial to the success of an organization. They expressed that the well being of employees led to perfect work. Without healthy workers, the organization would not survive (Griffin,2000). HR later emerged as a specific field in the early 20th century, influenced by Frederick Winslow Taylor (1856–1915). Taylor explored what he termed "scientific management" others later referred to "Taylorism", striving to improve economic efficiency in

manufacturing jobs. He eventually keyed in on one of the principal inputs into the manufacturing process—labor—sparking inquiry into workforce productivity (Merkle, 2004). Meanwhile, in England C S Myers, inspired by unexpected problems among soldiers which had alarmed generals and politicians in the First World War, set up a National Institute of Industrial Psychology (Mark, 2014), setting seeds for the human relations movement, which on both sides of the Atlantic built on the research of Elton Mayo and others to document through the Hawthorne studies (1924–1932) and others how stimuli, unrelated to financial compensation and working conditions, could yield more productive workers (Mayo, 1945). Work by Abraham Maslow (1908–1970), Kurt Lewin (1890–1947), Max Weber (1864–1920), Frederick Herzberg (1923–2000), and David McClelland (1917–1998), forming the basis for studies in industrial and organizational psychology, organizational behavior and organizational theory, was interpreted in such a way as to further claims of legitimacy for an applied discipline. In the Soviet Union, meanwhile, Stalin's use of patronage exercised through the "HR Department" equivalent in the Bolshevik Party, its Orgburo, demonstrated the effectiveness and influence of human-resource policies and practices (Hale, 2014).

3. Careers

There are half a million HR practitioners in the United States and millions more worldwide (Jonathan, 2010). The Chief HR Officer or HR Director is the highest ranking HR executive in most companies and typically reports directly to the Chief Executive Officer and works with the Board of Directors on CEO succession (Wright, 2011). Some individuals with PhDs in HR and related fields, such as industrial and organizational psychology and management, are professors who teach HR principles at colleges and universities. They are most often found in Colleges of Business in departments of HR or Management. Many professors conduct research on topics that fall within the HR domain, such as financial compensation, recruitment, and training.

4. Virtual human resources

E-Recruiting : Recruiting has been the most influenced by information technology (Ensher, Nielson, Grant ,2002) . In the past, recruiters had relied on printing in publications and word of mouth to fill open positions. HR professionals were not able to post a job in more than one location and did not have access to millions of people, causing the lead time of new hires to be drawn out and tiresome.

5. Human Resources Information Systems (HRIS)

Human resources professionals generally process a considerable amount of paperwork on a daily basis. This paperwork could be anything from a department transfer request to an employee's confidential tax form. In addition to processing this paperwork, it has to be on file for a considerable period of time. The use of Human Resources Information Systems (HRIS) has made it possible for companies to store and retrieve files in an electronic format for people within the organization to access when needed.

6. Training

Technology makes it possible for human resources professionals to train new staff members in a more efficient manner. This gives employees the ability to access onboarding and training programs from anywhere. This eliminates the need for trainers to meet with new hires face to face when completing necessary paperwork to start. Training in virtual classrooms makes it possible for the HR professionals to train a large number of employees quickly and to assess their progress through computerized testing programs.

7. Systematic Perspective

A process used to determine the viability of a project or procedure based on the experiential application of clearly defined and repeatable steps and an evaluation of the outcomes. The goal of a systematic approach is to identify the most efficient means to generate consistent, optimum results. Taking into account all of the behaviors of a system as a whole in the context of its environment is the systems perspective. While the concept of system itself is a more general notion that indicates separation of part of the universe from the rest, the idea of a systems perspective is to use a non-reductionist approach to the task of describing the properties of the system itself. The goals to this approach to management were:

- To create specific processes and procedures to be used in job task completion
- To ensure that organizational operations were economical
- To ensure that staffing was adequate for the needs of the organization
- To maintain suitable inventory so that the demands of consumers could be met
- To establish organizational controls

8. HRM Models: Scientific model, a simplified and idealized understanding of physical systems. The term conceptual model may be used to refer to models which are formed after a conceptualization or generalization process. (Gregory, 1992). Conceptual models are often abstractions of things in the real world whether physical or social. Semantics studies are relevant to various stages of concept formation and use as Semantics is basically about concepts, the meaning that thinking beings give to various elements of their experience.

Four major models have been identified on human resource management and all these serve as many purposes:

1. They provide an analytical framework for studying Human resource management (for example, situational factors, stakeholders, strategic choice levels, competence)

2. They legitimize certain HRM practices; a key issue here being the distinctiveness of HRM practices: “It is not the presence of selection or training but a distinctive approach to selection or training that matters”.

3. They provide a characterization of human resource management that establishes variables and relationship to be researched.

4. They serve as a heuristic device-something to help us discover and understand the world for explaining the nature and significance of key HR practices. So The four HRM models are: (i) The Fombrun, (ii) The Harvard, (iii) The Guest, and (iv) The War. For example, The Harvard model claims to be comprehensive in as much as it seeks to comprise six critical components of HRM. The dimensions included in the model are: stakeholders, interests, situational factors, HRM policy choices, HR outcomes, long-term consequences and a feedback loop through. The outputs flow directly into the organization and the stakeholders

9.The Important Of The Research(ISSO-Mazandaran)

The Iranian Social Security Organization as an intergenerational public non-governmental institution with a socio-economic nature is the major and most inclusive provider of social protection based on social insurance principles. The organization is administratively and financially autonomous and relies on tripartite principle of employee, employer and Government. According to Islamic and Iranian pattern, the ISSO plays a vital role in protecting the labor force within the process of sustainable development of the country and also deepening social and financial security through implementing, extending and expanding various social and health insurances within the legal and actuarial frame. Relying on human force as the most strategic advantage and benefiting from the latest scientific achievements and new technologies through dynamic and effective presence in labor market, the ISSO is committed to transparency, accountability and timely delivery of legal commitment to the beneficiaries, and preserve resources and increase their value. By 2025, The Iranian Social Security Organization will be a sustainable, dynamic, agile, and excellent accountable organization with intelligent processes for qualified and timely service provision to stakeholders. Being plan-oriented, trustworthiness, human dignity, compliance and justice, professionalism, organizational solidarity, professional commitment, morality, propection, continuous development. Strategic Goals of Social Security Organization of Mazandaran Province are:

1. To form and develop a social security dialogue at state and public levels
2. To improve sustainable organizational resilience in financial and performance perspective
3. To optimize interaction procedures and organizational systems based on civil discourse, continuous human resources development, and using the most applicable high technologies.

The application of the research are :

1. Reforming the structures, developing the organizational capabilities and capacities, emphasizing on reassigning the role of the organization as a dynamic and proactive entity and boosting synergy between different sectors (pension health and investment).
2. Revision and reforming the structures and processes to qualitatively and quantitatively promote health and pension provision to all shareholders
3. Reformulating processes and information system structures of the organization to achieve integrated and intelligent service provision systems
4. Developing a new organizational approach to human capital to preserve occupational and human dignity and improve quality for working life of the staff.
5. Developing socio-cultural discourse, focusing on theoretical and practical aspects of social insurance at a state and public levels
6. Improving financial sustainability and organizational efficiency and effectiveness through expenditure management and cost containment based on compliance and legislative functions
7. Developing revenue resources through improving efficiency in investment management to increase investment revenues share
8. Developing knowledge management system as a foundation of decision making process based on social insurance and social security principles.

10. Research Questions

The main question of the research:

What is the appropriate model for improving the quality of HRM in the social security organization-Mazandaran?

Sub-questions:

1. What are the main components in improving the quality of human resources in Social Security Organization of Mazandaran province?
2. What are the main indicators in the components of HRM model in Social Security Organization of Mazandaran province?
3. What are the priorities of the factors affecting the quality improvement model of HRM?

11. Methodology:

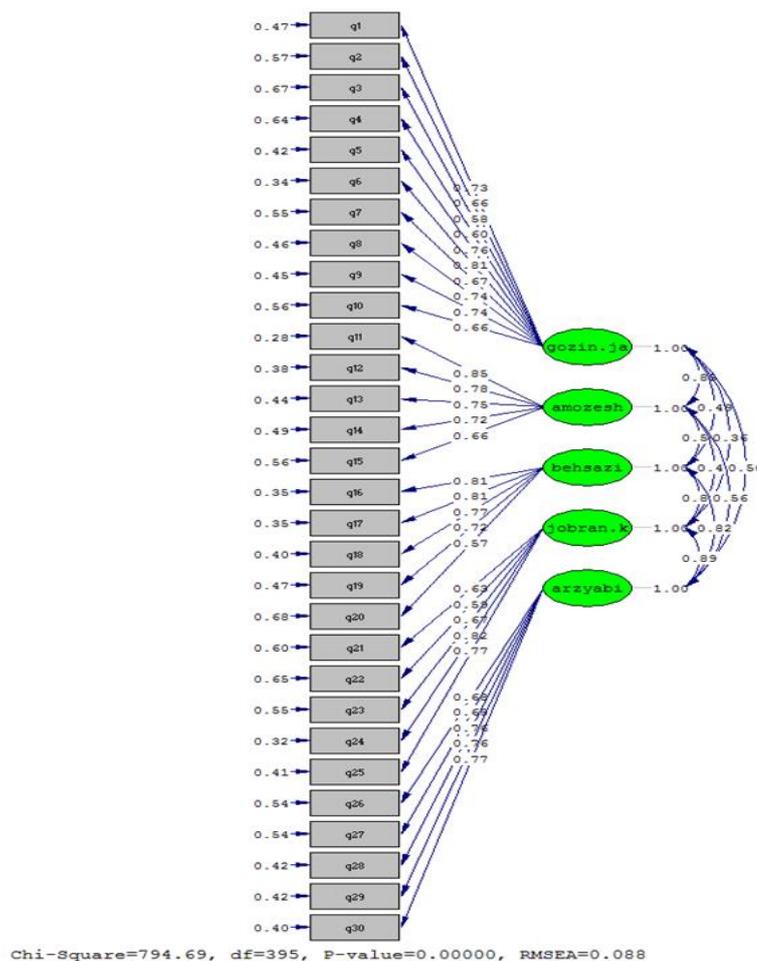
This research is applied in terms of the purpose, and in terms of data collection method, the qualitative section of the interview method is deep and in the quantitative part of the descriptive-survey method has been used. The total number of statistical population was 213 experts working in social security organization of Mazandaran province 132 individuals were selected as a sample. a closed-ended questionnaire was used to test the model and Lisrel software for verifiable factor analysis.

12.Conclusion:

To response the following questions(What is the appropriate model for improving the quality of HRM in the social security organization? What are the main components in improving the quality of human resources in Social Security Organization of Mazandaran province? What are the main indicators in the components of HRM model in Social Security Organization of Mazandaran province? What are the priorities of the factors affecting the quality improvement model of HRM?

The researchers found these results:

A.The suitable model(SEM) is as following:



B. The main components in improving the quality of human resources in Social Security Organization of Mazandaran province: The factors such as " selection ,absorption ,training, service compensation , Performance evaluation " can be important factors in HRM and effective factors on improving the quality of resource management To be human. We also conclude that all factors in the HRM model. Among the factors, the most important factor was selection. It was also found that the factor of motivation among other factors is less important than other factors in improving the quality of human resources management

REFERENCES

- Gregory, Frank Hutson (1992) .Cause, Effect, Efficiency & Soft Systems Models Warwick Business School Research Paper .No. 42. With revisions and additions it was published in the Journal of the Operational Research Society (1993) 44(4), pp. 149–68.
- Johnason, P. (2009). HRM in changing organizational contexts. In D. G. Collings & G. Wood (Eds.), *Human resource management: A critical approach* (pp. 19-37). London: Routledge.
- Collings, D. G., & Wood, G. (2009). *Human resource management: A critical approach*. In D. G. Collings & G. Wood (Eds.), *Human resource management: A critical approach* (pp. 1-16). London: Routledge.
- Paauwe, J., & Boon, C. (2009). Strategic HRM: A critical review. In D. G. Collings, G. Wood (Eds.) & M.A. Reid, *Human resource management: A critical approach* (pp. 38-54). London: Routledge.
- Klerck, G. (2009). "Industrial relations and human resource management". In D. G. Collings & G. Wood (Eds.), *Human resource management: A critical approach* (pp. 238-259). London: Routledge.
- Mark O'Sullivan(2014). *What Works at Work*, The Starbank Press, Bath, page 3.
- Mayo, Elton (1945). "Hawthorne and the Western Electric Company" (PDF). Harvard Business School. Retrieved 28 December 2011.
- Society for Human Resource Management(2011). "About SHRM".. Archived from the original on 16 January 2009. Retrieved 22 December.
- Hale, Henry E. (2014). *Patronal Politics. Problems of International Politics*. Cambridge University Press. p. 49. ISBN 9781107073517. Retrieved 2015-08-24
- Cappelli, Peter(2015). "Why We Love to Hate HR ... and What HR Can Do About It". *Harvard Business Review* (July–August 2015). Retrieved 25 July 2015.
- Armstrong, Michael (2006). "Human capital management". *A Handbook of Human Resource Management Practice*. Gale virtual reference library. Kogan Page Publishers. p. 29.
- O'Brien, Michael (October 8, 2009). "HR's Take on The Office". *Human Resource Executive Online*. Archived from the original on 18 December 2011. Retrieved 28 December 2011.
- Ulrich, Dave (1996). *Human Resource Champions. The next agenda for adding value and delivering results*. Boston, Mass.: Harvard Business School Press. ISBN 0-87584-719-6. OCLC 34704904.
- Towers, David(2007). "Human Resource Management essays". Retrieved 2007-10-17.
- Jonathan E. DeGraff (2010). "The Changing Environment of Professional HR Associations". *Cornell HR Review*. 11 February 2012.
- Wright, Patrick(2011). "The 2011 CHRO Challenge: Building Organizational, Functional, and Personal Talent" (PDF). Cornell Center for Advanced Human Resource Studies (CAHRS).
- Conaty, Bill, and Ram Charan (2011). *The Talent Masters: Why Smart Leaders Put People Before Numbers*. Crown Publishing Group. ISBN 978-0-307-46026-4.
- U.S. Bureau of Labor Statistics(2011). "Human Resources, Training, and Labor Relations Managers and Specialists" Retrieved 23 December 2011.
- Johnson, R. D., & Guetal, H. G. (2012). *Transforming HR Through Technology*. Retrieved from https://www.shrm.org/about/foundation/products/documents/hr_tech_epg_final.pdf .

Effectiveness Analysis of the Turkish Banking Sector After the Restructuring Program: An Empirical Application

Dr. Mustafa Göktuğ Kaya, Tax Inspector, mustafa.goktug.kaya@vdk.gov.tr

ABSTRACT

The banking sector is an important tool in achieving rapid economic growth. Banks are an effective institutions in the structuring of the economy and in ensuring long-term sustainable macroeconomic stability. The banking sector, which has an important role in the financial system, must be able to need the interaction with the economic system clearly and has to function in a healthy structure.

Crises, structural changes in the Turkish banking sector has become mandatory. After the financial crises in 2000-2001, reduction in public sector borrowing requirement, improvement in macro-economic data, growth trend in the world, the effective implementation of risk management in developing countries have led to Turkish banking system a stable and healthy growth. In this process, groups of foreign capital has increased interest in the sector, this share continues to increase. In this study, after restructuring the process of development of the banking sector and financial soundness and efficiency are investigated. As a result, it is seen that including the period of the global financial crisis gaining a reliable structure of the sector and according to foreign-owned banks in the sector increasing an efficiency ratio.

KEYWORDS: Turkish Banking Sector, Restructuring Program, Efficiency Analysis

Introduction

The most important function of financial system is to enable funds to be effectively transferred between the units that supply and demand funds. Banks are the most distinct and important ring of financial mediation toward non- interruptedly flowing of funds. From this point of view, banking system has a pivotal position in the development of countries. The most affected sector from economic crises has been banking sector, one of keystones of economy. Banks, whose financial performances fall in the crises, had serous losses, badly affecting each other in the system. Financial crises, experienced in Turkey in November 2000 and February 2001, led financial structures of banking system, in general, and of banks transferred to Savings Deposit Insurance Fund (SDIF), in specific, to rapidly disturb. Together with crises experienced, rapid disturbance that occurs in financial structures of banks, transferred to fund, created a serious financial burden on government. All of these developments experienced, particularly rapidly improvement of banks, transferred to SDIF, has increased the importance of the need to remove government control on these banks. For the solution of the problems of Turkish Banking System, following Crisis 2001, with restructuring program, sector was tried to be arranged. In addition, with the effect of adaptation process to European Union, the need for making banking sector compatible with BASEL directives emerged.

The aim of the study is to identify the effectiveness change in Turkish banking sector after restructuring and introduce whether or not the program achieves to its target by means of Data Envelopment Analysis (DEA) for the period of 2001-2011, assessing sector in terms of

financial soundness. In addition, in the second stage, by means of Tobit regression model, dealing with some financial ratios, which are targeted to be improved in restructuring process, and whose importance is known on being effective, those being statistically significant among them were tried to be identified and, thus, it was targeted to determine how much successful of improvement was enabled.

1. Turkish Banking Sector Before Restructuring

After the decisions on January 24, 1980, together with the process of becoming marketable that increases, important fluctuations were experienced in banking sector. The problems such as intertwinement of sector, inadequacy of equities, deposits, and credits; presence of a few number of large banks and more number of banks; dominance of public banks and high duty losses; monetary substitution and increase of deficit position; lack of supervision; and government –originated problems played important role in these fluctuations. Therefore, Transition to Strong Economy Program of Turkey after February 2001 Crisis transformed to recovery program of this sector. In the framework of program, About \$ 45 billion of resource were transferred to the sector as compensation of duty loses of public banks and banks transferred to Savings Deposit and Insurance Fund, and important legal and institutional changes were carried out.

Table 1: Development of Banking Sector in the period of 1981 -2000

	1981	1990	2000
Number of banks (number)	45	66	79
Private commercial bank	24	25	28
Investment and development bank	2	7	12
Foreign banks	6	23	21
Staff per branch (number)	20,3	23,5	21,7
Active per capita (\$)	203.954	361.696	1.524.158
Personal expenses/total expenses(%)	25,2	12,5	9,2
Credit/deposits(%)	86,2	84,0	49,9
Net profit / total assets (%)	1,75	2,3	-2,8

Source: Dinçer, A. DPT, Bankacılık Sektöründe Konsolidasyon, Ülke Deneyimleri ve Türkiye İçin Öneriler, Ekim 2006, pp.88-92

In the period of 1980 -1990, banks began to employ more personnel to collect deposit and market the products of banking system. So, while the number of personnel per branch was 20.3 in 1981, it rose to 25.6 in 1989. In the second half, of 1980s, together with the increase of technology use, a rise was observed in the effectiveness of personnel established in banking system. As a result of this, active size per personnel, which was \$ 203.954 in 1981 rose to \$ 347.390 in 1989. In 1990s, due to positive developments occurring in the share of banking sector in economy, foreign expansion, technological infrastructure, and diversity of banking service, positive developments were experienced. In return to this, the function of sector to subsidize production and investment activities and channelize the resources to long term

investments weakened. In 1990, the rate of credit-deposit was 84%, it regressed to 41.7% in 1995 and, with the effect of the fall in interest rates in 2000 and decrease of public sector borrowing requirement, this rate rose to the level of 49.9% (Dinçer,2006:92).

If necessary to summarize, in Turkish banking system, at the end of 1990, as a result of increase of public sector debt stock in high rate, since public financing was tried to be realized by risk premium gradually increasing, it was seen that an extreme vulnerable financial structure prevailed against the internal and external shocks (Gürleyendağ, 2006:83).

Among the major problems of sector are the inadequacy of equities, inadequacy of deposits, and credits; presence of a few number of large banks and more number of banks; dominance of public banks and high duty losses; monetary substitution and increase of deficit position; lack of supervision; and government –originated problems.

2.The Effects of Crises 2000 and 2001 on Turkish Banking Sector

“Inflation Reduction Program 2000-2002” continuing for quarter century and aiming economy to get rid of high inflation and bring economy into a stable structure, without completing its first year, deeply suffered from crisis in November 2000 and completely collapsed in February 2001.

The rise in the interest rates of domestic borrowing caused liquidity crisis to emerge in the banks holding the securities of public banks as a reserve in a large rate (Bayraktar,2010:465). Overnight repo interest rose to 1500s % in the first crisis and to 7000s in the second crisis. Istanbul Securities Exchange (ISE) 100 index decreased in the first crisis from 17,000s to 7,000s and from 11,000s to 7,000s in the second crisis. \$ 4 billion sold in exchange of TL 3 quadrillion transferred to some banks was not enough to reduce fever of the market and foreign exchange reserve of Central Bank of Republic of Turkey which was \$ 27.9 billion in February 16, decreasing \$ 5 billion, fell to \$ 22.5 billion in February 23. Exchange rate of dollar, which was 1 \$ = 686,500 in February 19, rose to TL 920,00 in February 23. In the framework of the program applied, while basket exchange rate, determined as 1 \$ = 0. 77 EUR, was foreseen to increase in the rare of wholesale price index (CPI) (exchange rate anchor), in February 21, 2001, this policy was left and it was obliged to be passed floating exchange rate (TCMB Ekonomik Rapor, 2002:45-46).

Banking sector, after November 2000 Crisis, faced to interest risk and both interest and exchange rate risk after February 2001. In the leadership of Kemal Derviş, minister responsible for economy, a new program was implemented under the name of Transition to Strong Economy of Turkey.

At the end of the year 2000, rapid increase of interest rates, on the one hand, reduced market value of securities portfolio of banks, on the other hand, together with rapid increase in exchange rates, carried the costs resulted from deficit position and reached intolerable dimensions. Public and SDIF banks experienced the biggest loss, whose short term fund demand was high (Bağımsız Sosyal Bilimciler İktisat Grubu, 2001: 11).

As foreign borrowing increases, monetary basis increased and TL gain value in the face of foreign currencies. As a requirement of program, since it was committed that any sterilization could not be, the nominal and real interests fell and consumer credits increased in the rate of about 330%. The rate of exports meeting imports fell; current deficit that was \$ 14 billion rose

to \$ 9.8 billion in 2000. This state reduced the reliability to TL and urged people and institute to foreign currency substitution. After November 2000 crisis, while interest rate rapidly increased, that maturities are short especially disturbed the financial structures of public banks, suffered from liquidity shortage, and banks in the scope of SDIF.

3. Restructuring Methods in Banking and Its Methods

In restructuring program of banking sector, after global financial crises, banks were aimed to be structured transparently and originally by means of institutional and financial several innovations associated with both raising capital ratios and their internal management (Değirmenci, 2003:89).

In general meaning, restructuring, when it is mentioned about for a single bank, is defined as increasing the net value of the bank, and thus, power to perform their obligations by strengthening its financial structure (BDDK Risk Bülteni, 2009:30). Applications of restructuring is a way appealed when all solution ways of public and banking sector are expired. Both public authority and banks can be reluctant about restructuring activities.

Table 2: Systemic Restructuring Methods of Banking

Financial Providing urgent monetary support for banks	Government Support (bond, , allowance, , credit) Liquidity Support by Central Bank, Guarantee of Private Capital and Bond Support
Operational Development of Management and Effectiveness	New Management, More Effective Personnel, Easiness for accessing of creditable foreign banks to the system
Structural Improvement of competitive level	Liquidation Merging/Downsizing Active Management and Debt restructuring

Source: Dziobek C., Market Based Policy Instruments for Systemic Bank Restructuring, IMF Working Paper, 1998, p.13.

Banking restructuring instruments are divided into three main categories as financial, operational, and structural. In the first category, financial restructuring take place and it includes direct financial transfers against abruptly occurring problems in financial structures of banks. Operational restructuring taking place in the second category includes the actions regarding that banks are active more profitably and effectively, being managed well in institutional meaning. Structural restructuring, attracting attention problems at the sectorial level, aim to enable competition in the medium, in which banks are active, to be reformed.

Table 3: Costs and Their Share in Bank Restructuring

Its Costs to Bank Shareholders	Its Cost to Government (Financial and Half-Financial Costs)
Financial Instruments	
<ul style="list-style-type: none"> • Security Liabilities • Liabilities to government in future • Fresh Capital 	<ul style="list-style-type: none"> • Monetary transfer falls to the budget of central bank. • Off balance sheets rise.
Structural or Operational Aims	
<ul style="list-style-type: none"> • Bank owners may lose their shares. • Managers and personnel lose their jobs • Creditors and deposit owners may incur loss. • Higher deposits insurance premium can be brought to the banks. • For foreign banks to access to the system and managerial services, fee can be demanded. 	<ul style="list-style-type: none"> • Liquidation cost (e.g. court charges) • Unemployment compensation • Severance allowance to personnel of public bank • Budgetary transfer to deposits insurance fund • In merging, paying for price to the bank sold • Investment banking services for privatization • Budgetary distribution for management of actives • Price can be demanded for foreign banks to access to the system and

Source: Erdönmez, P., Brezilya’da Banka Yeniden Yapılandırması ve Kamu Bankalarının Özelleştirilmesi, 2001, p.17.

In restructuring banks, bank owners can also face to some costs. They can be obliged to bring extra capital and undertake some liabilities toward future regarding capital injection government will make or lose their shares. In addition, the managers and personnel of the banks in this scope can also lose their jobs.

Another important point, due to the fact that banking sector is a labor-intensive market, as a result of liquidations and merging to be carried in this sector, is that a decrease will be experienced in total employment. Since this sector has an important share in total employment, decrease of employment in the sector will be able to bring significant social costs to economy (Erdönmez, 2001: 31).

4. Turkish Banking Sector After Restructuring

In this process, it is seen that banks increasingly move away from mediation function that is their main duties and are active in the way that supports and facilitates public financing. In Turkey, the number of banks getting into act in 2010 is 49. 4 out of these are investment bank The total number of deposit banks that are 45 did not vary compared to the end of 2009. 32 of these banks are deposit banks and the remaining 13 banks are investment banks. 3 of

deposits banks are public- capital and 11 of them is private-capital bank. There is 1 bank within Savings Deposit and Insurance Fund (SDIF). The number of foreign -capital deposit banks, in which foreign dwellers have the share of 51% and over, is 17. 3 of development and investment banks are public-capital; 6, private-capital; and 4, foreign-capital banks (TBB,2011:27).

Table 4:Sectorial Shares of Groups (%)

	Total assets			Total deposits			Total credit		
	02	09	10	02	09	10	02	09	10
Deposit banks	96	97	97	100	100	100	89	96	97
Public banks	36	31	31	39	37	38	20	27	29
Private banks	56	52	52	58	50	50	65	52	52
Foreign banks	3	13	13	2	13	12	4	17	15
Investment and development bank	4	3	3	-	-	-	11	4	3
Total	100	100	100	100	100	100	100	100	100

Source: TBB, Bankalarımız 2010, (March 2011)

The share of actives of deposit banks in total has been 97% and the share of development and investment banks, 3%. In the group of deposit banks, the distribution of market share did not vary in terms of actives. In return to this, while the share of foreign-capital banks in total deposit, decreasing 1 point, regresses to 12%, share of public-capital banks, increasing 1 point, rose to 38%. In total credits, while total share of public banks rises to 29% from 27%, the share of foreign banks, decreasing 2 points, regressed to 15% (TBB,2011:30).

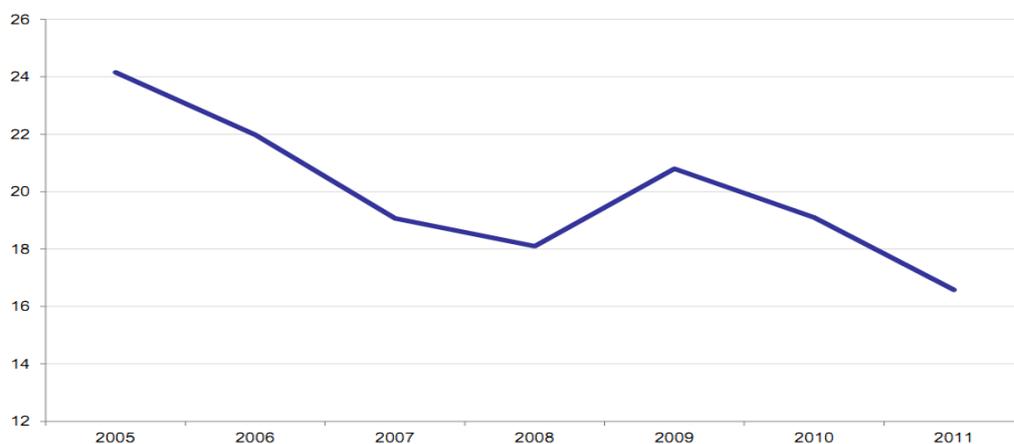
For enabling banks to work all over the world with common standards, in 1974, “Basel Committee” was formed within BIS. “Basel I Standards”, which is the first reconciliation regarding capital adequacy, were published in 1988. Basel I is focused on the minimum capital that is necessary to be kept to reduce to minimum the costs depositors will face in case that any bank is bankrupted; the working criteria banks have to comply with were determined; and, in order to increase the tolerability of banks against criteria, capital adequacy ratio, expressing that the rates of bank capital to risky actives cannot be less than 8% was introduced (Beşinci, 2005: 15). Due to the fact that the capital standard applied remains insufficient and is only based on credit risk, Basel II applications were proceeded.

In accordance with Basel II, the most important innovation brought in calculation of equity capital is IRB (Internal Rating -Based) approach determining risk weights, depending on debtor ratings internally calculated. In terms of capital provisions, Basel II Convention, was resulted with an explicit victory of two business areas; company loans and mortgages. For the former of these, capital easiness in important dimension (by 70 %) has been already provided in reviewed standard approach and, more explicitly, in IRB approach. It is necessary to search for this in the risk weight in Basel I Convention, which is very high and always 100%. In contrast to this, those using only IRB approach in mortgage area can be significantly benefit

from this capital easiness (by 65%), because in revised standard approach, risk weight is 50% as in Basel I TBB Raporu 2004:71).

Capital Adequacy ratio of Turkish Banks between the years of 2005 -2011 was shown in the following graphic. As seen, percent rate of capital adequacy ratio falls in crisis periods.

Graphs 1: Capital Adequacy Ratio (%)



In USA economy, the last global crisis, one of the biggest global crises, which began mortgage crisis and spread all over the world, and which occurred with the developments in the last period, and seemed to be extremely complicated and detailed, when regarded from outside, made a current issue the discussions of inadequacy of financial arrangements one time more. In order to eliminate the deficiencies global financial crisis occurred, in the recent time, the amendments of arrangements called Basel III have become a current issue. With draft reports introduced as Basel III, the targets that want to be reached can be summarized as follows:

- Whatever its resource is, raising the vulnerability of banking system against economic and financial shocks
- Implementation of institutional governance and risk management applications in banking sector
- Increasing the transparency of banks and functions of informing public with the arrangements introduced in micro scale, raising the tolerability of banks individually
- With arrangements in macro scale, raising the resistance of financial system against shocks (BDDK Sorularla Basel III,2010:1).

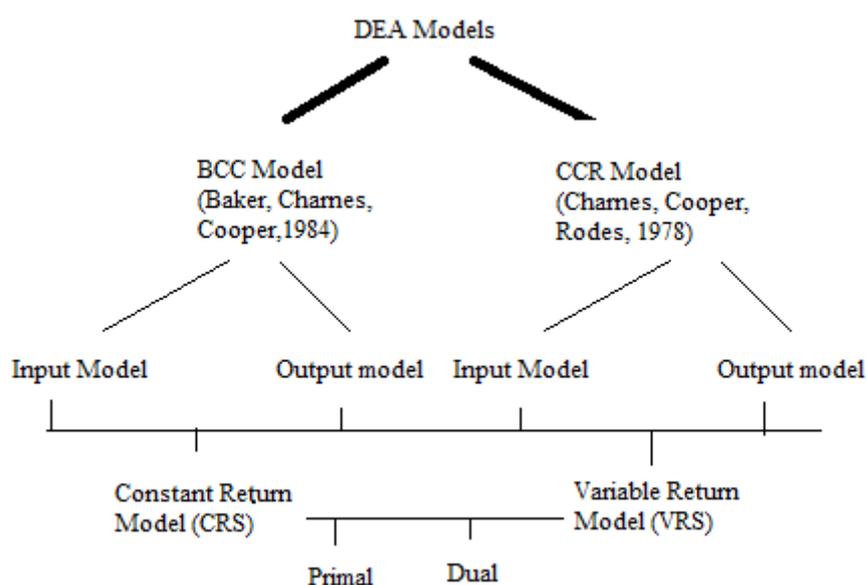
The points targeted with amendments of arrangement changes introduced as Basel III are: It was aimed that banks can be stand strongly with more qualified capital formation against crises In addition, the quantity of these capital ratios were also increased. It was targeted to form a capital buffer according to the direction of economic circles. As a result, with what is wanted to be presented with Basel III applications is to increase the tolerability of banks in banking sector, raising their liquidity ratios in the inadequate quality and price

5.Comparative Effectiveness Analysis of Banking Sector

In banking sector, in such a way that it will include either banks and all sector, it is a prevalent applications to realize performance assessment of all banks by using the various financial ratios.

Data Envelopment Analysis (DEA) is a linear programming based technique aiming to measure the relative performances of decision units in case that inputs and outputs, which were measured by scale, more than one, or which have the different measurement unit make it difficult to make a comparison. As the most simplest state, for a unit having a single input and output, effectiveness can be defined as output/input and, in the developed organizations, as total of weighed output/weighed input regarding the difference between input and output.

Figure 1: DEA Models



The main assumption of DEA in measuring total technical effects of decision units is the assumption of constant returns to scale (CRS) of decision units. When the literature is examined, in the studies on banking sector, it was also showed, in the study by Grifell-Tatje and Lovell (1995), that the use of output –oriented constant returns to scale (CRS) gave more appropriate results.

Table 5: Lists of Input and Output Variables

Inputs	Output
<ul style="list-style-type: none"> • Personnel expenses / total actives • Non-interest activity expenses / total actives • Total deposit / total activities • Non-deposit foreign resources / Total Actives 	<ul style="list-style-type: none"> • Total deposit / total actives • Interest incomes /Total actives • Security Portfolio Total actives • Non interest activity expenses / total actives

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6. Analysis Results

In the study, the results were obtained by EMS package program.

Table 6: Data Enveloping Analysis: CRC results

BANKS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
State-owned Deposit Money Banks										
<i>Türkiye Cumhuriyeti Ziraat</i>	0.856	0.992	0.980	1	1	1	1	1	1	1
<i>Türkiye Halk Bank</i>	0.976	0.865	0.834	0.899	0.905	1	1	1	1	1
<i>Türkiye Vakıflar Bank T.A.O.</i>	0.983	1	1	1	1	1	1	1	1	1
Private Bank Deposit Banks										
<i>Adabank</i>	0.845	0.703	0.769	0.745	0.827	0.901	0.870	0.924	0.941	0.981
<i>Akbank</i>	1	1	1	1	1	1	1	1	1	1
<i>Alternatif Bank</i>	0.850 0	0.956	0.888	0.967 7	1.067	0.906	1	1	1	1
<i>Anadolubank</i>	0.782	0.665	0.778	0.812	0.845	0.888	0.895	0.936	0.871	0.907
<i>Oyak Bank</i>	0.856	0.873	0.989	0.922	0.995	0.830	0.978	0.897	1	1
<i>Şekerbank</i>	0.706	0.858	0.863	0.954	1	1	1	1	1	1
<i>Tekfenbank</i>	0.712	0.645	0.758	0.662	0.850	0.933	0.905	0.922	1	1
<i>Tekstil Bankası</i>	0.917	0.882	0.807	0.877	0.904	0.965	0.825	0.862	0.938	0.897
<i>Turkish Bank</i>	0.716	0.788	0.834	0.844	0.843	0.902	0.988	0.904	0.912	0.942
<i>Turkland Bank</i>	0.685	0.703	0.702	0.704	0.808	0.823	0.887	0.888	0.941	0.962
<i>Türk Ekonomi Bank</i>	0.721	0.786	0.891	0.848	0.919	0.922	0.977	1	1	1
<i>Türkiye Garanti Bank</i>	0.906	1	1	0.997	1	1	1	1	1	1
<i>Türkiye İş Bank</i>	1	1	1	1	1	1	1	1	1	1
<i>Yapı ve Kredi Bank</i>	1	1	0.990	0.971	1	1	1	1	1	1
Foreign Banks Established in Turkey										
<i>Arap Türk Bankası</i>		0.816	0.888	0.834	0.944	0.943	0.902	0.988	1	1
<i>Citibank</i>		0.882	0.893	0.829	0.811	1	1	1	1	1
<i>Denizbank</i>	1	0.838	0.997	1	1	1	1	1	1	1
<i>Deutsche Bank</i>		0.801	0.867	0.932	1	1	1	1	0.980	0.992
<i>Finans Bank</i>	1	1	1	1	1	1	1	0.988	0.903	0.983
<i>Fortis Bank</i>		0.816	0.809	1	1	1	1	0.888	0.816	0.988
<i>HSBC Bank</i>	1	0.765	1	1	1	1	1	1	1	1
<i>Millennium Bank</i>		0.751	0.436	0.659	0.97827	1.0077	0.9708	0.851	0.934	0.963

In the table, the value “1” shows effective banks. The other numbers show non-effective banks. In general, public banks take place among the effective banks. Especially together with restructuring program, that capital support is provided to public banks; deposit interest is made complied with market interests; and that credit portfolio is effectively managed are the positive developments about this issue. In the years, when they are dealt with, it was identified that the most effective private banks were Akbank, Garanti Bank, and Yapı and Kredi Bank, which are large scale banks. Among these, it is clearly seen that scale size positively affects the effectiveness values.

Alternatif Bank, Şekerbank and Ekonomi Bank did not turn out before restructuring but they gained effectiveness in later periods. Tekfenbank and Oyakbank were found effective in the

last two years. Tekstil Bank, Turkish Bank and Turkland Bank did not turn out effective in any period. Among foreign banks established in Turkey, Millennium Bank is not effective in any period.

Citibank and gained effectiveness especially after 2005 and, HSBC Bank turned out effective in all periods other than 2003. Deutsche Bank, Finans Bank.,and Fortis Bank were negatively affected from global financial crisis and did not turn out effective.

As a result of DEA analysis, a point that attracts attention is that Turkish public and private banks are more effective compared to foreign banks. After crisis period, as a result of restructuring program, started in Turkish Banking System and continued non-interruptedly, the positive developments both were recorded from main sizes and banks performed their activities more effectively.

In the second stage, by means of Tobit regression analysis, the factors contributing the technical effective of banks were attempted to be identified. The appropriate independent variables were determined, reviewing literature. The aim here is to identify the relationship level and direction of these variables related to effectiveness analysis and, to interpret it by means of Tobit regression model First of all, correlation analysis was made for these variables; non-correlated variables were decomposed; and they were included in the model. Model analysis was carried out by means of *EViews 7.1* program and estimation was made by “The Huber/White Robust Covariance” algorithm. By means of this algorithm, the problem with heteroskedasity (disturbance of covariance) was solved.

Tobit Model, an extension of Probit model, was developed by James Tobin. The sample, in which the information belonging to dependable variable is under consideration for only some observations, is known as censored sample. Therefore, Tobit Model is also termed as censored or interrupted regression model (Gujarati,1999: 34).

Table 7:Tobit Regression Estimations

Year Variable	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Capital adequacy	0.0023*	.0891*	.4587*	.6462*	.0632*	0.2352*	0.9853*	0.8720*	0.7453*	0.5631*
Total Credits/ total assets	0.4750*	0.5818	0.6413	0.1058*	0.7479*	0.8402*	0.9561*	0.5748*	0.7863*	0.2110*
Liquid assets / short-term liabilities	0.4189*	0.8633*	0.1137*	0.2560*	0.4660*	0.9004*	0.8876*	0.2683*	0.9907*	0.3490*
Return on equity	0.9941*	0.2387*	0.1721*	0.3603*	0.2992*	0.4197*	0.2284*	0.650*	0.1456*	0.5731*
Interest and non- interest income	0.0025	0.0145	0.0008	0.0602	0.1137	0.0068	0.0009	0.0032	0.0563	0.0461
Constant	0.0065*	0.0053*	0.1381*	0.0086*	0.3979*	0.6234*	0.0985*	0.5834*	0.0456*	0.6754*

* variable that is statistically significant at the significance level of 0.05

In some periods,, the negative effect of capital adequacy ratio is resulted from the motive to strengthen and protect equity after Crisis 2001, in the direction of the decision made by Bank Supervision and Regulatory Board (BSRB) about capital adequacy, depending on that new activities come to an end and that BSRB worriedly approach implicit inflation policies of banking sector: But especially in the years of 2008 and 2009, effectiveness of capital ratio reveals how Turkish Banking System overcome liquidity crisis that is effective all over the world with its own equities and how much important capital adequacy ratio is for preparation for crisis period. In addition, in this period, due to the fact that that there is equity at high rate in return low risk weighted assets contradicts to the theory of “more risk and more return”, that low return of low risk –portfolio negatively affects technical efficiency is an unavoidable result.

That liquidity ratios, expressed as total credits/total assets and stating active quality, have a positive effect reveals that short term liabilities are financed by short term assets and that achievement in asset management is important to the effectiveness of banks.

The variable, defined as equity profitability ratio, as in the variable of total actives, has a passive effect on technical effectiveness. This result states that technical effectiveness profitability in the banks, whose profitability is high, will turn out low compared to the banks, whose technical effectiveness is high. That active quality of banking sector reaches more levels thanks to arrangements carried out led total actives to make positive effect on technical effectiveness.

That the ratio regarding expense structure, expressed as total of interest and non-interest incomes do not have a negative or positive effectiveness or do not express any value on the effectiveness of banks engender the conclusion that interest incomes banks obtain in the period of interest are not significant in total incomes and, in this period, that the income range of banking enlarges, and their incomes from operational activities are important.

Conclusion

In Turkey, banking sector forms the basis of financial system. The reason for this is that a large part of financial resources is collected and allocated by banks. Turkey faced to a national crisis in November 2000 and February 2001 and to a global crisis in the last quarter of 2007. Turkish Banking Sector exposed to the interest risk in November 2001 crisis and foreign currency risk in February 2001 and a large losses formed in the balance sheets of the banks. The crises experienced in the years of 2000 and 2001 revealed that an economy having structural problems in financial sector could not sustain fixed exchange rate regime. The twin crisis emerging in the form of the banking and monetary crisis showed that the structural problems in banking sector prepared a ground to the formation of crisis.

As will be understood from the publicity expression of the program of overcoming crisis in the form of strong banking and strong economy, presented to public opinion, the stability and soundness of banking sector has as high importance as financial discipline, sustainable borrowing, manageable foreign deficit, and correct exchange rate system. Therefore, in the transition period after 2000-2001, structural reforms enabling vulnerabilities toward banking sector, which play important role in the formation of crisis, to be eliminated have become the engine of economic growth and brought acceleration in the process of overcoming crisis.

The distance covered and political and economic stability in restructuring activities in banking sector have remarkably increased the interest of global capital. In 2001, while the share of global capital was 3%, in 2011, this number rose to 19%. Following Crisis 2001, the regressing personnel and branch numbers of banks showed increase in the period of 2000 and after it, in spite of global crisis. A total of actives of banking sector, which was TL 173.4 billion in 2001, thanks to the political and economic stability, provided after restructuring, rose to TL 732.5 billion in 2011 in spite of global crisis

After Crisis 2001, one of the most important lessons received has been the importance of maintaining strong capital structure. Capital adequacy ratio, which was 9.3% in 2000, rose to 18% in 2011. The policies applied and falls in market interest rates despite global crisis made a positive contribution to the profitability of Turkish banks, equities of banks strengthened, and depending on this, capital adequacy ratio of sector rose

In the study, after restructuring program, it was tried to be introduced how a development banking sector showed and how a stand it exhibited in terms of financial soundness especially over the global financial crisis 2007. For deposit bank in the sector, for the period of 2000-2011, applying output-oriented DEA, effectiveness levels after restructuring were determined. In effectiveness analysis of banking sector, in the determination of inputs and outputs, determining a common set from the main approaches such as mediation, production, and profitability, a mixed set of variables that is different from the other studies was formed and it was analyzed according to CCR method. When regarded to the results, especially in the period of global crisis, it was understood that the rate of Turkish banks to be more effective compared to foreign capital banks and that they took important step in the way that restructuring program reaches its aim. As a result of global crisis experienced, in Turkey, any bank was not seized and any resource transfer was not made. In Tobit regression analysis, made in the second stage, it was concluded that the main financial ratios – capital adequacy, liquidity and equity profitability - affecting banking sector were significant and income-expense ratios were not significant.

As a result of comparative effectiveness analysis we have carried out 25 deposit banks, at the end of restructuring the problematic actives that are effective on the efficiencies and effective of the banks and researching transparency in sector and full information share, studying the factors on bank profitability will introduce more useful results.

As a conclusion, this study introduces that after Crisis 2001, the decisions made and implemented in the leadership of Turkish Banking Regulation and Supervision Agency are correct in the long period; equity structure of banking sector is strong, that the success is provided in asset management; that liquidity is important; that the share of interest incomes in total activity incomes is not significant; and Turkish banking sector stands out continuity and compliance with legal arrangements, rather than targeting profitability.

REFERENCES

- Abbott M. ve Doucouliagos. C., (2003). The Productivity of Australian Universities: Data Envelopment Analysis, *Economics of Education Review*, 22(5), 54-67.
- Bağımsız Sosyal Bilimciler İktisat Grubu. (2001). Güçlü Ekonomiye Geçiş Programı Üzerine Değerlendirmeler, *İktisat, İşletme ve Finans*,185 (16), 7-47.

- Bayraktar Y., (2010), Kasım 2000- Şubat 2001 Krizi Sonrasında Alınan Önlemlerin Borç Kompozisyonlarına Yansımaları, *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, C.15, S.1 s.463-480.
- Beşinci, M., (2005). Basel Sermaye Yeterliliği ve Türk Bankacılık Sektörünün Basel II'ye Uyum Süreci, *Finans-Politik ve Ekonomik Yorumlar Dergisi*, Sayı: 498, 15-27.
- BDDK, Faaliyet Raporu 2001a-2001b
- BDDK, Banka Sermayelerinin Güçlendirilmesi Raporu, 2002.
- BDDK Yeniden Yapılandırma Raporu 2002
- BDDK, Faaliyet Raporu 2002
- BDDK, “Krizden İstikrara Doğru”, 2003.
- BDDK, Bankacılık Sektörü Yeniden Yapılandırma Programı Gelişme Raporu, 2003
- BDDK, Faaliyet Raporu 2003
- BDDK, Faaliyet Raporu 2004
- BDDK, Bankacılık Sektörü Yeniden Yapılandırma Programı Gelişme Raporu 2004
- BDDK, Faaliyet Raporu 2005
- BDDK, Faaliyet Raporu 2009
- BDDK Risk Bülteni, 2009.
- BDDK, Ekonomik Gelişmeler Raporu 2010.
- Diñçer, A.(2006), DPT, *Bankacılık Sektöründe Konsolidasyon, Ülke Deneyimleri ve Türkiye İçin Öneriler*, Ekim
- Dziobek, C., (1998). *Market Based Policy Instruments for Systemic Bank Restructuring*, IMF Working Paper No. 98/113, <http://www.imf.org/external/pubs/ft/wp/wp98113.pdf>, [23.11.2010].
- Erdönmez, P., (2001). Brezilya’da Banka Yeniden Yapılandırması ve Kamu Bankalarının Özelleştirilmesi, <http://www.tbb.org.tr/turkce/arastirmalar>, [18.09.2010].
- Gujarati, D., N. (2004). *Basic Econometrics*, 4. Edition, The Mcgraw–Hill Companies, New York.
- Keyder, N., (2001). Türkiye’de 2000-2001 Krizleri ve İstikrar Programları, *İktisat, İşletme ve Finans*, 16 (183), 23-45.
- TBB Yıllık Rapor, 2001
- TBB, Ekonomik Rapor 2001
- TBB Yıllık Rapor, 2003
- TBB Raporu 2004
- TBB Ekonomik Rapor 2010
- TBB Ekonomik Rapor 2011
- TCMB Ekonomik Rapor, 2002
- Uygur, E.,(2001). 2000 Kasım ve 2001 Şubat Krizleri Üzerine Değerlendirmeler, *Mülkiye Dergisi*, 15(227), 37-70.
- Yayla, M. and Kaya, Y. , (2005). *Basel II, Ekonomik Yansımaları ve Geçiş Süreci*, BDDK Yayınları, ARD Çalışma Raporları No: 2005/3.

Choosing the Right Employee: An Application of MAUT Method and Grey Relational Analysis on Academic Staff Selection Process

Çiğdem Özari, Istanbul Aydin University, cozari@gmail.com

Bekir Emre Kurtulmuş, Istanbul Aydin University, emrekurtulmus@aydin.edu.tr

ABSTRACT

In order to select the most appropriate alternatives during the employee selection process various decision-making approaches have been implemented in the related literature. Although many alternatives are qualitative in nature the scholars are also often engage in to the quantitative methods. In this paper, two well-known quantitative methods Multi Criteria Decision Techniques, Grey Relational Analysis and MAUT Method, have been examined. These two techniques are compared with each other by the use of Kendall's tau correlation coefficient in terms of effectiveness and accuracy that they provide. Using these techniques, the choice of the most suitable candidate could be selected more objectively than the sole application of qualitative techniques. These techniques can also be implemented simultaneously with other qualitative methods. The findings of this study show that in fact, Grey Relational analysis increases the likelihood of the chosen the right employee. Findings of the study proof that more comprehensive employee selection techniques can be utilized for the academic staff selection process.

KEYWORDS: Academic Staff Selection, Multi-Criteria Decision-Making (MCDM), MAUT Method, Grey Relational Analysis, Kendall's Tau.

1. Introduction

Successful decision-making within an organizational context depends on many different criteria. There are three main considerations during the selection process. These are, person-environment fit, person- organization fit and person-job fit (Sekiguchi, 2004). Traditionally related literature focus on person-job fit. However, the aforementioned others are also equally of the importance (Adkins, Russell & Werbel, 1994). There are also some other factors influencing the decision-making process such as, intuition (Miles & Sadler-Smith, 2014) in fact, people can be stubborn for their reliance on intuition (Highhouse, 2008). It has been established in the related literature that human being is not fully rationale in their selection process. Humans' decisions are cognitive processes that have two different and competing modes. The first mode is included to be cold, objective and analytical and the second mode comprises of to be subjective, hot and intuitive (Lieberman, 2007). Therefore, it is difficult to claim that the selection process is always rational and systematic and more importantly perhaps, fair.

It is partly because most of the time process mostly relies on qualitative approaches. The most popular of these approaches is to interviews. The problem in that as it is mentioned above it may get subjective and personnel factors can play roles including bias. Recently some alternative methods are discussed. One of these is the active use of social media for recruitment process (Roth, 2016). Nonetheless, in order to be fairer in the process quantitative

approaches are also started to appear. However, it is not entirely clear in the related literature that which one of these methods can be most suitable candidate. This study strives to identify the effectiveness of two quantitative approaches—MAUT method and Grey relational analysis—during the employee selection process.

2. Literature Review

2.1 Employee Selection Process

There are two main approaches on employee selection process. These are the psychometric and the social process approach (Bolander & Sandberg, 2013). The psychometric approach assumes that each job has discrete tasks and candidate and job can be assessed independently. Whereas social process approaches discuss that selection tools can be unreliable due to the relationship may establish between candidates and organization. Therefore, organization should focus on the relationship between organization and individual (Herriot, 1993). One of the most important reasons is why organizations should choose the right person is that to improve their capabilities and abilities to realize their strategic objectives (Sears, 2003; Gatewood, Field & Barreck, 2015).

One of the other important arguments in the related literature is that if person-environment or person-job fit is more valid for recruitment process. In that, it is discussed that the first of these aforementioned concepts based on integrationist theory of behavior. In this view the interaction between personal and situational variables is matter most as neither personnel nor environmental variables alone can determine the behavior and attitudes. Furthermore, in person- job fit the biggest variance come from the relationship between demand of job and abilities and skills that candidates offer. This is the method that traditionally established as a first choice for employee selection method (Sekiguchi, 2004).

However, organizations cannot always objectively approach to selection process. This is because there is a significant role that individuals play during the decision-making process. Despite the fact that assisting decision making tools available for a long time yet organizations still resist to implement them for the purpose of employee decision making process (Highhouse, 2008). In fact, managers most often put faith in their ability to understand the candidates' qualities rather than relying readily available tools (Miles & Sadler-Smith, 2014). One of the most difficult things is to convince recruitment expert is to implement and use readily available tools. The main problem about these tools not to be implemented is that intuition is strongly defended and relied by managers (Highhouse, 2008).

2.2 Multi Criteria Decision Techniques

2.2.3 MAUT Method

MAUT method keeps in view the preferences in the form of the utility function, which is indicated over a set of attributes (Pohekar, Ramachandran, 2004). Utility function quantifies the preferences by assigning a numerical index to varying levels of satisfaction of a criterion (Mustafa, Ryan, 1990). For a single criterion (X), the utility of satisfaction of a consequence x' is denoted by $u(x')$. The utility is measured as the sum of the marginal utilities (Figuroa, Greco, Ehrgott, 2005). In this method, both quantitative and qualitative criteria can be used.

MAUT method is used both discrete and continuous alternative problems. Discrete type alternative problems include a set of limited alternatives. Continuous alternative problems also called multiple optimization problems, which consist of number of infinitely many alternatives (Wallenius, J. et. al., 2008). The most common method of multi criteria utility function is the additive model (Keeney, Raiffa, 1993). In this article, this technique is used additively separable with respect to single attribute utility.

$$U_i = \sum_{j=1}^m w_j U_{ij} \text{ for all } i$$

where

U_i : Utility value (overall) of alternative i

U_{ij} : Utility value for the alternative of i (criteria for the j)

n : Total number of criteria

m : Total number of alternatives

MAUT method includes six important steps (Alp i. et.al., 2015);

Step 1: Construct the decision matrix

Determine the criteria (C_1, C_2, \dots, C_n) and alternatives

Step 2: Calculate weight of each criteria: $w_i, \sum_{i=1}^m w_i = 1$.

Step 3: Construct the normalized decision matrix

Step 4: Calculate utility values;

$$\text{For criteria to be maximized: } u_i(x_i) = \frac{x - x_i^-}{x_i^+ - x_i^-}$$

$$\text{For the criteria to be minimized: } ui(x_i) = \frac{x_i^+ - x}{x_i^+ - x_i^-}$$

where

x_i^+ = the best value of the alternatives

x_i^- = the worst value of the alternatives

Step 5: Calculate total utility

$$U_i = \sum_{j=1}^m w_j U_{ij} \text{ for all } i.$$

Step 6: Rank the alternatives according to total utility values (greater utility values are better alternatives).

2.2.4 Grey Relational Analysis

Grey relational analysis (GRA) is part of grey system theory proposed by Deng (1982), and is suitable for solving problems with complicated interrelationships between multiple factors and variables (Morán et al. 2006).

Step 1: Construct the decision matrix: $X_{n \times m}$

$$X_{n \times m} = [X_{ij}] = \begin{bmatrix} x_{11} & x_{12} & x_{13} & \dots & x_{1m} \\ x_{21} & x_{22} & x_{23} & \dots & x_{2m} \\ \dots & \dots & \dots & \dots & \dots \\ x_{n1} & x_{n2} & x_{n3} & \dots & x_{nm} \end{bmatrix},$$

where, m : number of criteria and n number of alternatives

Step 2: Construct the Reference Sequence $[RS]=RS_{1 \times m}$

$$[RS] = [RS_{11} \quad RS_{12} \quad \dots \quad RS_{1(m-1)} \quad RS_{1m}]$$

In this step, considering all the alternatives an ideal target has to be defined.

Step 3: Construct the normalized decision matrix: $N_{n \times m}$

In this step, the values of any alternative have to be normalized and this means that all values are transformed to values between 0 and 1. According to Fung (2003), the normalization can

be made in four different ways. Three ways can be explained with the help of the structure of the criteria. If researcher want to maximize the value of the criteria that means if the value of this criteria is greater the better, use (1).

$$x_{ik}^* = \frac{x_{ik} - \max\{x_{11}, x_{21}, x_{31}, \dots, x_{n1}\}}{\max\{x_{11}, x_{21}, \dots, x_{n1}\} - \min\{x_{11}, x_{21}, \dots, x_{n1}\}} \quad (1)$$

If the value of criteria is smaller the better, use (2).

$$x_{ik}^* = \frac{\min\{x_{11}, x_{21}, x_{31}, \dots, x_{n1}\} - x_{ik}}{\max\{x_{11}, x_{21}, \dots, x_{n1}\} - \min\{x_{11}, x_{21}, \dots, x_{n1}\}} \quad (2)$$

If there is a target value or an ideal value for the criteria, use (3).

$$x_{ik}^* = 1 - \frac{|x_{ik} - x_{idealk}|}{\max\{\max\{x_{11}, x_{21}, \dots, x_{n1}\} - x_{idealk}, x_{idealk} - \min\{x_{11}, x_{21}, \dots, x_{n1}\}\}} \quad (3)$$

where x_{ideal} is the ideal value for the related criteria

Step 4: Construct the difference matrix: $M_{n \times m}$

By subtracting the reference series from the normalized decision matrix, the difference matrix is obtained.

$$\begin{bmatrix} M_{11} & M_{12} & M_{13} & \dots & M_{1m} \\ M_{21} & M_{22} & M_{23} & \dots & M_{2m} \\ \dots & \dots & \dots & \dots & \dots \\ M_{n1} & M_{n2} & M_{n3} & \dots & M_{nm} \end{bmatrix} = \begin{bmatrix} |rs_{11} - N_{11}| & |rs_{12} - N_{12}| & |rs_{13} - N_{13}| & \dots & |rs_{1m} - N_{1m}| \\ |rs_{21} - N_{21}| & |rs_{22} - N_{22}| & |rs_{23} - N_{23}| & \dots & |rs_{2m} - N_{2m}| \\ \dots & \dots & \dots & \dots & \dots \\ |rs_{n1} - N_{n1}| & |rs_{n2} - N_{n2}| & |rs_{n3} - N_{n3}| & \dots & |rs_{nm} - N_{nm}| \end{bmatrix}$$

Step 5: Calculation of Grey Relational Coefficient Matrix: $G_{n \times m}$

$$G_{ij} = \frac{\Delta min + \vartheta \Delta max}{M_{ij} + \vartheta \Delta max}$$

where ϑ is distinguishing coefficient and takes a value in the range of [0,1].

Step 6: The calculation of degree of relation

For each alternative assume the grey relational coefficients are discrete random variables according to the weights of each criteria and calculate expected value of each alternative. These expected values are degree of relation.

3. Application

In this paper, three main criteria namely work factors, academic factors and individual factors are chosen to select the suitable (right) employee. Work factors include four main criteria such as GRE score, foreign language, GPA and presentation. Academic factors include again 4 sub-criteria that measures the teaching and research skills of any academic staff such as if they have any teaching experience and have any administrative experience. The other 2 sub-criteria of the academic factor can be thought as the criteria that determine up to date knowledge of candidates. Individual factors include three main criteria such as age, self-confidence and compatibility. Table 1 illustrates the information of all the criteria with their definition.

Table 1: Criteria' of Academic Staff Selection Problem

	Criteria	Definition
Work Factors	C ₁	GRE Score
	C ₂	Foreign Language
	C ₃	GPA
	C ₄	Presentation
	C ₅	Teaching Experience

Academic Factors	C ₆	Administrative Task Experience
	C ₇	Research Paper
	C ₈	Team Work
Individual Factors	C ₉	Self Confidence
	C ₁₀	Compatibility
	C ₁₁	Age

We randomly create 20 academic staff information that we want to rank from best to worst to choose the right one. In other words, in this study alternatives can be thought as potential candidates. For the MAUT method the weights were assumed to be equally distributed. As a first step we changed the raw values to normalized values by using maximizing and minimizing and the results are shown in Table 2.

Table 2: Normalized Matrix: Equally Weighted, MAUT Method

	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁
A ₁	0.00	0.50	0.50	0.00	1.00	0.50	0.40	0.14	0.50	0.00	0.52
A ₂	0.25	0.25	0.75	0.50	0.25	0.50	0.60	0.00	0.50	0.25	0.62
A ₃	0.50	0.50	0.25	0.50	0.33	0.50	0.80	0.29	0.75	0.50	0.45
A ₄	0.75	0.25	0.50	0.75	0.58	0.75	1.00	0.43	0.25	1.00	0.00
A ₅	0.50	0.00	0.75	0.50	0.42	1.00	0.60	0.29	0.50	0.00	0.93
A ₆	1.00	0.25	0.00	0.75	0.83	0.25	0.40	1.00	0.75	0.75	0.24
A ₇	0.25	0.50	0.25	0.50	0.00	0.00	0.00	0.29	0.00	1.00	0.86
A ₈	0.50	0.50	0.50	1.00	0.67	0.50	0.20	0.14	1.00	0.25	1.00
A ₉	0.25	0.75	1.00	0.75	0.17	0.75	0.40	0.00	0.25	0.75	0.90
A ₁₀	0.00	0.75	1.00	0.50	0.08	0.00	0.60	0.29	0.50	0.25	0.52
A ₁₁	0.25	1.00	0.50	0.25	0.17	0.00	0.80	0.43	0.25	0.00	0.59
A ₁₂	0.50	0.00	0.25	0.50	0.25	0.00	1.00	0.29	0.75	1.00	0.55
A ₁₃	0.75	0.25	0.00	0.00	0.33	0.50	0.60	0.14	1.00	0.00	0.10
A ₁₄	0.00	0.50	0.25	0.25	0.42	0.75	0.80	0.29	1.00	0.75	0.07
A ₁₅	0.25	0.75	0.50	0.75	0.50	0.75	1.00	0.43	0.00	0.00	0.62
A ₁₆	0.50	0.25	0.75	0.50	0.25	0.50	0.20	0.14	0.25	1.00	0.72
A ₁₇	0.75	1.00	1.00	0.50	0.33	0.75	0.40	0.14	0.50	0.00	0.79
A ₁₈	1.00	0.00	0.75	0.75	0.25	0.25	0.00	0.43	0.25	0.50	0.83
A ₁₉	0.00	0.25	1.00	1.00	0.33	0.00	1.00	0.57	0.75	0.00	0.93
A ₂₀	0.25	0.50	0.00	0.00	0.42	0.50	0.20	0.14	0.00	0.25	0.90

In the second step, normalized values have been multiplied by the importance level (weight) of each criteria and by the help of these values total utility values have been calculated.

Table 3: Total Utility Values: Equally Weighted, MAUT Method

	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁	Total Utility
A ₁	0.00	0.05	0.05	0.00	0.09	0.05	0.04	0.01	0.05	0.00	0.05	0.37
A ₂	0.00	0.13	0.38	0.00	0.25	0.25	0.24	0.00	0.25	0.00	0.32	1.81
A ₃	0.13	0.13	0.19	0.25	0.08	0.25	0.48	0.00	0.38	0.13	0.28	2.28
A ₄	0.38	0.13	0.13	0.38	0.19	0.38	0.80	0.12	0.19	0.50	0.00	3.18
A ₅	0.38	0.00	0.38	0.38	0.24	0.75	0.60	0.12	0.13	0.00	0.00	2.97

A ₆	0.50	0.00	0.00	0.38	0.35	0.25	0.24	0.29	0.38	0.00	0.22	2.60
A ₇	0.25	0.13	0.00	0.38	0.00	0.00	0.00	0.29	0.00	0.75	0.21	1.99
A ₈	0.13	0.25	0.13	0.50	0.00	0.00	0.00	0.04	0.00	0.25	0.86	2.15
A ₉	0.13	0.38	0.50	0.75	0.11	0.38	0.08	0.00	0.25	0.19	0.90	3.65
A ₁₀	0.00	0.56	1.00	0.38	0.01	0.00	0.24	0.00	0.13	0.19	0.46	2.97
A ₁₁	0.00	0.75	0.50	0.13	0.01	0.00	0.48	0.12	0.13	0.00	0.30	2.42
A ₁₂	0.13	0.00	0.13	0.13	0.04	0.00	0.80	0.12	0.19	0.00	0.32	1.85
A ₁₃	0.38	0.00	0.00	0.00	0.08	0.00	0.60	0.04	0.75	0.00	0.06	1.91
A ₁₄	0.00	0.13	0.00	0.00	0.14	0.38	0.48	0.04	1.00	0.00	0.01	2.17
A ₁₅	0.00	0.38	0.13	0.19	0.21	0.56	0.80	0.12	0.00	0.00	0.04	2.42
A ₁₆	0.13	0.19	0.38	0.38	0.13	0.38	0.20	0.06	0.00	0.00	0.45	2.27
A ₁₇	0.38	0.25	0.75	0.25	0.08	0.38	0.08	0.02	0.13	0.00	0.57	2.88
A ₁₈	0.75	0.00	0.75	0.38	0.08	0.19	0.00	0.06	0.13	0.00	0.66	2.99
A ₁₉	0.00	0.00	0.75	0.75	0.08	0.00	0.00	0.24	0.19	0.00	0.77	2.79
A ₂₀	0.00	0.13	0.00	0.00	0.14	0.00	0.20	0.08	0.00	0.00	0.83	1.38

A₉ is the best candidate and A₁ is the worst candidate for the equally weighted MAUT method and Table 4 illustrates ranking of potential candidates from best to worst with their total utility.

Table 4: Ranking MAUT Method

Ranking	Alternatives	Total Utility	Ranking	Alternatives	Total Utility
1	A ₉	3.65	11	A ₃	2.28
2	A ₄	3.18	12	A ₁₆	2.27
3	A ₁₈	2.99	13	A ₁₄	2.17
4	A ₁₀	2.97	14	A ₈	2.15
5	A ₅	2.97	15	A ₇	1.99
6	A ₁₇	2.88	16	A ₁₃	1.91
7	A ₁₉	2.79	17	A ₁₂	1.85
8	A ₆	2.60	18	A ₂	1.81
9	A ₁₅	2.42	19	A ₂₀	1.38
10	A ₁₁	2.42	20	A ₁	0.37

For the right academic staff selection problem we thought that some of the criteria does not need to be a maximum or minimum value, they need to take an optimum value. The criteria's which we assumed to take an ideal value are criteria's such as age. These are C₁, C₂, C₃, C₉ and C₁₀ and the results of this analysis is illustrated in Table 5.

Table 5: Grey Relational Analysis: Maximum-Optimum

Ranking	Alternative	Coefficient	Ranking	Alternative	Coefficient
1	A ₂₀	0.62	11	A ₁	0.53
2	A ₃	0.60	12	A ₁₄	0.52
3	A ₅	0.59	13	A ₄	0.52
4	A ₈	0.58	14	A ₉	0.50
5	A ₁₅	0.57	15	A ₁₈	0.49
6	A ₁₂	0.56	16	A ₁₇	0.48

7	A ₂	0.56	17	A ₁₀	0.46
8	A ₁₉	0.55	18	A ₁₁	0.46
9	A ₆	0.55	19	A ₇	0.45
10	A ₁₆	0.55	20	A ₁₃	0.41

According to GRA, A₂₀ is the best candidate and A₁₃ is the worst candidate. However, we want to compare the results of two methods, to do it in an accurate way, we again rank the potential candidates with grey analysis and considered as the criteria's should take maximum or minimum values only and the results of this analysis is illustrated in Table 6.

Table 6: Grey Relational Analysis: Max-Min

Ranking	Alternative	Coefficient	Ranking	Alternative	Coefficient
1	A ₈	0.63	11	A ₁₈	0.54
2	A ₁₉	0.63	12	A ₁₆	0.54
3	A ₆	0.61	13	A ₃	0.51
4	A ₄	0.60	14	A ₇	0.50
5	A ₁₇	0.59	15	A ₁₀	0.50
6	A ₉	0.59	16	A ₂₀	0.50
7	A ₁₂	0.57	17	A ₁₁	0.49
8	A ₅	0.56	18	A ₁₃	0.49
9	A ₁₄	0.55	19	A ₁	0.48
10	A ₁₅	0.54	20	A ₂	0.48

From Table 6, it can be easily seen that A₈ is the best candidate and A₂ is the worst candidate. To compare the results of two methods Kendall rank correlation coefficient were used. This coefficient was developed as nonparametric measure of the association between two variables based on the number of concordances and discordances in paired observations.

Table 7: Results of GRA and MAUT Method

Potential Candidate	GRA	MAUT	Potential Candidate	GRA	MAUT
A ₁	19	20	A ₁₁	17	10
A ₂	20	18	A ₁₂	7	17
A ₃	13	11	A ₁₃	18	16
A ₄	4	2	A ₁₄	9	13
A ₅	8	5	A ₁₅	10	9
A ₆	3	8	A ₁₆	12	12
A ₇	14	15	A ₁₇	5	6
A ₈	1	14	A ₁₈	11	3
A ₉	6	1	A ₁₉	2	7
A ₁₀	15	4	A ₂₀	16	19

GRA and MAUT columns of Table 7 are the variables that we want to determine the level of concordance and the value of the coefficient is 0.3579.

4. Conclusion

The right employee selection is a difficult and old problem to handle and can be considered as multi-criteria decision making process. The most crucial features of this process is uncertainty. As explained before, we aimed to choose the most suitable candidate or employee for a certain position and in this study as an application two methods -GRA and MAUT- had been used to select the most eligible academic staff.

The orders of two methods thought as two variables and the concordance between these variables was calculated and we found weakly positive concordance. If we can found highly positive concordance, we can suggest that for selection problem you can use one of the method instead of the other one. As for future work, it is suggested that other multi-criteria decision making process approaches such as TOPSIS, ELECTRE, Fuzzy TOPSIS be applied and compared in academic staff selection

REFERENCES

- Adkins, C. L., Russell, C. J., & Werbel, J. D. (1994). Judgments of fit in the selection process: The role of work value congruence. *Personnel Psychology*, 47(3), 605-623.
- Bolander, P., & Sandberg, J. (2013). How employee selection decisions are made in practice. *Organization Studies*, 34(3), 285-311.
- Deng, Z. (1982). Fuzzy pseudo-metric spaces. *Journal of Mathematical Analysis and Applications*, 86(1), 74-95.
- Figuroa, J., Greco, S., & Ehrgott, M. (2005). Multiple Criteria Decision Analysis.
- Fung, C. P. (2003). Manufacturing process optimization for wear property of fiber-reinforced polybutylene terephthalate composites with grey relational analysis. *Wear*, 254(3), 298-306.
- Gatewood, R., Feild, H. S., & Barrick, M. (2015). *Human resource selection*. Nelson Education.
- Herriot, P. (1993). A paradigm bursting at the seams. *Journal of Organizational Behavior*, 14(4), 371-375.
- Highhouse, S. (2008). Stubborn reliance on intuition and subjectivity in employee selection. *Industrial and Organizational Psychology*, 1(3), 333-342.
- Keeney, R. L., & Raiffa, H. (1993). *Decisions with multiple objectives: preferences and value trade-offs*. Cambridge university press.
- Lieberman, M. D. (2007). Social cognitive neuroscience: a review of core processes. *Annu. Rev. Psychol.*, 58, 259-289.
- Miles, A., & Sadler-Smith, E. (2014). "With recruitment I always feel I need to listen to my gut": the role of intuition in employee selection. *Personnel Review*, 43(4), 606-627.
- Moran, J., Granada, E., Míguez, J. L., & Porteiro, J. (2006). Use of grey relational analysis to assess and optimize small biomass boilers. *Fuel Processing Technology*, 87(2), 123-127.
- Mustafa, M. A., & Ryan, T. C. (1990). Decision support for bid evaluation. *International Journal of Project Management*, 8(4), 230-235.
- Pohekar, S. D., & Ramachandran, M. (2004). Application of multi-criteria decision making to sustainable energy planning-a review. *Renewable and sustainable energy reviews*, 8(4), 365-381.
- Roth, P. L., Bobko, P., Van Iddekinge, C. H., & Thatcher, J. B. (2016). Social media in employee-selection-related decisions: A research agenda for uncharted territory. *Journal of Management*, 42(1), 269-298.
- Rouyendegh, B. D., & Erkan, T. E. (2013). An application of the fuzzy electre method for academic staff selection. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 23(2), 107-115.
- Sears, D. (2003). *Successful talent strategies: Achieving superior business results through market-focused staffing*. AMACOM Div American Mgmt Assn.
- Sekiguchi, T. (2004). Person-organization fit and person-job fit in employee selection: A review of the literature. *Osaka keidai ronshu*, 54(6), 179-196.
- Wallenius, J., Dyer, J. S., Fishburn, P. C., Steuer, R. E., Zionts, S., & Deb, K. (2008). Multiple criteria decision making, multiattribute utility theory: Recent accomplishments and what lies ahead. *Management science*, 54(7), 1336-1349.

Ottoman Price System in the Period of 1800-1850: Comparative Price Movements of Istanbul and Konya Cities

Perihan Hazel Kaya, Asst.Prof.,Selcuk University, perihaner@selcuk.edu.tr

ABSTRACT

Ottoman Empire has constituted the economic politics within the framework of the principles of provisionalism, fiscalism and traditionalism which came from the classical economic view. Among the most important purposes of adopting these principles are to increase employment, production and welfare, to maintain price stability, to ensure justice, to meet public needs and to prevent exploitation. It is aimed that the produced goods and services are abundant, cheap and in the market in terms of meeting the needs of the people according to the principle of provisionism and in this direction price (narh) system was applied. The narh system constitutes the basis of the Ottoman price policy and it is determined according to supply and demand conditions. In the price system, the state ordered the sale of goods for a certain price and forbid selling it up or down from the specified price. The government has adopted in determining the prices the principle of ensuring the prosperity of the people and not damaging the tradesmen and producers.

Istanbul had importance for Ottoman Empire, both as a official and political capital and with its crowded population, its economic opportunities and trade center throughout the centuries. Konya was the pasha sanjak of Karaman province and an important settlement with an agricultural and husbandry, large artisan group, timar, fief and tax incomes among the provincial cities in Ottoman Empire. The aim of this study is to examine implementation of Ottoman price system in the centre (Istanbul) and province (Konya) comparatively within the frame of the basic economic principles of state. In this direction firstly, touched on the functioning of social and economic life in the Ottoman State in the first half of the 19th century then implementation of price system on the artisan group operating in Konya and Istanbul is evaluated.

KEYWORDS: Ottoman Empire, Istanbul, Konya, Price System, 1800-1850 Period, Provisionism

Introduction

Ottoman State, beginning from the period, when it was founded, especially in 15th and 16th Centuries, made a war to control the trade routes. In the direction of this aim, in 17th and 18th centuries, integrating into world economy, it became an empire importing industrial products and exporting raw material. In terms of world economy, due to the factors such as production boom, technological developments, and fast production tools industrial revolution leads to, 19th Century is a century, in which nations got their economic relationships climbed to the top levels. However, Ottoman State, traditionally preventing the capital from accumulating in certain hands in this period, did not want to allow for such an internal formation. Moreover, beginning from the first half of 19th Century, that trade routes became shorter due to construction of steam-ships made inroads on caravan routes

passing through the Ottoman lands and Ottomans both fell into an idle state from commercial point of view and gradually became a good customer of the large states, which completed industrial revolution.

Traditional Ottoman policy of export was in a *provisionist* structure. According to the principle of provisionism, the aim of economic activities is to meet the needs of people. That the goods and services produced are abundant, high quality, and cheap as far as possible is the main target wanted to be achieved. As a requirement of provisionism policy carried out, Ottoman administrators signed, apart from applying mercantilist policies of Europe, the policies that are full opposite to mercantilist premises. For abundance of goods in the country, import was supported and export was generally impeded or forbidden. Therefore, as a requirement of the principle provisionism, government adopted interventionism strictly carried out on production and trade, in order to make abundant the supply of goods, raise quality, and keep the prices low.

In addition, state, with the method of monopoly, could impose monopoly on the purchase and sale of product. In the framework of this principle, first of all, the needs of town, in which production activities are carried out, are removed and, the remaining amount is allocated to the needs of the Istanbul capital and army. If the product again remains, after paying for the certain taxes, it is allowed for these products in the countries to be taken the regions and cities in the country, in which these products are needed.

Until Tanzimat, foreign trade was carried out with the provisionist and fiscalist concerns of the government and in the light of principles determined by capitalism. 1838 Baltalimanı Treaty, an important stage of capitalism, is the most basic factor of that treasury of Ottoman State gets stuck and that the existing trade medium in Ottomans radically changes. Between 1838-1846, the other European countries, with which trade agreement is made, had the same privileges with those of England. The demand of Europe to Ottoman raw materials was always more due to the fact that some part of the products does not grow in Europe; that some part of them has high quality advantage, and that almost all of them is cheap. In pre-1838 period, since foreign merchants agree with paying more money for the goods than their domestic goods, there was also smuggling. However, following 1838 Treaty, foreign merchant had the same right with local merchant in the purchase and sale of every kind of goods. Together with this treaty, the subsistence structure of Ottoman agriculture was solved, classical provisionist Ottoman economic order became monetarist, self-sufficient Ottoman economies were opened to foreign market. For providing social welfare, which is one of the main principles of Ottoman administration system, one of the necessary main conditions is price supervision. In Ottoman system, the most important element that provides price stability is monetary regime. For Ottoman trade activities, in which metallic currencies i.e. the gold and silver are used as medium of exchange, to actualize and market to run, that the currency is present in the market in such a way that it will respond to exchange need is a state always taken care by Ottoman administration.

Ottoman State, in order to provide price stability, determining the minimum and maximum price via *narhs*, tried to prevent the excessive price falls and rises. While Ottoman State, on the one hand, tried to provide price stability, via price control (*narh*

system), on the other hand, with provisionism policy, among economic principles of government, took care of protecting social order; supplying goods and services that are used in meeting needs as abundant, high quality, and cheap and, in addition, continuation of production.

The aim of this study, generally evaluating Ottoman price system, on the one hand, is to deal with the effect of the events experienced in the first half of 19th century on the price and, on the other hand, the differences in the prices together with their reasons in the context of central and back country administration. In this direction, firstly, the general functioning of Ottoman price system was examined. After the state's determining ordinary and extraordinary price were evaluated, the price movements of Istanbul and Konya cities were evaluated in order. Finally, the differences in prices were explained together with their reasons and the study was ended.

1. The General Functioning of Ottoman Price (Narh) System

Ottoman State, in order to maintain the welfare of people, tried to keep under control every stage from production to consumption. Hence, narh is a result of this supervision chain. In other words, due to imperfect competition, in order to impede monopolist tendencies that form, the aim of Ottoman narh application, which takes main measurement the supply and demand conditions, is to protect the long term interests of both producers and consumers

Narh application in Ottoman State begins after Fatih conquers Istanbul in 1453 and continues until the end of 1860s. Liberalization movements, which began with the second half of 18th century, and especially in the period of Selim III., impeded narh application. The thoughts in the direction of liberalization led slowly to be solved in the prices and, while these prices solved prompted the consumer to uneasiness, they left the producer and merchant applying narh in difficult condition. In the face of this dilemma, in 1795, Cereal Treasury was implemented and in the same year, cereal prices and sales were released. These liberalization movements impeding narh application proceeded more with 1838 Baltalimanı Treaty (Öztürk, 1998:16).

In Ottoman State, determining price (setting narh) is the duty of local kadi (Muslim Judge). Kadi, before setting narh, takes the necessary information from Ottoman constabulary, who knows market prices the best and, while determining the prices, he interviews with the relevant group of craftsman. After this stage, bringing together chamberlains and yigitbaşı of craftsman associations, he determines the new prices after he identified the amount of raw material to be used in the product of interest and cost and added profit margin (10 -15%) (Kütükoğlu, 2006:390-391). After determining the price of goods, craftsman committed that he will not sell more or less this price and lists were recorded into registrations and new prices were announced. Controlling whether or not the prices announced was complied with Ottoman constabulary was performed by Ottoman constabulary (Sahillioğlu, 1979:38-39).

Ottoman State targeted to prevent unfair competition, unemployment, excessive production, and black market and to control goods distribution in domestic market. On the other hand, it was paid attention that prices have to be stable and goods, high quality and in

compliance with standards. For this aim, it is wanted the products first of all to be sold in the places, where they are produced. Forbidding that these products are taken to the other regions, where the prices are higher, the right to buy and sell the certain goods were recognized for certain group of craftsman (Tabakoğlu, 2005:139-149).

In Ottomans, narhs are set in two conditions as ordinary and extraordinary.

1.1.Ordinary Narhs

In the periods, in which economic activities are intensified, it was necessary to set narh. The period of slaughtering causes mobilization in meat market. Therefore, meat narh was set before a few days before slaughtering and, if necessary, price setting was again done (Öztürk, 1998:863).

Seasonal narhs pointed out the prices set on food products. The prices of meat, milk, and their products in the summer and winter months were different. The prices of vegetables and fruits were also set according to the seasons. While the product is in field, although narh can be set with intervals a few days or every day, after the product becomes abundant, until the season of early grown, any variation did not occur and again narh was again set in early grown product (Aydüz,1990:70-93).

After grain for threshing, when new product of wheat, bread price was again determined. Since the bread is the most important food product, its prices was determined according to the sort of flour in it. The amount and value of raw material used in the determination of the prices of such finished products were considered. Again, the values of valuable clothes was determined by the same method. In the month Ramazan, a regulation was done in the prices of the main food products. For, in Ramazan, month of religious fasting, the necessary actions were taken for the people to spend this month in peace. Intervening prices before Ramazan and keeping excessive price movement at a certain level had been the major target of government (Kütükoğlu,2006:390).

1.2.Extraordinary Narhs

While the prices form, they are under the effect of a number of factors. Of these factors, the most determinatives ones are the amounts of supply and demand. However, production amount, production and transportation costs, trade policies, monetary system, economic conjuncture prevailing in the world, coin (sikke) adjustments, monopolist groups, custom regime, wars, embargos and blockades, smuggling activities, population movements, epidemics, famines, and meteorological events are counted the major factors affecting prices (Ülgener, 2006:90-103). Therefore, other than ordinary narhs, narh is applied in extraordinary i.e. non-natural conditions.

Customs applied in domestic and foreign trade is considered as a factor affecting the costs of goods. Ottomans, organizing the major trade centers in the forms of customs region, within the system “mukataa” and “tax farming”, receive certain amount of tax through goods transported via land and sea route (Öztürk, 1996:224-226).

Money, which is inseparable part of prices in persistence of states has a crucial role in sustaining stability (Kütükoğlu, 1983:11-12). When the value of money rose, product prices were also lowered. But, in the periods of large devaluation, when setting of money falls

into decay, since the prices also rise, in the narhs applied after coin adjustments, the fall rates in the prices differed from goods to goods. Other than these, due to reasons of preventing black market and public interest, narh was set (Aydüz, 1990:73-74).

In Ottoman economy based on metallic currency system, debasements the government referred to as a financing method from time to time affect prices. For example, that the burden the reforms realized in the period of Mahmut II brought to government budget was attempted to be removed by debasement method, reducing silver content of money much more, beginning the first half of the century made an effect blowing inflation (Pamuk, 2007:16-17).

When reached the late 1830s, as a result of debasements carried out, that many coins different from each other are issued disturbs international trade with daily transactions. As a result of this case, a coin reform was needed. Thus, transition to a double-metal order consisting of gold lira and silver kurus was decided. After performing the necessary preparations, it was considered that new gold and silver coins were issued as constant value of 1 Lira = 100 Kurus. Finally, by fixing the rate of gold-silver of new coins in 15.09, gold coins started to be produced in 1843 and silver coins in 1844. Beginning from 1844, ending debasements, until 1922, all gold and silver coins issued by Ottoman State abided to standards determined in 1844 (Pamuk, 2005:225-26).

Amount of population is one of the most important variables determining demand, An immediate increase in population, due to the fact that the production, which cannot be increased in short term, remains insufficient, results in the rise in price in 19th Century, increase seen in Istanbul population largely results from that the trade becomes widespread. Depending on the area of economic activity becomes widespread, ten thousands of young men wanting to benefit from internal opportunities, arriving to the city from the near regions formed a service community (Karpat, 2003:214-15). Another factor playing important role in the increase of city population is the negative political developments in mid-19th century.

Natural disasters affect the production and transportation activities in the first stage.

Drought reduces production amount and, intensive winters, being interrupted transportation works, hinder the supply of goods. Ottoman geography under the effect of Mediterranean climate often faces to the danger of drought. In case that the case of famine occurs, supply of goods, being abruptly interrupted, the prices rise (Öztürk, 1996:236-238).

Shortage of rain fall or that it rains more than normal used to cause significant falls in the quality and quantity of products. Again, in the winter season passing severe, since land and sea transportation hinder, this case used to lead stocks to expire or cost of goods to rise. In addition, it also used to result in the increase of financial pressure on the consumer i.e. consumption to be entrained to bottle neck from economic point of view and results of this used to reflect to the prices in the same way and a new regulation used to be carried out (Ülgener, 2006:87-89).

2. Istanbul City and Price Movements

Among Ottoman cities, there were many features making Istanbul more different the other cities. The leading ones among these were that Istanbul was capital of the state; that it

had a large population; and that it was important from economic and political point of view. For Istanbul that is important to government from many aspects, there were the economic priorities of government such as nutrition, sheltering, consumption, and etc. (Pamuk,2000:3). Food products coming from agricultural production and raw material, first of all, was allocated to meet the need of craftsmen, organized in the form guild,, and of the town that produced and some part of the remaining production was used to meet the need of army and court, while the other part was sent to remove the need of Istanbul. Of course, here, how significant the provisionism of Istanbul is in terms of government is seen (Genç, 2009:47).

The most important factor determining the size of provisionism need of Istanbul is demographic structure. Istanbul was a city functioning as a consumption center rather than production due to its high population. The city, attempted to be rapidly populated after conquest, with its population of about 400.000 in the first half of 16th Century and about 600.000 in the second half, had become the largest city of Europe. Although there was a decrease in population in 17th and 18th Century, Istanbul, with its population of around 700.000 – 800.000 in 19th Century, was an important settlement center (Güran, 1998:16; İnalçık, 2003:150; Tabakoğlu: 96). This crowded population consisted of sultan's household troops, military troops, madrasah students, foreign merchants, crowded civic people, and immigrants that came to the city in the times, when land was lost. Together with the elements counted above, provided that the aids given by the waqfs and government, and losses are calculated, it can be estimated the amount of provisionism products the city needs (Güçer, 1952:397).

In the period of Selim III, the capital Istanbul maintained its feature to be privileged city of government. In this period, in order to provide the provisionism of the city, many new applications were implemented and, for meeting provisionism of the city, some regulations were made in artisan organizations. In the period of Selim III, a stable period was experienced, when any fluctuations not seen in price movements in Istanbul (Aynural, 2001:169-170).

Ottoman administration formed an integrated and systemic provisionism policy, which include a number of area such as artisan organization, narh institute, production and trade supervision mechanisms, export bans, and import liberation (Güran, 2004:321).

As a result of all of these developments, depending on that the increasing urban population does not meet the need for main goods gradually becomes difficult, food buyers were encouraged by allowing for them to receive more share from the profit and, beginning from the early 19th Century, a free market of goods developed in Istanbul (Karpat, 2003:170-171).

In 19th Century, here was wheat and meat shipping to Istanbul from largely Balkan provinces. In the past, since frequent interruptions was seen in the wheat supply, with Cereal Ministry, founded in 1793 and by building large storehouses around the city and enlarging the old storage capacities, tried to overcome this kind of bottle necks. Before founding Cereal Ministry, provisionism of Istanbul was met by kapan merchant. The regions, in which wheat, brought to Istanbul by Cereal Ministry between 1795 - 1835, was distributed the most, were Rumeli Region of Black Sea and Marmara Region. Mutton, one

of the most important ones of the main food materials was supplied from Rumelian cities such as Plovdiv, Skopje, Monastery and rarely from around Diyarbakır. Every year, sheep more than 200.000 was brought to Istanbul (Tabakoğlu, 2014:126-136).

The original problem for Ottomans was that the cereal was transported from these regions, in which they were produced, to the regions needed for it (Güçer, 1964:1). The most important problem in the production of cereal was transportation. Because the cost of transporting cereal, which shows a feature that is light in weight but heavy in value, through land route is high, the only alternative marine transportation (İnalçık, 1994:116).

Table 1: Price Movements of Istanbul City in the First Half of 19th Century (Mite)

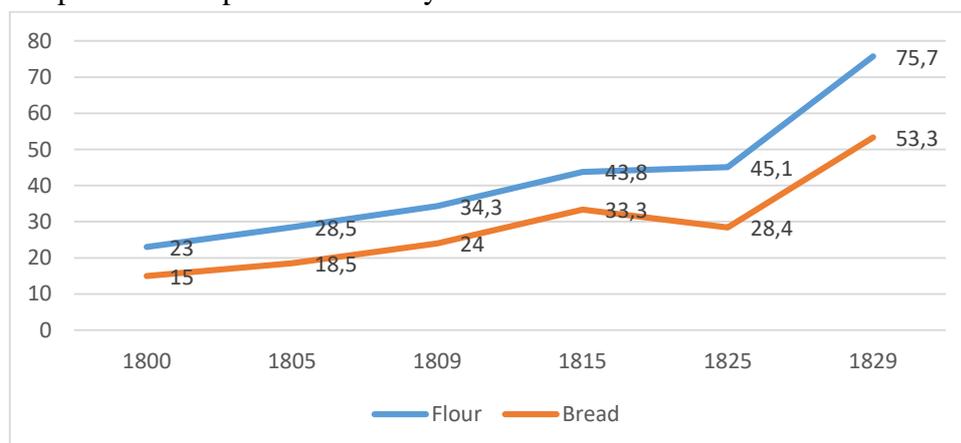
	Flour	Bread	Rice	Butter	Mutton	Lamb	Honey	Chickpea	Onion	Soap
1799	23	13,5		117	40,5	45	87	16	6,5	
1800	23	15			42,8	45	75			84
1804	23	15	38,5	139,5	51	48,8	118,5	13	11	106,5
1805	28,5	18,5			57		132	12,5	14	116
1809	34,3	24	81		85,5	76,5			16,9	123
1815	43,8	33,3		232,5	106,5	93	157,9	62,6	23,1	171
1820		14,6			115,5	105,5	169,6	48		
1825	45,1	28,4		281,9	88,5	102			17	
1829	75,7	53,3	168	400,5	126	160,8	230,4	75	26,3	190,5
1835			240	723,8		265,5	330,9		34,5	348
1840						330	450	165	48,2	544,9

Source: Pamuk, Ş., İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler (1469-1998), 2000, pp.130-148
 Price per okka; 1 okka (kıyye)=1282 g. 1kile (keyl)= 20 okka=24.576 g.

When assessed the data in the study by Pamuk (2000), although there is no regular data belonging to every year, when the mite per kıyye values are considered, the following points can be introduced:

- There are regular data in narh price of flour in terms of kıyye until 1830. While the value of flour in 1800 was mite 23, it rose to 43,8 mite in 1815 and 75,7 mite 1829.

Graph 1: Development of Bakery Prices in Istanbul



- In parallel with the increase in flour price, the price of bread also differs. Bread prices in Istanbul was constant in terms of value. Price movements were on the weight. The weight of bread used to be reduced and, thus, its price used to be increased

(Tabakoğlu, 2014:118). Between 1800-1810, the increases in the price of bread proceeded in normal course, after 1810, prices significantly increased. In 1833, narh price per kıyye, rising several times of that in the previous years, rose to 68,6 mite and some changes occurred in their weights.

- In the first half of 18th Century, although there was not significant data belonging to narh price of rice, there are regular data belonging to the palace and waqf prices. When these data are examined, it is seen that prices per keyl are high. For example, in 1805, while price per keyl for court was 660 mite, it was 1871,3 mite in 1840.
- The price of butter showed increase in years. Increases and decreases in the price of chickpea include irregularities. The price of honey that is an important food product also increased in years and rose to mite 450 in 1840.
- While the prices per kıyye of mutton and lamb were 45 and 75 mite in 1800, respectively, rose to 265,5 and 330,9 mite in 1835. While the price of lamb was near to each other with that of mutton in the first periods, it became more expensive than mutton in the next periods.
- When the price movements of soap, among main supply of provisions, important price increases are remarkable.

That Istanbul is one of the most crowded cities was the important reasons for the shortages experienced. In the periods of famine and war, the price of cereal was rising and wheat export was being forbidden (Tabakoğlu, 2014:114). For example, in 1801, while the price per keyl for waqf was 346,4 mite, toward the middle of century, it rose to 1975,3 mite (Pamuk, 2000:130-132). On this, there is effect of Ottoman- Russian War in 1811.

3. Konya City and Price Movements

In Ottoman Period, Konya was in the position of Pasha Sanjak of the state Karaman. Besides that it is Pasha Sanjak, it is an important settlement center with its manors, tax incomes, and developed craftsman organization. In the early 19th Century, the population of Konya was 23.620, in the second half of the century rose to 50.000 (Baykara, 1998:19).

Konya economy generally carries the features of Ottoman economic structure. In Ottomans, trade accompanying with the activities of handicraftsman is the most important activity areas. Konya economy is based on agriculture and breeding. Cereal and cotton form the most share in agricultural production of Konya. In terms of breeding, each family in the province Konya has more or less cow, ox, goat, and sheep (Öztürk, 2003:7).

In Konya, manufacturing in the form of Bedesten (covered bazaar) centered work of tradesman and artisan was active in the structure of traditional Ottoman Craftsmen Organization. Although production is basic for the need of city and its vicinity, manufacturing was carried out towards long distanced trade on the products such as leather –trade products, weapons, swords, cotton –clothes, carpet, rug and mat. The organized craftsmen activity in Konya continued until the late 19th Century (Buluş, 2014:35). In Konya, among the most important products taking place in the economic production, there are mat, linen, harness, leather products, shoes, opium poppy, sesame etc. (Baykara, 1998:19-

20). In 18th and 19th Centuries, together with the other Anatolian cities, the shoes and hides of sheep and goats from Konya was being sold to the regional and international market (McGowan, 2004).

In 19th century, one of the most important events affecting price movements in Konya are the droughts experienced in the years of 1824, 1843, 1853, 1887 and 1898 (Arabacı, 1999:35).

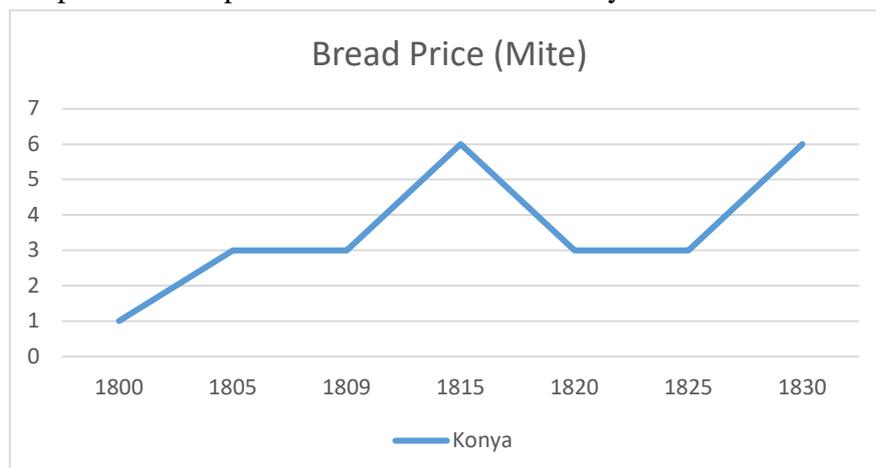
Table 2: Price Movements of Konya City in the First Half of 19th Century

	Bread	Bagel	Rice	Butter	Mutton	Honey	Rough Halva	Chickpea	Onion	Soap
1800	57 dirham 1 mite	47 dirham 1 mite		40 para	30 mite	32 para	16 para	3 para	2 para	60 para
1805	88 dirham 1 para	57 dirham 1 mite	20 para	44 para	10 para	40 para	20 para	6 para	2 para	88 para
1809	100 dirham 1 para	70 dirham 1 para	25 para	52 para	10 para	40 para	24 para	5 para	3 para	80 para
1815	120 dirham 2 para		34 para	60 para	20 para	80 para	50 para		4 para	120 para
1820	80 dirham 1 para	58 dirham 2 para	36 para		18 para	100 para				140 para
1825	50 dirham 1 para				20 para	72 para	40 para	8 para		112 para
1829	1 kıyye 8 para	1 kıyye 12 para	54 para	120 para	28 para	84 para	62 para		4 para	144 para
1835	1 kıyye 20 para					160 para	132 para		12 para	280 para
1840	1 kıyye 20 para			240 para	60 para	180 para	120 para	26 para	12 para	280 para
1843	1 kıyye 16 para	1 kıyye 28 para	72 para		60 para		120 para	16 para	8 para	280 para
1847	1 kıyye 12 para		76 para		60 para	4 kurus 12 para	3.5 kurus			5 kurus

Source: Konya Fourth Court Records 2-b, 28-a, 30-b,40-b, 48-b, 49-b, 50-a, 51-a, 52-a, 52-b, 54-a, 56-a, 57-b
 *1 kurus=120 mite and 40 para; 1 para=3 mite (see. Özkaya, 1985:269; Pakalın, 1983:34).

When the document showing the prices of the main supply of provisions and food products are examined, in Konya, para is mostly used as a currency unit and mite but in a little amount. In the direction of the table above, the following points can be introduced:

Graph 2: Development of Bread Prices in Konya



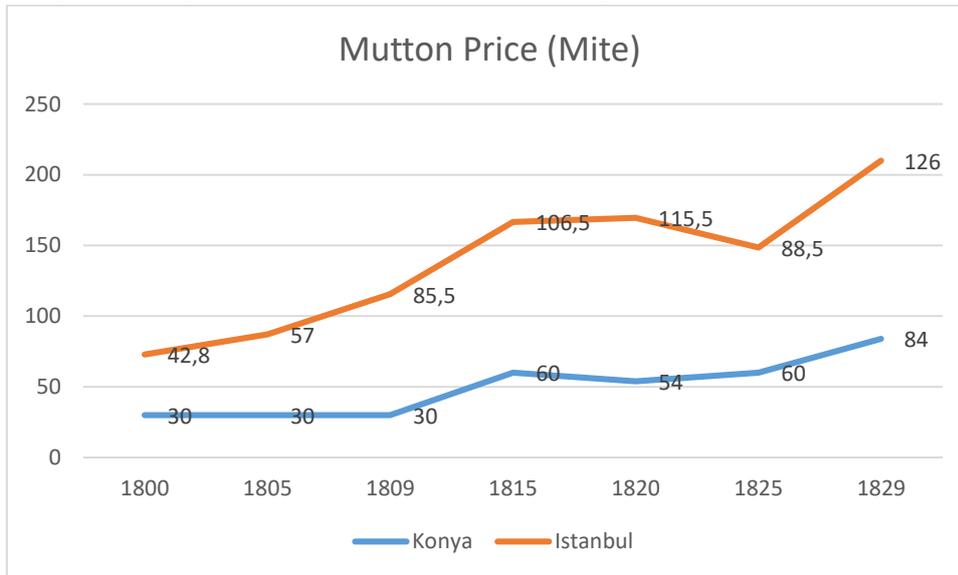
- When bread prices are examined, in 1800, while bread of 57 dirhem is 1 para (3 mites). Between the years of 1805 – 1815 years, the weight of bread increased and its price remained constant. In other words, we can say that the price of bread decreases. After the year 1815, until 1840s, while the price of bread increases, in the period of 1840-1847, while its weight was constant, a decrease in its price was experienced. Drought in 1824 and 1843 is effective in price increases
- In the direction of data reached in the period of 1840 -1847, the increase of the price per kıyye of rice is observed. While in 1800, the price per kıyye of rice was 20 para (60 mite), in 1847, it rose to 76 para.
- In the price of butter, magnificent increases were experienced. While its price per kıyye 40 para, in 1829, it rose to 120 para in 1829 and 240 para in 1840 (720 mite).
- While the price per kıyye of mutton ranged between 10 -20 para between 1800-1840, in the period of 1840 – 1847, it was sold for 60 para. The reason for the stability in the period of 1800 -1840 may be the intensity of breeding activities in Konya.
- Among food products, the price of honey and rough halvah significantly increased in the period of 1840-1847.
- While the price of soap, among cleaning products, was 60 para in 1800, in 1847, it rose to 200 para. Due to the fact that the production of soap is difficult and that it comes from the different regions, it is estimated that its price is so high.

3. Comparison of Price Movements in Konya and Istanbul Cities

Until here, the prices of the main food products and supply of provisions were dealt with. In this part of the study, the comparison of the prices of Istanbul and Konya were studied together with their reasons. First of all, among the prices evaluated, those being for Istanbul are in terms of mite and those being Konya are in terms of para. Here, the value of $1 \text{ para} = 3 \text{ mite}$ should be considered. In general, the prices of flour products are higher in Istanbul compared to Konya. Since

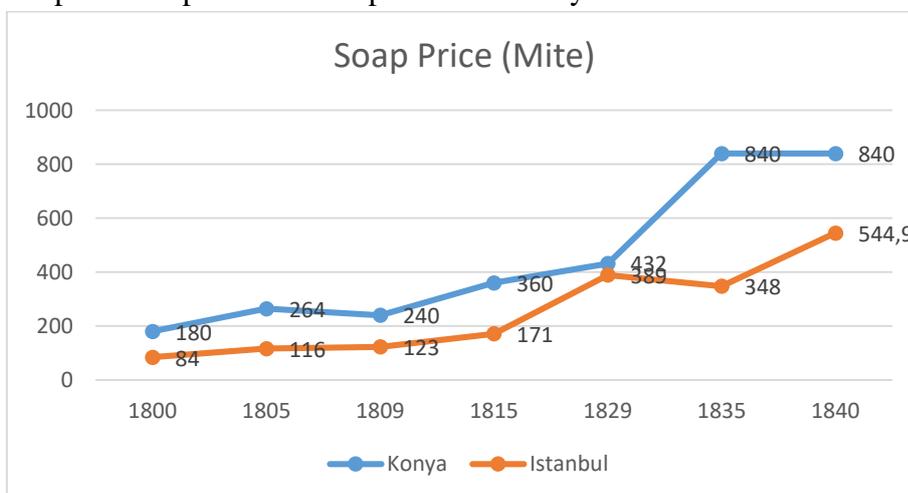
Konya city is cereal storehouse, that the piece of flour products is lower so it is normal. The price of rice is near to each other in both cities and in some years, while it is higher in Konya and in some years in Istanbul. In the first half of 19th century, although the increases in the prices of the butter are high in both cities, in Istanbul, it is higher compared to Konya.

Graph 3: Comparison of Mutton Prices of Konya and Istanbul Cities



The price of mutton, along the period dealt with, is much lower compared to Istanbul. The cause of this is that sheep grows in city and present in abundant amount. Since sheep and lamb come to Istanbul from the different regions, when transportation and population of city is considered, price rises. However, price difference is relatively high compared to the other goods. In some years, the prices are fifty-fifty. When the price of honey is examined, it is seen that the price in Konya is higher compared to Istanbul. The price of chickpea is cheaper in Konya.

Graph 4: Comparison of Soap Prices of Konya and Istanbul Cities



The price of soap among the main supply of provisions is more expensive in Konya. The cost of soap to come to Konya may be higher compared to Istanbul. Soap is generally produced around Midilli, Girit, İzmir, Ayvalık, Edremit etc.

We can generally summarize the causes of price differences as follows:

- First of all, also in both cities, in the prices after 1838, there is significant increases compared to the previous years. The most important cause of this is Baltalimanı Treaty signed in that date. With this treaty in domestic trade, English citizens had a voice as much as Ottoman citizens. In trade, the concept competition emerged. Classical Ottoman economic order, based on the principle of provisionism became monetary.
- In determining, the cereals brought to Istanbul, the abundance and scarcity of the product and size of population are important elements (Aynural, 2001:25). As a result of population increase, since the price increases and supply is lower, there is an increase in the prices. On the other hand, in scarcity case, due to the decrease in the production amount, an increase occurs in prices.
- Since the cereal coming to Istanbul is sold by adding transportation fee and profit margin to the price, which is determined in the regions it comes, the price of food coming to Konya is higher (Güçer, 1952:403). Thus, since Konya produces its cereal on its own, the prices are more convenient.
- 41). Cereal black market and smuggling is another important element affecting prices. The most important reason of cereal smuggling carried out at home is that surplus of production in production region is first of all sent to Istanbul. This case increases cereal demand and price in some Anatolian cities (Aynural, 2001:40-41).
- There is effect of Ottoman –Russian War, made in the first half of the century, on the prices. In the war periods, that government demands material and tax from the people; that the individuals taking place in the production includes in war led industrial production to regress and domestic trade to become narrow. Especially in Istanbul, this case was more felt. An increase occurred in the prices.
- For meeting the monetary demand the wards led to and strengthening central government, debasement application was referred to. This case led monetary value to decrease and prices of goods in market to rise (Açıkgöz, 2010:377).
- Industrial revolution occurring in the last periods of 18th century, negatively affected Ottoman production structure and increased monetary demand of Ottomans.

Conclusion

19th Century is an important period, when the economic, administrative, and social change began in Ottoman State. Economic ideas emerging in the economic thought of Western Europe began to affect Ottoman economic structure. With this way, the principle of provisionism, which take place in the ground of Ottoman economic policies, began to be solved.

As a requirement of the principle provisionism, the main economic mission of Ottoman State is to meet the provision of the people and court. As a requirement of this principle narh system was adopted and every area from production to consumption was

intervened. In the direction of narh system, in order to provide price stability, some regulations in metallic currency regime and price supervision actualized and it was aimed to transport the goods from producer to consumer through the shortest way.

In the study, the effect of those experienced in the first periods of 19th century on the prices was evaluated through Istanbul and Konya cities. Especially in this period, as a result of privileges given to Western Europe merchants and trade agreements made with them, it was seen that production abilities of local producers weakened and that important increases were experienced in the prices of goods. In the most of main food producers and supply of provisions, the prices in Istanbul are higher compared to Konya. Among the most basic reasons, the size of population, transportation fees in transporting goods to Istanbul, the fact that the production made in the city cannot meet consumption, etc. take place. In return to this, due to the fact that Konya is cereal storehouse and that especially cereal prices and breeding is in a developed position, it was seen that meat prices were very convenient.

If we generally summarize, also in both cities, there are important increases in the prices compared to the previous periods. The most important reasons for this are industrial revolution realized in the West; the changes occurring in the Ottoman production and trade structure as a result of 1838 Baltalimanı Treaty, and following this, the other treaties made with the countries in other than England; debasement application frequently referred to due to the increase of monetary demand; and access to process, in which the principle of provisionism is not fully applied.

REFERENCES

- Açıkgöz, Ö.(2010), Osmanlı Para Politikasında Reform Çabaları:1840-1844 Dönemi Üzerine Bir Değerlendirme, *ZKÜ Sosyal Bilimler Dergisi*, V.6
- Akyıldız, A.(1996), *Osmanlı Finans Sisteminde Dönüm Noktası: Kağıt Para ve Sosyo-Ekonomik Etkileri*, Eren Yayıncılık, İstanbul
- Arabacı, C.(1999), *Geçmişten Günümüze Konya Ticaret Odası 1882-1999*, Konya Ticaret Odası Yayınları, Konya
- Aydüz, D.(1990), *İslam İktisadında Narh*, Nil Yayınları
- Aynural, S.(2001), *İstanbul Değirmenleri ve Fırınları Zahire Ticareti (1740-1840)*. Tarih Vakfı Yurt Yayınları, İstanbul
- Baykara, T.(1998), *Konya'nın Selçuklu ve Osmanlı Tarihi*. Gönüllerin Bahçesi Konya. Konya Büyükşehir Belediyesi Yay: 24. (Ed.Ahmet Köseoğlu- İhsan Toy). İstanbul
- Buluş, A.(2014). *Konya Sanayi Tarihi*. Konya Sanayi Odası. Servet Ofset Matbaacılık. Konya
- Genç.M. (2009), Osmanlı İmparatorluğu'nda Devlet ve Ekonomi, Ötüken Yayınları, İstanbul
- Güçer, L.(1952), 18. Yüzyıl Ortalarında İstanbul'un İaşesi İçin Lüzumlu Hububatı Temini Meselesi, *İ.Ü. İktisat Fakültesi Mecmuası*, V.11
- Güçer, L.(1964), XVI-XVII. Asırlarda Osmanlı İmparatorluğunda Hububat Meselesi ve Hububattan Alınan Vergiler, *İ.Ü. İktisat Fakültesi Mecmuası*, İstanbul
- Güran, T.(1998), 19. *Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, Eren Yayıncılık, İstanbul
- Güran, T.(2004), İstanbul'un İaşesi, *İstanbul Şehir ve Medeniyet*, Klasik Yayınları, İstanbul
- İnalçık, H. (1994), *İâşe Osmanlı Dönemi*, Dünden Bugüne İstanbul Ansiklopedisi, Kültür Bakanlığı, Ankara

- İnalçık, H. And D. Quataert (2000), *Osmanlı İmparatorluğu'nun Ekonomik ve Sosyal Tarihi: 1600-1914*, Eren Yayıncılık, İstanbul
- İnalçık, H. (2003), *Osmanlı İmparatorluğu Klasik Çağ (1300-1600)*, (Trn:Ruşen Sezer), Yapı Kredi Yayınları, İstanbul
- Karpat, K.H.(2003), *Osmanlı Nüfusu 1830-1914: Demografik ve Sosyal Özellikleri*, (Trn:Bahar Tırnakçı), Tarih Vakfı Yurt Yayınları, İstanbul
- Konya Dördüncü Şeriye Sicili, 1212-1274/1797-1857
- Kütükoğlu, M.(1983), *Osmanlılarda Narh Müessesesi ve 1640 Tarihli Narh Defteri*, Enderun Kitabevi, İstanbul
- Kütükoğlu, M.(2006), *Osmanlılar'da Kadı*, *DİA*, V.32, Türkiye Diyanet Vakfı, İstanbul
- McGowan, B. (2004)., *Âyanlar Çağı 1699-1812, Osmanlı İmparatorluğu'nun Sosyal Ve Ekonomik Tarihi*, (Ed.: H.İnalçık, D.Quataert). Eren Yayıncılık, İstanbul
- Özkaya, Y.(1985). *XVIII. Yüzyılda Osmanlı Kurumları ve Osmanlı Toplum Yaşantısı*. Kültür Bakanlığı Yayınları. Ankara
- Öztürk, M.(1991), *Osmanlı Dönemi Fiyat Politikası ve Fiyatların Tahlili*, *Bellekten*, V.55
- Öztürk, M.(1996), *Osmanlı İktisadında Fiyatları Etkileyen Unsurlar*, *Prof.Dr. Şerafettin Turan Armağanı*, Kültür Basım Yayın, Elazığ
- Öztürk, S.(2003), *Osmanlı Döneminde Konya Ekonomisine Dair Gözlemler*, *Ulusal I. Konya Ekonomisi Sempozyumu*, Konya
- Öztürk, T.(1998), *18.Yüzyılın İlk Yarısında Trabzon ve Kastamonu'da Fiyatlar*, Yayınlanmamı Yüksek Lisans Tezi, Trabzon
- Pakalın, M.Z.(1983). *Osmanlı Tarih Deyimleri ve Terimleri Sözlüğü*. C.I-II-III, İstanbul
- Pamuk, Ş.(2000), *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler (1469-1998)*, T.C. Başbakanlık Devlet İstatistik Enstitüsü, Ankara
- Pamuk, Ş. (2005), *Osmanlı-Türkiye İktisadi Tarihi (1500-1914)*. İletişim Yayınları, İstanbul
- Pamuk, Ş. (2007), *Osmanlı Ekonomisi ve Kurumları*. (Trn. Gökhan Asay.), Türkiye İş Bankası Yayınları, İstanbul
- Sahillioğlu, H.(1979), *Osmanlılarda Narh Müessesesi ve 1525 Yılı Sonunda İstanbul'da Fiyatlar*, *Belgelerle Türk Tarihi Dergisi*, V. 1, İstanbul
- Tabakoğlu, A.(1987), *Osmanlı Ekonomisinde Fiyat Denetimi*, *İ.Ü.İktisat Fakültesi Mecmuası*, V.43, İstanbul
- Tabakoğlu, A.(2005), *Osmanlı Devleti'nin Kuruluşunun İçtimai ve İktisadi Dinamikleri*, İktisat Tarihi Toplu Makaleler I, İstanbul, Kitabevi
- Tabakoğlu, A. (2014), *Osmanlı Döneminde İstanbul'un İaşesi*, *Uluslar arası Osmanlı İstanbulu Sempozyumu*
- Tezel, Y.(1982), *Cumhuriyet Döneminin İktisadi Tarihi (1923-1950)*, Yurt Yayınları, Ankara
- Uzun, A. (2006), *İstanbul'un İaşesinde Devletin Rolü: Ondalık Ağnam Uygulaması*, Türk Tarih Kurumu Yayınları, Ankara
- Ülgener, S. (2006), *Darlık Buhranları ve İslam İktisat Siyaseti*, Mayaş Yayınları, Ankara

Analytical View on Using Weblog as a Tool of Marketing Management

František Pollák, University of Prešov, frank.pollak@acuityeng.com

Peter Dorčák, University of Economics, dorcak@ezo.sk,

Peter Markovič, University of Economics peter.markovic@euba.sk

ABSTRACT

This paper discusses the issue of the use of blog as a modern marketing management tool on the selected European virtual market. The paper defines basic concepts and context with the subsequent analysis of major players operating on this market. In the context of findings based on the analysis, recommendations for subjects - organizations and individuals planning to use or using blogs as a modern tool of marketing communication to increase their visibility and improve their reputation on the virtual market - are then drawn.

KEYWORDS: Buzz Marketing, Word of Mouth, Blog

Buzz and WOM marketing

Kotler and Keller define noise marketing as a support of opinion leaders and their reasoning to spread information on products within their community (Kotler, Keller, 2007). In literature the word of mouth marketing tends to be described as whispering or giving cues and it basically is sharing of information orally between two people often in the form of a story. Impression of a personal message that shows characteristics of a personal recommendation is typical for this communication scheme. Given the apparent authenticity of a message, this form of promotion maintains a high level of credibility (Kelly, 2007). Based on the literature it is clear, that the concepts of noise marketing and word of mouth marketing have a lot in common. Some authors even argue that it is the same form of communication. Authors Mikeš and Vysekalová argue that it is possible to give both of these forms of promotion either of the names (Vysekalová, Mikeš, 2010). If we look into history we will find out that neither of these two forms (or one common form) is a matter of modern trends. Although this form of promotion is included among modern, non-traditional, trendy and other forms of promotion in literature, its existence is noted since time immemorial. Without people realizing they disseminated promotional messages by word of mouth to a greater or lesser extent long before the trade developed into its current form. Given its nature, this method of dissemination of messages (even promotional) is one of the best forms of promotion and raising awareness of brands, or individual products. Mark Huges describes this method of marketing as a promotional form that catches the attention of the target audience to such an extent that talking or writing about a product or a brand suddenly becomes fun and fascinating at the same time (for both customers and the media) (Huges, 2006).

In literature as well as in marketing practice various kinds of this type of promotion can be encountered, namely:

- referential programmes
- community marketing

- marketing through opinion leaders (Tertel, 2010).

In the virtual world of the Internet WOM and Buzz marketing can have several forms. For the purpose of this paper we shall draw our attention to one of these forms - Webcast.

Webcast and Weblog

Webcast can be defined as a media presentation distributed over the Internet through a single channel to a number of potential listeners, readers, or viewers. The most common formats include audio blog (podcast), video blog (vlog), or Internet radio stations. For the purpose of this paper, the simplest form of dissemination of marketing messages within webcast - weblog - shall be presented. Blood (2000) defines the weblog or blog, as it is often referred to, as a web application that contains chronically ordered posts. An author of blog is called blogger, blogging community is called blogosphere (Blood, 2000, In: Wikipedia, 2012). The word blog was created in 1990s, but came into use in 2000. Advantages of blog as a form of promotion acknowledge not only Internet users but also organizations. Blogs provide invaluable opportunities for organizations from the perspective of non-violent forms of promotion of their products. According to Byron and Broback (2008), organizations can offer or sell products, promote brands and remain in constant contact with customers via blogs.

Blogging as a form of so-called "e-communication" can be described by the following:

- unconventional source of information
- new phenomenon
- tool for the news reporting balance
- challenge to traditional means of mass communication

Byron and Broback note that almost every major company spends considerable funds on marketing promotions in the form of disseminating positive information about itself or its products. The more successful ones have been using blog as a very effective means of disseminating positive information of a more complex nature about the organization.

Byron and Broback (2008) further define four types of blogs focused on marketing, in particular:

- weblogs helping companies to achieve better market orientation
- weblogs promoting visibility of companies
- weblogs focusing directly on the sale of goods and services
- weblogs focusing on promotion of business websites

Objectives and methods

The main aim of the paper is to map the usage of blog as a modern marketing tool on the virtual market of the Slovak Internet. Based on the analysis of main players - blog servers blog.sme.sk and blog.pravda.sk - operating on the selected market, we try formulating basic recommendations for subjects - organizations and individuals planning to or currently using blog as a modern tool of marketing communication to increase their visibility and improve

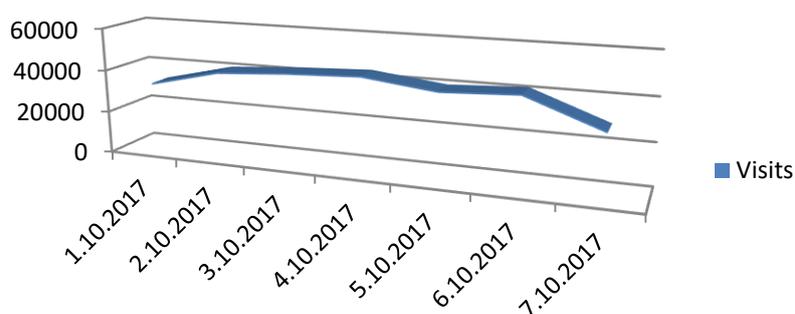
their reputation on the virtual market. Secondary sources of information, namely information from the analyses and research reports of specialized agencies focusing on surveys in the environment of Slovak Internet were used as the main source of data for our analysis.

Evaluation and discussion

Internet users perceive blogging as a non-violent form of content distribution. It is often difficult to detect commercial purpose of a presented message, provided that this form of presentation is implemented correctly. The analysis includes the possibilities offered by virtual Slovak market. Blogging is so widespread on the analysed market as it is in the developed world, but over time blogging is becoming more and more popular. Blog portals of Slovak dailies Pravda.sk and sme.sk. are the most well known in Slovakia. Blogging systems on the portals of the dailies Pravda and SME are almost identical in terms of functionality. In terms of coding they are pre-built and include only a few modifiable options (in terms of personalization) comparing to global platforms.

However, the biggest advantage is relative simplicity and accessibility of the whole solution. Also, comparing to the global blogging platforms (e.g. blogger.com) there is a higher chance that content will be easily accessible to the community of Slovak users. From the perspective of tradition blogging portal SME is more successful on the selected market for it is operating most than 10 years on the Internet. Thanks to tens of thousands of bloggers and a broad community of readers it ranks number one in Slovakia. The following graph shows the actual number of visits of blogs on the online version of the daily SME between 1st and 7th October 2017:

Chart 1: Visits of blog.sme.sk

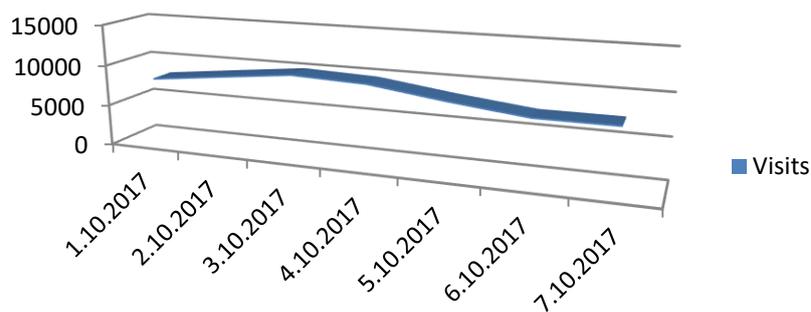


Source: AIMmonitor, 2017

Based on the graph, the number of visits of blogs on the SME.sk portal during an average week averaged to 40,000 per day. Taking into account that this is a free service (if it is a prima facie non-commercial message), only the sheer number of visits encourages to use this platform.

In terms of a direct competitor blog.pravda.sk, the situation is a little different: Pravda launched its blogs in 2010. They have a more intimate atmosphere, less authors and readers, however, this can be an advantage. A new author can succeed faster on blogs of Pravda portal. The following graph shows the actual number of visits of blogs on the online version of the daily Pravda between 1st and 7th October 2017:

Chart 2: Visits of blog.pravda.sk



Source: AIMmonitor, 2017

Based on the graph, the number of visits of blogs on the Pravda portal during an average week averaged to 8,000 per day. Compared with 40,000 daily visits of its competitor, blog.sme.sk, it represents only a fraction of the visitors. As mentioned above, this may not necessarily be a disadvantage, as with a lower number of contributors and readers the opportunity for a newly registered contributor to succeed is theoretically much greater.

Evaluation and discussion

Users perceive weblogs, or blogs, in short, as an authentic way of communicating. Nevertheless, they are not particularly used by the organizations on the analysed market. We consider creating a blog to be a unique opportunity to differentiate from competitors. Non-violently served information with the essence of added value for readers is something that can help to build the already mentioned "online" customer-organization relationship. An excellent example of such a blogging is an online airline ticket seller www.pelikan.sk. By creating a blog and regular publication of witty observations and experiences from trips around Europe's capital cities, the website operator ensured sufficient awareness of its products among its target audience represented by web users / readers of the blog. Based on the conducted researches, it is clear that more than half of the readers trust the information presented through "commercial" blogging. Furthermore, it is clear that more than half of these readers will be influenced by the discussion arising from a published blog. Blog readers will perceive the content in a more positive way, if the blog will regularly feature new articles. Therefore, quality blogs should regularly bring new content so that the blog give the impression of activity. Posts within the blog should be clear and concise, as readers find extensive

contributions less attractive. An important part of promotion through blogging is feedback. We consider comments to form an essential part of a blog. Readers / customers (potential / actual) can complement blog with immensely valuable information through discussion. By dealing with the reactions of their actual or potential customers, their target audience, organizations and individuals will gain an extremely valuable source of primary information in the form of feedback.

Summary

Slovak market is specific, whether in relation to external markets within Europe and the world, or within the internal markets. There are considerable regional differences between the West and the East of the republic (area of less than 500 kilometres). Companies active on the market are confronted with a relatively low purchasing power on the part of potential customers, while on the supply side (represented by potential competitors) the companies find themselves in a hyper-competitive environment. Analysed market on the supply side can be characterised by a high number of small businesses. Given their limitations, especially due to limited resources (human, financial, time ...), they must operate as efficiently as possible, if they want to maintain their presence on the turbulent and hyper-competitive market. The issue of the use of e-marketing instruments in business is relatively little known in our geographical area. Organizations and individuals are only gradually beginning to use the Internet and to profit from the opportunities it offers. Whereas this is a relatively little studied issue, we found important looking for answers to basic questions formulated within the framework of the conducted analysis as one of the subsets of selected links related to e-marketing and online reputation management as a whole.

Acknowledgement

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REFERENCES

- KOTLER, P. and KELLER K.L. 2007 Marketing management. 1. ed. Prague: Grada, 2007. 792 pp. ISBN 978-80-247-1359-5.
- KELLY, L. 2007. Beyond Buzz: The Next Generation of Word-Of-Mouth Marketing.1. ed. New York: AMACOM, 2007. 240 pp. ISBN 978-0814473832
- VYSEKALOVÁ, J. and MIKEŠ, J. 2010. Jak dělat reklamu. 3. ed. Prague: Grada Publishing, 2010. ISBN 978-80-247-3492-7.
- HUGHES, M. 2006. Buzzmarketing: Přimejte lidi, aby o vás mluvili.1 ed, Prague: Managementpress, 2006. 12 pp. ISBN 80-7261-153-4
- TERTEL, J . 2010. The Buzz About Buzz Marketing. [online]. 2010. [12.10.2012]. Available at: <<http://www.jplcreative.com/blog/index.php/2010/08/05/the-buzz-about-buzz-marketing/>>
- Blood In: WIKIPEDIA.ORG. 2012. Weblog. [online].[cit. 12.10.2012]. Available at: <<http://sk.wikipedia.org/wiki/Weblog>>
- BYRON, D. and BROBACK, S. 2008 Blogy: Publikuj a prosperuj. Prague: Grada, 2008. 200 s. ISBN 978- 80-247-2064-7
- SME.sk. 2017. [online]. [cit. 10.07.2017]. Available at: <blog.sme.sk>
- PRAVDA.sk. 2017. [online]. [cit 10.07.2017]. Available at: <blog.pravda.sk>
- AIMmonitor. 2017. [online]. [cit 10.07.2017]. Available at: <http://online.aimmonitor.sk/period_stats.php?p=1762947&view=websites>

Production Mix Adoption of Automated Manufacturing System Using Processing Analysis and Simulation

Hayder Zghair, University of Baghdad, Kettering University, Lawrence Tech University
Ahad Ali, Lawrence Tech University
Irshad Ali, Sterling Heights Assembly Plant

ABSTRACT

In this paper a Rockwell Software (ARENA 14.7) platform of system simulation is used for modeling production process of multi-options product (MOP) development. There are different workstations in this process which are either automated or manually. Because of the low quantity of 530,000 MOP1 and 250,000 of MOP2 which have to be manufactured per year, a fully automated production process is not useful. The main goal is using the Arena simulation to identify bottleneck workstations and to harmonize the manual and automated workstations. As a result of the research work, the production processes are improved. For the approach developing a simulation model, several research papers regarding simulations are utilized to represent the production process of MOP correctly. Cycle time is the variable of the production process, therefore cycle times of the automated workstation are simulated and the results are analyzed. The output of the process is the most important issue which shall be maximized.

INTRODUCTION

In a manufacturing system to make an order running the system, describing the operation as discrete event arrives for each machine in the system and impact manual running for comparing form may is not always available to represent enhancing the decision distribution (Akçay, A., & Biller, B. 2014). Simulation is used more often in the early design phase for the support of production planning and control-related decisions (Ziarnetzky et al. 2014). Discrete events simulation commonly used in modeling and analyzing additions and modifications of complex manufacturing systems as an offline tool contributing towards the right decision to be made as well as get the justifications enhanced by interfacing with the optimum package of scenarios to target the identify the best configuration that results in the optimum performance of the manufacturing system (Phatak et al. 2014). Robotizing a partially automated operation implies increasing the flexibility of a manufacturing system; while the automation has advantages like reduction in number of workers, efficient planning, best possible quality, and highest level of productivity with the same number of resources, some technological problems like fully automated environments are among the known disadvantages such the level of the complexity in terms of system control (Ic, Y. T., Dengiz et al. 2014).

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1.1 Problem description

This applied research is about a simulation of a production process of MOP. There are different types of MOP in the production process. The types are 1-, 2-, 3- and 4- type of options of the product. MOP1 are utilized in a variety of applications such as houses, plants and public buildings. The types of MOP1 are determined by the demand of the market. All types of MOP1 are manufactured in the same production processes system. The production process contains the workstations: automated checking, calibrating and printing; multiple pole assembling; riveting (only 8.7% of all MOP1 are riveted); check of locking and packaging. There are two multiple pole assembling and two packaging workstations. All other ones are single workstations.

This process starts with the automated checking, calibrating and printing of 1-pole MOP1. The assembling of the 1-pole MOP1 takes place in another plant and is not part of this simulation. 1-pole MOP1 are transported to packaging workstation directly after checking, calibrating and printing in the automated facility. Only the automated checking, calibrating and printing workstation is an automated facility. The other workstations are manual processes. The transportation between the workstations occurs manually as well. At the packaging workstation are also packed residual MOP2 which are miniature circuit breaker with a protection against residual current.

All in all 530,000 MOP1 are manufactured in this production process per year (253 workdays in the plant located in Switzerland): 188,839 1-pole MOP1; 111,108 2-pole MOP1; 195,128 3-pole MOP1; 34,928 4-pole MOP1. In addition to it 250,000 MOP2 are packed at the packaging working station per year. The data of the production process are abstracted from a value stream mapping. These data are for example: cycle time of each workstation, number of MOP1 and MOP2, waiting time between the workstations, lead time, and quantity of MOP1 for each production order, etc. So the value stream mapping is the base for the data preparation of the simulation model. The main goal of this simulation is to identify bottleneck stations for improving the production process and to harmonize the automated and manual workstations.

After an abstract and this introduction the project report starts with a literature analysis which is made to get the right approach for building a simulation model; section 3. Section 4 is about the input data analysis for the Arena simulation and section 5 presents the simulation model building of the MOP production process. In section 6 the simulation model is verified and validated. Section 7 shows the results analysis and discussions of the simulation. Section 8 is to finalizing the research work with conclusion and recommendations.

1.2 Related Works

The research presents a simulation presents a simulation design and analysis case study of a flexible manufacturing system (FMS) considering a multi-response simulation optimization using TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) based Taguchi approach. Problem of finding the optimal configuration (working conditions) of an FMS (Flexible manufacturing system) is a complex stochastic non-linear problem which includes both physical and operating system characteristics. This design problem is to choose the optimal parameter values to maximize the FMS performance. “X Manufacturing Co” has to able to respond to market changes rapidly and with high productivity. TOPSIS based Taguchi optimization provides a useful approach to convert multi-response simulation-optimization problem into single-response problem. The optimization process becomes more reliable when the S/N ratio is used 2) using an orthogonal array reduces the experiment time and the simulation costs.). The optimization of stochastic simulation includes gradient-based search methods, stochastic optimization, Response Surface Methodology (RSM), meta-heuristic methods or statistical methods. It is shown that the proposed system, designed by simulation optimization using the TOPSIS-based Taguchi method reveals better throughput rates, shorter cycle times and better WIQ. (Tolk, S. Y. et al. 2015). In the following research work, authors describe a general approach for application of predictive simulation in workflow adaption and defines ways to integrate predictive simulation models in the workflow model. Better prediction result to adapt the workflow execution to the current number of visitors at the museum. The paper proposes to use simulation for runtime adaption of customer service workflows according to the current execution context by design of experiments which performed in two stages; design time evaluation, and runtime evaluation (proactive adaption and reactive adaption) you get a better prediction result. results show a better prediction to the current number of visitors at the museum. And also the predictions based proactive adaptation is shown to provide better results than the reactive adaptation. (Biele, A., & Monch, L. 2015). A discrete event simulation model was developed to represent the vehicle axle and spring assembly lines and understand their dynamics for an automotive company in need of production increase to accommodate expected demand growth. A Company need a feasible manufacturing plan to achieve the rising demand from 700 items to 1 000 items per day. In the paper is proposed several alternative system component changes to reach the desired throughput level as well as determine the optimal resource allocation. Eliminate the bottlenecks (Base and brake disk station in axle assembly line and the station joining a shock absorber and a coil spring in the spring assembly line. Conduct different sensitivity analyses to study the effects of various factors such as arrival rate, batch size, and operator resource on the system performance. Sensitivity analyses of one-way experimental design. The measured impact each factor has on system throughputs and estimated up to

19.7%, 23.2% and 4.8% increases when separately controlling arrival rate, batch size, and operator resource, respectively. (Grabis, J. 2015). In this paper, we discuss an optimization problem for mixed-model assembly lines in the aerospace industry. The performance of executed plans in case of a low effort to reallocate uncompleted work and applying a safety factor (of 1.05 and 1.10) is not influenced by the number of buffer places. Therefore the traveling work strategy can replace buffers as long as P (P is a penalty factor that accounts for the additional effort to transfer uncompleted work from one station to a subsequent) is small. This is of particular interest in aircraft production with expensive, large-size subassemblies causing high inventory costs. The result of computational experiments demonstrate that the simulation-based assessment of plans useful and leads to planning decisions that take the inherent uncertainty on the shop floor into account (Ic, Y. T., et al. 2014).

Hardwood flooring mills transform rough wood into several boards of smaller dimensions. For each piece of raw material, the system tries to select the cutting pattern that will generate the greatest value, taking into account the characteristics of the raw material. The approach is evaluated using industrial data. This allows recovering approximately 30 % of the value lost when using the original system. The case study showed that making use of simulation to gain a better knowledge of the raw material/cutting pattern production yield, and using that information in production scheduling may lead to an improvement (in produced value) in the order of \$ 116 805 ± 82 213 /year for an average hardwood flooring factory. This represents approximately 32 % of maximum theoretical gain (Lindskog, E, et al. 2011). In the following paper, there was a discussion of a method using Discrete Event Simulation (DES) to analyze production systems and simultaneously enable labeling of products' environmental footprint. Various static methods for analyzing environmental footprint have been around for some decades. The prediction is arrived at by sequential execution of events in the digital model, each event being causally dependent on previous ones. The dynamic capabilities of DES modeling provide the possibility to capture variations in the outcome and also to evaluate the effects of changes to the manufacturing processes. One of the greatest benefits of using the proposed method instead of a static method is that the variables in the system make it possible to allocate the dynamics to each product. It is also possible to analyze production stability and find sources in the system with high emission instability that could be improved. By focusing efforts towards the right emission source, the largest improvements can be made for the whole system (Nucci, F., & Grieco, A. 2012). Another paper presents three case studies to demonstrate the use of discrete event simulation for such applications. The first case study demonstrates the use of discrete event simulation to identify critical failure modes for a plant characterized by discrete and continuous product flow. The second study involves the evaluation of capital expansion decisions in presence of different failures and identification of critical components affecting plant throughput. The third case study shows the use of simulation of verify the designed production capacity of a subsystem in presence of different failures and operational constraints. The main objectives for this study is to evaluate the impact of different improvement opportunities including; Variation in production batch size used for Operation1, evaluate the impact of automated transfer of batch from Dump Station to Storage 1. The simulation results revealed that with the addition of new production unit, the production capability of the new system will be higher than upstream and downstream

operations. These findings validate the hypothesis that the proposed system will not limit the production capability of the plant (Rao, S. (1992).

Arena simulation Software enables electronics manufacturer to implement lean methodologies with Confidence. To quantifiable proof at the planning and evaluation stages that lean manufacturing was the optimal manufacturing method. Using Rockwell Software's Arena simulation software uses to predict the cost and magnitude of adopting lean principles. The model showed how transport distance could be slashed, eliminating the need for seven forklifts. The manufacturing simulation model also demonstrated that lean manufacturing would also significantly impact inventories: warehouse inventory could be cut by 70%, exchange inventory by 63%, assembly cell inventory cut by 75%, and finished goods inventory by 10% (Sharda, B., & Bury, S. J. 2011). This research work presents a lean approach that provides firms with a framework and a set of principles to identify and eliminate unnecessary sources of variability and to improve the performance of their production systems. The general problem is to find that optimal WIP level w and the best lean control principle (ConWIP, FIFO, Takt, . . .), in order to meet the required productivity level of a job shop and maximizing performance indicators. The objective in this simulation is to express the impact that Lean Production can have on limiting waste by eliminating variability within the production systems for part combining. Considering the above mentioned problem, selected different elements of lean control for the ConWIP general approach (Solding, P., & Gullander, P. 2009). The paper presents a concept for creating dynamic value stream mapping of a system using simulation to recognize Lean coordinators. The customer demand increased, therefore it is more important to improve the manufacturing system and the corresponding planning system to stay or to increase the position in the market. In this paper the objectives / goals were to present a concept for creating dynamic value stream mapping of a system using simulation. The aim was to enable analyses of more complex systems than standard VSM analyses does and to present it in a way that Lean coordinator can recognize. Useful to solve the Problem is to utilize the combination of Value Stream Mapping (VSM) and Discrete Event Simulation. Value Stream Mapping (VSM) is used for quick analyses of product flows through a manufacturing system, from raw material to delivery. Discrete Event Simulation (DES) is often used for analyses of complex manufacturing systems with several products and a complex planning. These two methods have similarities but also differences (Wery, J. 2015).

2 INPUT DATA ANALYSIS

All required data for building a simulation model of the MOP1 production process are abstracted from a value stream mapping as illustrated in Figure (1). It concerns the quantity of assembled products, cycle times of the workstations, transportation times between the workstations, the availability of the workstations and the capacity of the manual workstations. The red circles and yellow text boxes in Figure 5 show the workstations in the MOP1 production process. In the certain boxes of each workstation the data of the particular workstation are shown. These data are cycle times, maintenance times, takt time of the customer, set – up time, percentage of the scrapped MOP. With the cycle times, the expressions for the processes of the workstations can be built. Therefore the cycle times in

seconds are just put into a constant expression of each workstation. A workstation can have up to four cycle times, because of the four types of MOP1 (section 2). The workstations with four cycle times are the automated facility and all workstations, beside the packing stations. The 1-pole MOP1 just pass the automated facility and the packing station in the reality. In the simulation the 1-pole MOP1 is simulated with a cycle time of 0.0 s at the other workstations. The packing station has three different cycle times, because there are three different opportunities to pack the products (section 5.2). The distribution of 1-, 2-, 3-, 4-pole MOP1 and of the three different packing opportunities is also abstracted from the value stream mapping. For the transportation processes are also chosen a constant expressions in seconds. These transportation times for a single MOP1 are determined experimentally, because this process occurs manually and the times always distinguish slightly.

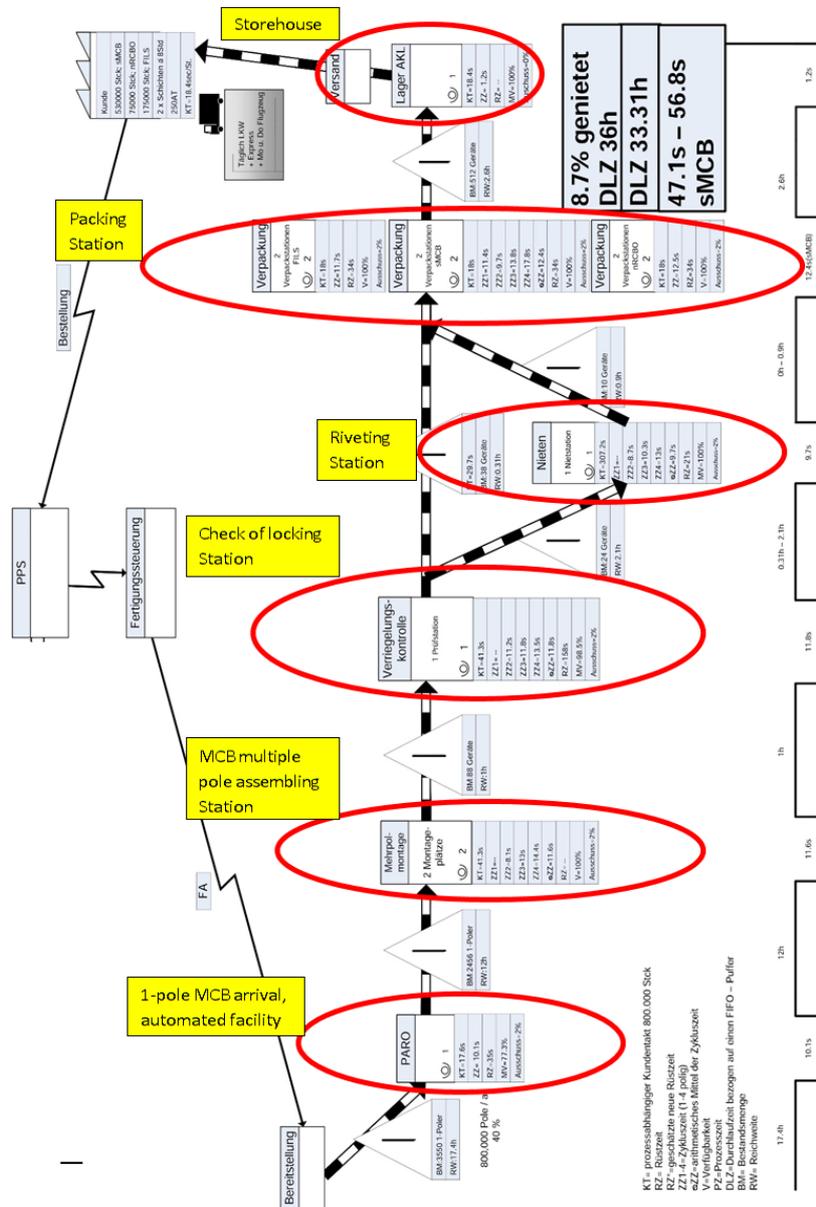


Figure 1: Value Stream mapping of the MOP production process.

3 SIMULATION MODEL BUILDING

3.1 Simulation Model Assumption

For the simulation it is assumed, that the production process starts at the automated facility. The assembling of the 1-pole MOP1 occurs in another plant and is not viewed in this simulation. Furthermore the simulation ends with the transportation of the MOP1 and MOP2 to the storehouse. The logistic and the transportation of the MOP1 and MOP2 to the customer is not viewed in this simulation. Besides the production process of the MOP2 is not demonstrated in the simulation model, but only the packaging of the MOP2, because it occurs at the same packing workstations like the MOP1. Further assumptions are, that all workstations (automated and manual) have constant cycle times. Besides the manual transportation times between the workstations are constant and it is assumed, that there is a worker with an own resource who transports the MOP1 and MOP2 between the workstations and to the storehouse. This worker (resource: "Transportation"; section 3.2) could be the operator of the automated facility, because the facility is fully automated and the worker only has a monitoring task, when the facility is running. Regarding the distances between the MOP1 workstations it is assumed, that these are all the same. The distance between the MOP2 production station and the packing station is equal to the distance between two MOP1 workstations multiplied by three. The distance between the packing station and the storehouse is equal to the distance between two MOP1 workstations multiplied by two. Therefore the transportation time between the packing station and the storehouse is twice as much of the transportation time between two MOP1 workstations. The transportation time between the MOP2 production station and the packing station is the transportation time between two MOP1 workstations multiplied by three. Because the travels of the worker who transports the MOP1 and MOP2 are not always exactly the same, the transportation times vary. Nevertheless it is assumed constant transportation times which mirror the reality as much as possible. That means, that the transportation times are adjusted, so that the output of the production process per day matches with reality (3083 MOP1/MOP2per day - section 3). To simplify the transportation process, every particular MOP1 or MOP2 has a constant transportation time, although the MOP1 and MOP2 are transported in boxes with up to 50 pieces per box in the reality. For the worker of the manual workstations it is assumed, that they are working continuously and stopping their work only in the breaks. Every workday consists of two 9 – hour shifts. There are two 15 – minutes breaks for every worker after two hours and seven hours in each shift. Additionally there is a 30 – minutes break after 4.5 hours for every worker in each shift. For simplifying all workstations are permanently manned and no worker fails, because of illness or something like that. So the production process is always simulated at its highest workload. Besides the 1-pole MOP1 pass the workstations "Multiple Pole MOP1 Assembling Station", "Riveting Station" and "Check of Locking Station" with a cycle time of 0.0 s. Although the 1-pole MOP1 are sent to "Packing Station" after the "Multiple Pole MOP1 Assembling Station" directly in the reality, it is essentially easier to simulate the production process with this assumption. Moreover it is assumed, that the quantity of manufactured MOP1 and MOP2 per year always is constant; as illustrated in section 1.1.

3.2 Simulation Model

Building the Arena simulation model, the different workstations of the MOP1 production process have to be represented. Therefore the advanced transfers in Arena are used. The transportation of the MOP1 and MOP2 occurs with the advanced transfer modules Enter and Leave between the workstations. The process starts at the 1-Pole MOP1 Arrival Station. After this station the MOP1 are transported to the Multiple Pole MOP1 Assembling Station. In the Leave module of the first station several things can be adjusted like the resource of this advanced transfer, the connect type, the station type, the move time, the units and the name of the station which will be entered next. The resource of the whole transportation system between the workstations is “Transportation” and the connect type is “Route”. All move times are constant, for example 2.753 s for the transportation between the first and second workstation.

In the enter modules the name of the modules and the resource name can be adjusted. All workstations have an Enter and a Leave module, beside the first and last station. The first workstation only has a Leave module, because at this station the MOP1 arrive at the Create basic process “1 Pole MOP1 Arrival”. Furthermore the first station includes next to the arrival station the basic process “Automated Facility”. The “Automated Facility” is the first step in the production process of MOP1. The last station is the “Exit of the Production Process”. This is why the exit of the production process only has an Enter module as illustrated in Figure (2) and Figure (3).

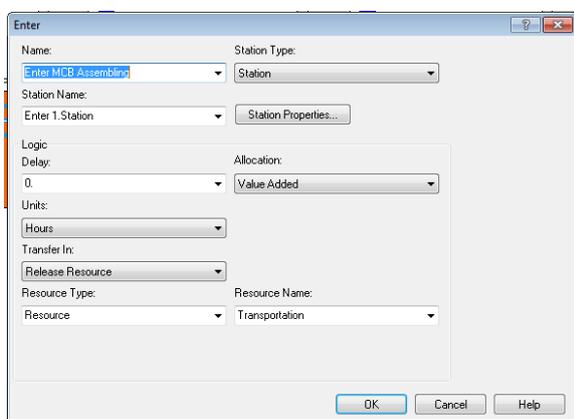


Figure 2: Enter module Multiple Pole MCB Assembling

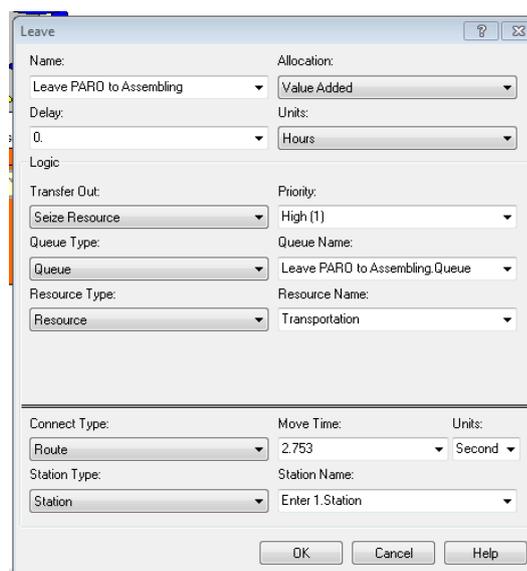


Figure 3: Leave module 1-Pole MCB Arrival Station

After the “Multiple Pole MOP1 Assembling Station” almost all MCB are transported to the “Check of Locking Station”. 8.7 % of the MOP1 are transported to the “Riveting Station”, instead of the “Check of Locking Station”. For that the basic process Decide “Checking or Riveting” separates the MOP1 by the Type 2-way by chance. So this workstation has two Leave modules to transport the MCB either to the riveting or checking station. After riveting, the MCB are also sent to the “Check of Locking Station” with the Leave module “Leave Riveting to Checking” as shown in Figure (4).

After the “Check of Locking station” the MCB are transported to the last workstation, the “Packing Station”. Additionally MOP2 are sent to the “Packing Station” which is loaded at the arrival station “MOP2 Arrival Station” into this production process. The manufacturing of the MOP2 occurs somewhere else and is not simulated in this production process. After the “Packing Station” the packed MOP1 and MOP2 are transported to the storehouse which is represented by the station “Exit of the Production Process”.

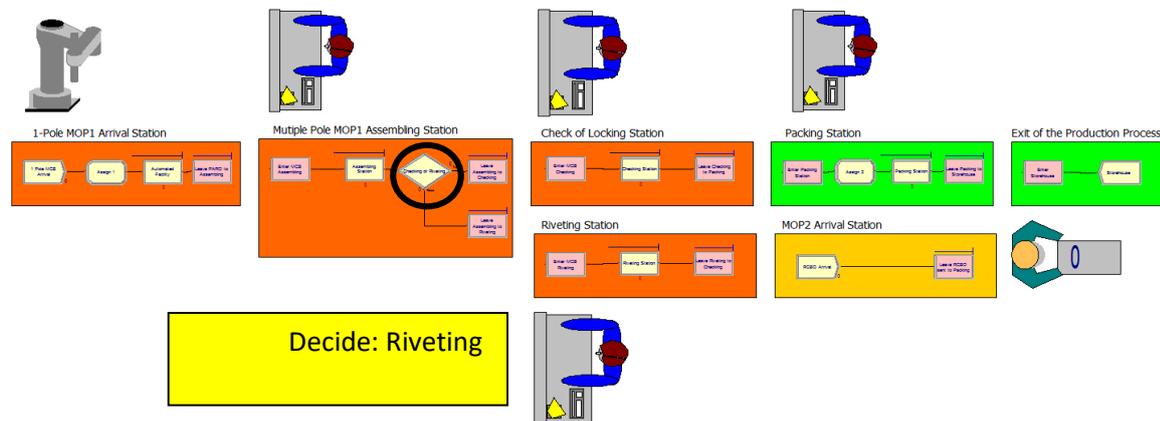


Figure 4: Simulation model of the whole MOP1 production process

The availability of the automated facility amounts to 77.3 %. The rest of the time the facility has to be maintained. This is why the advanced process Failure “Maintenance” is integrated. The production process is simulated one day (18 hours per day), so that the Up Time of this Failure amounts to 0.773 days (77.3 % of this day) and the Down Time 0.227 days. After that the Failure is integrated into the resource of the “Automated Facility” as illustrated in Figure 5.

Failure - Advanced Process							
	Name	Type	Up Time	Up Time Units	Down Time	Down Time Units	Uptime in this State only
1	Maintenance	Time	0.773	Days	0.227	Days	

Double-click here to add a new row.

Figure 5: Failure of the Automated Facility

Furthermore, two schedules are created, because there are only manual workstations, up to the automated facility. The first schedule (Workshift 1#C) has a single capacity and the second schedule a double capacity (Workshift 2#C). The schedule with a double capacity is for the workstations “Multiple Pole MCB Assembling Station” and “Packing Station”, because these stations have two tables, where workers (capacity of two) can manufacture MOP1 and/or MOP2. The other schedule is utilized for the “Check of Locking Station” and “Riveting Station” with one workplace each. The “Automated Facility” has a fixed capacity. All other workstations are based on this two schedules. These adjustments can be fixed in the resource of the particular workstations; as shown in Figure (6) and Figure (7).

Resource - Basic Process									
	Name	Type	Capacity	Schedule Name	Schedule Rule	Busy / Hour	Idle / Hour	Per Use	Failures
1	Transportation	Based on Schedule	Workshift 1#C	Workshift 1#C	Wait	0.0	0.0	0.0	0 rows
2	Assembling	Based on Schedule	Workshift 2#C	Workshift 2#C	Wait	0.0	0.0	0.0	0 rows
3	Riveting	Based on Schedule	Workshift 1#C	Workshift 1#C	Wait	0.0	0.0	0.0	0 rows
4	Checking	Based on Schedule	Workshift 1#C	Workshift 1#C	Wait	0.0	0.0	0.0	0 rows
5	Packing	Based on Schedule	Workshift 2#C	Workshift 2#C	Wait	0.0	0.0	0.0	0 rows
6 ▶	1 Pole MCB Producing	Fixed Capacity	1	1	Wait	0.0	0.0	0.0	1 rows

Figure 6: Inserting the schedules to resources

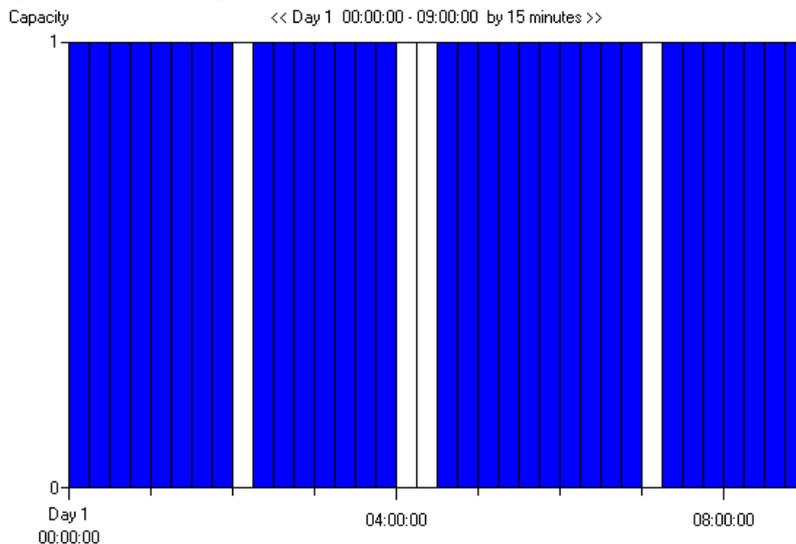


Figure 7: Schedule adjustments

As already mentioned, all workstations have constant cycle times, however different products with different cycle times and quantities are manufactured at each workstation. Therefore two “Assign” modules are integrated in which attributes are defined as shown in Figure (8). The new value of the “Assign 1” is the expression: $DISC(0.3682,1,0.7245,2,0.9341,3,1.0,4)$. With this expression the distribution of 1-, 2-, 3-, 4-pole MOP1 is given (section 2): 36.82 % 3-pole MCB, 35.63 % 1-pole MCB, 20.96 % 2-pole MCB and 6.59 % 4-pole MOP1. Matching the right cycle time at each workstation to the right type of MOP1, the advanced process module “Expression” is utilized. In Figure (9) is shown the adjustments of the cycle times for the “Multiple Pole MOP1 Assembling Station”.

The second cycle time amounts to 0.0 s, because this cycle time is for the 1-pole MCB. After the automated facility the 1-pole MCB are finished, so that the cycle times at the stations “Multiple Pole MCB Assembling Station”, “Check of Locking Station” and “Riveting Station” are 0.0 s for the 1-pole MOP1. At the “Packing Station” the “Assign 2” module is utilized, because only three cycle times are needed. In general, there are two different packaging, a single packaging for the RCBO and a 10-pole packaging for the MCB. With the 10-pole packaging 10x 1-pole MOP1, 5x 2-pole MOP1, 3x 3-pole MCB and 2x 4-pole MCB can be packed. In the 10-pole packaging of the 3- and 4-pole MOP1, tissue papers need to be inserted into the packaging, so that the MOP1 cannot move. This is why the packaging for 1-pole and 2-pole MOP1 have other packing cycle times than the packaging for 3-pole and 4-pole MOP1. The new value of the “Assign 2” is the expression: $MOP2(0.3846,1,0.7051,2,1.0,3)$. With this expression the distribution of 1-, 2-pole MOP1; 3-, 4-pole MOP1 and MOP2 is given : 38.46 % 1-, 2-pole MOP1; 32.05 % MOP2 and 29.49 % 3-, 4-pole MOP1. After building the expressions in the advanced process and the attributes, the

expressions of the delay type of the basic processes of each workstation have to be integrated. In Figure (10), the expression of the Assembling Station is built: “Processing Time 2 (Product Index)”. The “Processing Time 2” mirrors the expression in the advanced process of the Assembling Station and the “(Product Index)” is the connection to the “Assign 1” and attribute, respectively.

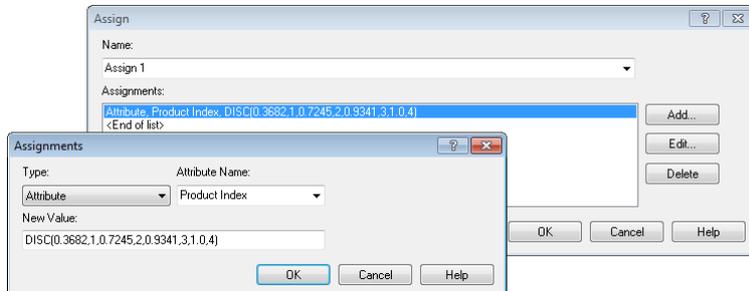


Figure 8: Assign 1 module

Expression - Advanced Process						
	Name	Rows	Columns	Data Type	File Name	Expression Values
1	Processing Time 1	4		Native		4 rows
2	Processing Time 2	4		Native		4 rows

Expression Values	
1	13.0
2	0.0
3	8.1
4	14.4

Figure 9: Advanced process expression

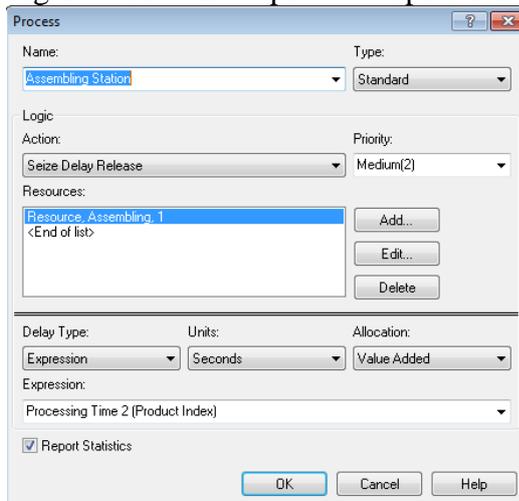


Figure 10: Expression building in the basic processes

With this approach every expression of each workstation is built. Before the simulation can be started, the “Replication Parameters” need to be adjusted in the “Run Setup”. This model is simulated one day, 18 hours per day and the “Base Time Units” are seconds. There are two different types of simulations. The first simulation is replicated once and the second one ten times, also adjusted in the “Run Setup”. The second simulation is important for the section 6, Validation and verification. Furthermore different cycle times of the automated facility are simulated. Each cycle time of the automated facility is replicated once. Only the initial cycle time 10.1 s (abstracted from the value stream mapping; section 4) is replicated once and ten times. Last but not least animations are plotted to demonstrate automated or manual work processes and transportation processes, respectively as illustrated in Figure (4).

4 SIMULATION RESULTS VALIDATION

After building the simulation model for the MOP production process, every part and process is double – checked. Especially the data which are inserted into the simulation model are checked. If there are no mistakes while building the simulation model, the simulation will be started and is verified. Table (1) shows the data in which calculations for the validation of the simulation model are made. The simulation model is validated with the output of the simulation process. The production process has to manufacture 3083 MCB and RCBO (μ_0), respectively, per day. In detail it means, that 2096 MOP1 (68 %) and 987 MOP2 (32 %) have to be manufactured per day. To get this distribution of MOP1 and MOP2, the quantity of MOP1 or MOP2 per year is divided by the total number of workdays per year, 253 workdays (section 2). The sum of these two divisions is equal to 3083. This output of 3083 items is the reference for the validation.

The validation occurs with a statistical test, the t-test. Validating the simulation model, the simulation is replicated ten times ($n=10$) and the output of each simulation run is collected as illustrated in the Table. After that the mean (Y) of these outputs is built and the standard deviation (S). To calculate $|t_0|$, the critical value of $t_{0.025, 5}$ has to be figured out by the t-table for a two-sided validation test: $t_{0.025, 5} = 2.262$. For the significance $\alpha=0.05$ is chosen.

Table 1: Data calculations for the validation of the simulation model

Output of Productions								
3082	3089	3099	3076	3086	3082	3076	3083	3086
Referenced value	3083	Mean	3083.7	Standard Deviation	6.913			

After this calculation, an inequation is utilized to figure out, if the simulation model can be validated. The simulation model is validated, if $|t_0| < t_{0.025, 5}$ is true. The result is $|t_0| \approx 1.53$ and so less than $t_{0.025, 5} = 2.262$. With this result, the simulation model is validated. The result means, that $|t_0|$ is within the confidence interval $1 - \alpha$, so in the non-rejection area. Outside this area, simulation models would be rejected.

5 RESULTS ANALYSIS AND DISCUSSION DATIONS

Due to the adjustable cycle time, the automated facility specifies the cycle time of the whole MOP production process. The fastest adjustable cycle time of the automated facility amounts to 5 s and therefore the fastest cycle time of all workstations. The automated facility is the first workstation in the process and influences the following workstations. The simulation runs with different cycle times of the automated facility to see the effect on the MCB production process: 5 s, 7.5 s, 10.1 s, 12.5 s, 15 s, 17.5 s and 20 s. The cycle time 10.1 s is the most recent cycle time of the automated facility, because it is the cycle time extracted from the value stream mapping; (section 2). The cycle time 10 s is not simulated, because the changing in the opposite to the cycle time 10.1 s would be very slightly. To compare the simulation results for each cycle time, the following data are collected: output MOP production process, machine utilization - automated facility, workstation utilization - assembling station, WIP - work in progress, number waiting in queue - automated facility, waiting time in sec. in queue - automated facility, number waiting in queue - Leave module

after automated facility, waiting time in sec. in queue - Leave module after automated facility, resource utilization "Transportation" - transportation process.

The top of Table (2) shows the average values of the collected data. The bottom table shows the maximum values of the collected data. The data output MCB production process, machine utilization - automated facility, workstation utilization - assembling station, waiting time in sec. in queue - automated facility and resource utilization "Transportation" - transportation process are the same in both tables. In the following the data with the average values are mentioned, only.

The machine utilization of the automated facility is the same at each cycle time, because of the failure of the machine (section 3.2). The facility is running 77.3% of the whole simulation time. In the rest of the simulation time, the facility gets maintained.

Table 2: Simulation results with different cycle times of the automated facility

Data collecting - average values							
	cycle time in sec. - automated facility						
	5	7.5	10.1	12.5	15	17.5	20
output MOP production process	2010	2673	3082	3480	3910	3851	3493
machine utilization - automated facility	0.7731	0.773	0.7731	0.7731	0.7731	0.7731	0.7731
workstation utilization - assembling station	0.4984	0.39	0.3207	0.2591	0.2139	0.1869	0.1639
WIP - work in progress	6004	3535	2172	1385	809	406	218
number waiting in queue - automated facility	333	222	165	133	111	95	83
waiting time in sec. in queue - automated facility	0	0	0	0	0	0	0
number waiting in queue - Leave module after automated facility	2264	1044	514	271	136	61	26
waiting time in sec. in queue - Leave module after automated facility	12748.8	9296.73	6719.97	4385.95	2653.78	1395.29	694.92
resource utilization "Transportation" - transportation process	1.0002	1.0001	0.9999	0.9999	0.9997	0.9322	0.8443
Data collecting - maximum values							
	cycle time in sec. - automated facility						
	5	7.5	10.1	12.5	15	17.5	20
output MOP production process	2010	2673	3082	3480	3910	3851	3493
machine utilization - automated facility	0.7731	0.773	0.7731	0.7731	0.7731	0.7731	0.7731
workstation utilization - assembling station	0.4984	0.39	0.3207	0.2591	0.2139	0.1869	0.1639
WIP - work in progress	11939	6956	4322	2694	1510	840	736
number waiting in queue - automated facility	2942	1962	1456	1177	981	840	736
waiting time in sec. in queue - automated facility	0	0	0	0	0	0	0
number waiting in queue - Leave module after automated facility	4101	2015	1177	663	386	219	126
waiting time in sec. in queue - Leave module after automated facility	26678.7	19906.7	13379.5	9012.33	5898.5	3967.35	2501.1
resource utilization "Transportation" - transportation process	1.0002	1.0001	0.9999	0.9999	0.9997	0.9322	0.8443

The resource utilization "Transportation" - transportation process is in both tables the same. Obviously, the utilization is too high up to a cycle time of 17.5 s.. Especially, because the resource of the transportation process is a worker in the reality, so that this worker constitutes a bottleneck station and have to be supported to achieve a smoother process. Although the resource of the transportation process has a utilization of 0.9997 at a cycle time of 15 s, the output is the highest at this cycle time. Therefore the resource utilization "Transportation" - transportation process is not as important as other data. The WIP (work in progress) quantity becomes lower with higher cycle times, because the parts get more slowly into the process after the automated facility, so that the manual workstations have more time to manufacture the MOP1 or MOP2. The highest WIP quantity is 6004 parts (cycle time 5 s) and the lowest 218 (cycle time 20 s). The waiting time in queue of the automated facility always amounts to 0 s, because the arrival station of the MCB in front of the automated facility has the same constant arrival times like the cycle times of the automated facility. Therefore no queue can occur. Although the workstation utilization of the assembling station, the WIP quantity, the

number waiting in queue of the automated facility, number waiting in queue of the Leave module after the automated facility and the waiting time in queue of the Leave module after the automated facility are the lowest at a cycle time of the automated facility of 20 s, a cycle time of 15 s effects the highest output of the MCB production process: 3910 MOP1/MOP2. The workstation utilization of the assembling station amounts to 0.2139 at a cycle time of 15 s of the automated facility. The assembling station has a capacity of two, however a capacity of one would be enough for this workstation, because of the low utilization.

In the opposite to the recent cycle time of 10.1 s (3rd column of Table 2) with an output of 3082 MOP1/MOP2, the output raises to 3910 MOP1/MOP2 at a cycle time of 15 s, this is an increase of 21.2 %. The production increases about 209,230 MCB/RCBO per year at a cycle time of 15 s for the automated facility. The fastest cycle time of the automated facility (5 s) is the worst choice for the production process. This cycle time causes the lowest output (2010 MOP1/MOP2) and the highest WIP quantity (6004 MOP1/MOP2). Especially the queues of following workstations become greater than with higher cycle times of the automated facility with a direct effect on the WIP quantity; Table (2). Because the cycle time of the automated facility is too fast the cycle times of the following manual workstations, the WIP quantity of the whole process raises and the queues after the automated facility become greater.

Comparing the both tables; Table (2), it becomes obviously, that the average and maximum values have the same tendency. The workstation utilization of the assembling station, the WIP quantity, the number waiting in queue of the automated facility, number waiting in queue of the Leave module after the automated facility and the waiting time in queue of the Leave module after the automated facility are the lowest at a cycle time of 20 s in the table with the maximum values, too. Also, the output is the highest at a cycle time of 15 s in the table with the maximum values.

6 CONCLUSIONS AND RECOMMENDATIONS

All in all there are a lot of opportunities to improve the MOP production process with easy methods and low investments, especially at the manual workstations. So there has not to be a whole automation of the whole production to improve the process noticeably.

Additionally there is the Arena embedded optimization tool “OptQuest” which was not part of this project. This tool could be used to find the best quantity of workstations and employees for this process, for example. Furthermore the results analysis and discussion lead to an obvious and possible improvement, just by raising the cycle time to 15 s, instead of 10.1 s, at the automated facility without any investment. It would harmonize the automated and manual workstations and would increase the output by 21.2 % (section 5).

To get results which lead to improvements and optimizations, the right approach building a simulation model of this process is essential. The approach of this project shows, how important the verification and especially validation are. Without the validation, it would not be possible to simulate the MOP production process realistically (section 4). Next to the verification and validation, the input of data into the simulation model is important (section 2). Without knowing the simulated process in detail, it is impossible to build a convincing simulation model. So there must be a source of data which has been collected before.

Regarding the MOP production process, the source of data is a value stream mapping.

For the future it is imaginably to expand the simulation to the whole value stream of MOP1 and MOP2. In addition to it, real-time data could be inputted into the simulation model, for example recent production orders. Thus the production control always had a real-time overview of the production process, from order to delivery to the customer.

REFERENCES

- Akçay, A., & Biller, B. (2014). Quantifying input uncertainty in an assemble-to-order system simulation with correlated input variables of mixed types. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7020057
- Akyildiz, I., & Strelan, J. (1991). Moment analysis for load-dependent mixed product form queuing networks. *IEEE Transactions on Communications*, 39(6), 828-832. doi:10.1109/26.87171
- Asadi, N., Jackson, M., & Fundin, A. (2016). Drivers of Complexity in a Flexible Assembly System- A Case Study. *Procedia CIRP*, 41, 189-194. doi:10.1016/j.procir.2015.12.082
- Bae, K. G., Zheng, L., & Imani, F. (2015). A simulation analysis of the vehicle axle and spring assembly lines. *2015 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2015.7408337
- Biele, A., & Monch, L. (2015). Using simulation to improve planning decisions in mixed-model assembly lines. *2015 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2015.7408328
- Biele, A., & Monch, L. (2015). Using simulation to improve planning decisions in mixed-model assembly lines. *2015 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2015.7408328
- Ic, Y. T., Dengiz, B., Dengiz, O., & Cizmeci, G. (2014). Topsis based Taguchi method for multi-response simulation optimization of flexible manufacturing system. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7020059
- Giovannini, A., Aubry, A., Panetto, H., Haouzi, H. E., Pierrel, L., & Dassisti, M. (2014). Approach for the rationalisation of product lines variety. *IFAC Proceedings Volumes*, 47(3), 3280-3291. doi:10.3182/20140824-6-za-1003.02226
- Grabis, J. (2014). Application of predictive simulation in development of adaptive workflows. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7019959
- Ic, Y. T., Dengiz, B., Dengiz, O., & Cizmeci, G. (2014). Topsis based Taguchi method for multi-response simulation optimization of flexible manufacturing system. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7020059
- Kang, D., Kim, H., Choi, B. K., & Kim, B. H. (2014). Event graph modeling of a heterogeneous job shop with inline cells. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7020060
- Kim, Y., Joo, B., & Shin, J. (2007). Heuristics for a two-stage hybrid flowshop scheduling problem with ready times and a product-mix ratio constraint. *Journal of Heuristics*, 15(1), 19-42. doi:10.1007/s10732-007-9061-z
- Lafou, M., Mathieu, L., Pois, S., & Alochet, M. (2016). Manufacturing System Flexibility: Product Flexibility Assessment. *Procedia CIRP*, 41, 99-104. doi:10.1016/j.procir.2015.12.046
- Lindskog, E., Lundh, L., Berglund, J., Lee, Y. T., Skoogh, A., Johansson, B., & Johansson, B. (2011). A method for determining the environmental footprint of industrial products using simulation. *Proceedings of the 2011 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2011.6147926
- Meyer, M., Brintrup, A., & Windt, K. (2014). Linking Product and Machine Network Structure Using Nested Pattern Analysis. *Procedia CIRP*, 17, 278-283. doi:10.1016/j.procir.2014.01.089
- Modrak, V., & Bednar, S. (2015). Using Axiomatic Design and Entropy to Measure Complexity in Mass Customization. *Procedia CIRP*, 34, 87-92. doi:10.1016/j.procir.2015.07.013
- Nucci, F., & Grieco, A. (2012). A simulation-based lean production approach at a low-volume parts manufacturer with part combining. *Proceedings Title: Proceedings of the 2012 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2012.6465149
- Phatak, S., Venkateswaran, J., Pandey, G., Sabnis, S., & Pingle, A. (2014). Simulation based optimization using PSO in manufacturing flow problems: A case study. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.7020058
- Rao, S. (1992). The relationship of work-in-process inventories, manufacturing lead times and waiting line analysis. *International Journal of Production Economics*, 26(1-3), 221-227. doi:10.1016/0925-5273(92)90067-h
- Sharda, B., & Bury, S. J. (2011). Best practices for effective application of discrete event simulation in the process industries. *Proceedings of the 2011 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2011.6147942
- Solding, P., & Gullander, P. (2009). Concepts for simulation based Value Stream Mapping. *Proceedings of the 2009 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2009.5429185
- Wan, X., Evers, P. T., & Dresner, M. E. (2012). Too much of a good thing: The impact of product variety on operations and sales performance. *Journal of Operations Management*, 30(4), 316-324. doi:10.1016/j.jom.2011.12.002
- Wery, J. (2015). Improving a hardwood flooring cutting system through simulation and optimization. *2015 Winter Simulation Conference (WSC)*. doi:10.1109/wsc.2015.7408420
- Ziarnetzky, T., Monch, L., & Biele, A. (2014). Simulation of low-volume mixed model assembly lines: Modeling aspects and case study. *Proceedings of the Winter Simulation Conference 2014*. doi:10.1109/wsc.2014.702005

Relationship Between Organizational Communication and Organizational Burnout

Assist.Prof.M. Kürşat Timuroğlu, Ataturk University, timuroglu@atauni.edu.tr

Assist.Prof. Mustafa Keskinliç, Ataturk University, muskes@atauni.edu.tr

Mehmet Polat, Ataturk University

INTRODUCTION

Communication is an indispensable element of everyday life. The most basic assumption of communication is the difficulty of communicating. People communicate at home, at work, on the street, at shopping bazaars, shopping malls, and almost every moment of life. The individual transmits his / her intention through a channel, the recipient receives and interprets the message, which is the communication process. One of the most basic elements that serves to achieve an objective is the communication process.

Communication is also of utmost importance for organizations that are formed by bringing together individuals who unit their material and spiritual powers in order to realize an aim. Determination of the purpose underlying the formation of an organization is communicative. The organization also needs communication from the moment it is in its intended action. Issues such as how and when the activities to be carried out in an organization are to be carried out are communicated through communication. Organizational communication emerges within the organization between the superiors and the subordinates, between the units and departments, and around the organization (state, press, people, etc.). "The results of an open, empathic and healthy communication that can be established in formal or informal form at any level (subordinate or subordinates) will surely be reflected on organizational performance" (Barli, 2012: 315).

According to Maslach and Jackson, burnout is a physical, emotional and mental dimension syndrome that involves physical burnout, long-suffering tiredness, desperation and hopelessness, negative self-concept and negative attitudes to life and other people (Yücel, 2006: 13). According to Maslach, burnout is a psychological discomfort and occurs for a long time. The authors who define it as physical emotional and mental burnout are Pines and Aranson. In general, some writers view burnout syndrome as a reflection of the inability to combat stress effectively (Kızıldere and Kalay, 2015: 33).

One of the most precious assets in the organization is the "human" source. Where people exist, there is need for communication essentially. Communication efficiency and lack of communication have different consequences for organizations. While an effective and positive communication structure contributes to the realization of organizational goals, non-communication organizations will lead to inefficiency and burnout.

Literature Review

The Concept of Organization

An organization is the whole of certain structures, rules, and processes' that shape the efforts of a group of people to achieve specific goals. Another definition is the structure that

indicates the assignments, positions, peer relations along with their communication and authority relations (Ölçer ve Koçer, 2015: 341).

Organizational communication is the element that provides interaction between the individuals in the organization in order to maintain the organization and achieve organizational goals. Organizational communication, which is an open system that affects the environment and is also influenced by its environment, also includes the flow, direction and means of communication (Akıncı, 1998: 112).

In general, when an organization is referred to, it is understood that two or more people organize their behavior according to formal rules in order to achieve a common purpose. The events that take place in an organization are mutual behaviors. Organizational structure defines these reciprocal behaviors. The specific nature of the organizational structure and reciprocal behavior will change from one organization to another. However, in every organization, individuals are found in mutual behaviors for purposes. It is possible that these mutual behaviors are always defined by a type of structure. For formal organizations, the structure is regarded as an important feature at first (İşcan and Timuroğlu, 2007: 119).

ORGANIZATIONAL COMMUNICATION CONCEPT

Communication is transmission of emotions, thoughts, attitudes and opinions from sender to receiver through the verbal and non-verbal symbols; it is the period in which the receiver passes them back through the biological and psycho-social processes and back to the sender. (Geçikli, 2010: 253).

Organizational communication is the harmonization of the people who come together in a common purpose and target frame; the communication between the individuals and the groups that provide the business association and the communication of the individuals and groups in the organization and the outsiders on behalf of the organization (Akıncı Vural and Bat, 2013: 11).

Organizational communication is the communication that is in the organization, related to organization and executed by the organization. In the sense of communication in organization, organizational communication implies intra-organizational relations. In the sense of communication made by the organization, the communication as a unit includes external relations, planned relations, for example, propaganda and associations with the organization for certain purposes. It includes all kinds of communication, including communication organization related to organization. Organizational communication involves the sharing of information, emotion, understanding and approach among various units and employees of an organization, all kinds of tools and methods in this sharing process, various channels related to the transfer and the form of message. Organizational communication describes the organization's communication with the external environment and the inter-individual and inter-group communication within the organization (Eroğlu ve Özkan, 2009: 52).

The message sent by the manager of the organizational communication includes the telling, embracing and action of the message to the worker. Organizational communication also has to respond with feedback from actions and actions taken to achieve organizational goals. Thus, both the manager's influence on the occupation and the bidirectional communication process involving the manager's response to the occupation (Ölçer and Koçer, 2015: 343).

THE CONCEPT OF BURNOUT

The concept of Burnout first entered the literature with an article written by Freudenberger in 1974. Burnout is described here as a "professional hazard". Freudenberger defined burnout as "failure, depreciation, loss of power and energy that results in overloading, or extinction in the internal resources of the ending individual" (Sağlam Arı ve Çına Bal, 2008: 132).

According to Maslach and Jackson, burnout is a physical, emotional and mental dimension syndrome that involves physical burnout, long-suffering tiredness, desperation and hopelessness, negative self-concept and negative attitudes to life and other people (Yücel, 2006: 13). According to Maslach, burnout is a psychological discomfort and occurs for a long time. The authors who define it as physical emotional and mental burnout are Pines and Aranson. In general, some writers view burnout syndrome as a reflection of the inability to combat stress effectively (Kızıldere and Kalay, 2015: 33).

Although there is no common definition of consensus on burnout, many researchers agree that it is an internal psychological experience that occurs at an individual level, including burnout, expectations, attitudes, feelings and emotions (Scott and Tuncay, 2010: 115).

Burnout is a condition that manifests itself in the sense of burnout felt in the physiological and emotional areas observed in the occupational groups that require intensive communication with people and the inability to cope with the living stress of the profession (Yücel, 2006: 13).

Negative behaviors towards customers or served persons, deterioration in people's relations and actively withdrawing from and withdrawing from other people's environments, weakening in service quality, mistakes, accidents and injuries, loss of interest in work, loss of creativity, the loss of idealism, the lateness and absence of work, the postponement or withdrawal of some things, the absence of work, the reduction in job satisfaction and organizational commitment, and the tendency to quit work at the end of all and the desire to change jobs can be determined as the results (Sağlam Arı and Çına Bal, 2008: 132).

There is a tendency to make mistakes, to delay or suspend some things, to come to work late, to come to work with unexplained illness, to leave work, to deteriorate the quality of service, to deteriorate work and business relations, to increase accidents and injuries, to colleagues, occupation etc. exhibiting a cynical attitude towards others, spending time with other things instead of taking care of the work, loss of interest in the institution (Kaçmaz, 2005: 30).

The organizational methods that can be applied to prevent and cope with burnout are summarized below.

Any measure that can be taken to improve organizational conditions has a burnout preventative or burnout reduction effect within the organization. The methods of coping at the organizational level are more permanent than those at the individual level and it reinforces the belief that burnout is an important problem for the organization and should be avoided. On the other hand, the methods of coping that are carried out at the organizational level provide the acceptance of burnout throughout the organization and the formation of groups that are more knowledgeable and able to cope with burnout. These methods are listed in the table below (Ardıç ve Polatçı, 2008: 76).

In the article, Maslach and Jackson's definition of burnout is generally adopted, and Maslach Burnout Inventory, developed by Maslach, is used as a measurement tool. The concept of burnout consists of three sub-dimensions: emotional exhaustion, depersonalization, and feeling of falling in personal accomplishment. While describing only the emotional exhaustion dimension of your Freudenberger burnout, Maslach and Jackson are theoreticians who reveal the three dimensions of burnout in the summer (Kılıç and Aytemiz Seymen, 2016: 49).

Figure: 1 Maslach's Burnout Model

- Emotional Exhaustion	- Depersonalisation	- Professional Efficacy
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a) Emotional Exhaustion: Refers to the individual stress dimension of burnout and "to decrease in the emotional and physical resources of the individual" (Budak and Sürgevil 2005: 96). Emotional exhaustion is the lack of energy and exhaustion of emotional resources of the individual. In addition to feelings of weakness, weakness of individual self-confidence, it also decreases the enthusiasm and interest in the profession (Şenturan, et al., 2009: 34).

b) Depersonalisation It represents the interpersonal dimension of burnout, and negative, rigid attitudes towards humans indicate a lack of reaction to work (Çimen, et al., 2012: 22). It is manifested in behaving as an object rather than as a person against the people whom the employees serve. They may be distracted, cynical and cynical towards the people and institutions they interact with. Classification of people, doing business according to strict rules, thinking of constantly evil coming from others, indications of Depersonalisation (Ersoy and Demirel Utku, 2005: 44).

c) Personal Incompliance: A measure of the level of proficiency and competence of the person in the job. As the emotional resources are emptied, the individual feels that he/she can not give anything to others because of spiritual care, and the desire to achieve idealism, energy and purpose is diminishing. The individual is prone to negatively assessing himself / herself and especially the way of working; (Yaman and Ungan, 2002: 39). The lack of personal success is evidenced by the fact that employees do not appreciate it. When a person feels helpless and incidents are uncontrollable, he is beginning to question his own abilities and this leads to a lack of personal success. Poor personal achievement is more observed in individuals who engage in group work (Çelik and Tuğrul, 2002: 2).

The Relationship Between Organizational Communication and Organizational Burnout

Yaman et al. (2002) reported that burnout syndrome is also common in family physicians. Family physicians meet more patients than do colleagues at the hospital and lack supportive health personnel. It is thought that all of their knowledge and skills need to be exhibited instantaneously, and that factors such as the division of work frequently during running are causing the burnout. It is also held responsible for family physicians who have to work in rural areas to stay away from other colleagues and relatives.

Ersoy et al. (2005) examined burnout syndrome in female employees working in an international hotel chain in this study, which examines the burnout status of women working in

the hospitality sector in Turkey. This research was conducted on 204 female employees. At the end of the study, it was determined that 45% of the female employees had a burnout due to the uncertainty of the sectoral future, the intensity of the work tempo-presentation, the attitudes of the managers, and working as mothers and spouses.

METHODOLOGY

Purpose of the Research

The main purpose of the research is to determine the relationship between the organizational communication and organizational burnout of civil servants who enter the field of application and are active in the public sector. Effective and positive communication environment in institutions increases the factors such as job loyalty and job satisfaction which improve the positive relation between the employees and the business in the business life. Ineffective and unsatisfactory organizational communication leads to negative situations, such as job dissatisfaction and increased staff turnover, that detract employees from work. All of the activities to be carried out in order to reach the objectives of the organization are determined by the organizational communication process and the work flow is provided with the communication process in the implementation phase. The burnout of employees is also an important factor affecting positive or negative relationships with work. High job satisfaction can lead to positive situations such as increasing employee performance and increasing productivity. Burnout can cause negative situations such as alienation of employees and job separation. The concept of organizational communication and organizational burnout is known and it is important to investigate whether there is a relationship between them. It is expected that the research will help to re-consider about the concepts of organizational communication and organizational burnout, to discuss and to make new researches, to help the existing situation to be evaluated more realistically and to be beneficial to the institutions and organizations.

Methodology and Limitations of Research

The questionnaires used in the research indicated that the data obtained with the questionnaires will only be used for academic purposes and that they will not be shared with any person and / or organization. It is therefore assumed that the respondents correctly perceive the expressions on the questionnaire and transmit their true opinions. Because of the presence of the human element in the center of the research, the general limitations of research in social sciences are valid for this research and the reliability of collected numerical data is limited to the characteristics of the survey technique used in the data collection. The survey method was chosen as the data collection method. The main body of this research, which is based on the questionnaire study, consists of 203 officers working in the provincial governorship of the province of Erzurum. However, it has been taken into consideration that some officers may not answer or possibly made mistakes answering; a simple random sampling method was used, in which each element forming the population is equal to the chance of entering the sample. 203 questionnaires have been distributed. All of these forms have returned. The turnover rate of the questionnaires is 100%. The number of questionnaires subject to the analyzes is 203. The burnout scale consists of 22 items, which are prepared according to 5-level Likert scale for respondents to measure the burnout of the officers. Items 1-9 measure emotional exhaustion,

example shown as "I feel not pleased to my job". Items 10-16 measure the depersonalisation, as in "I do not wonder what happens to people I have to work with". Items 17-22 measure the sense of personal accomplishment as it is the case, for example, "creating a comfortable atmosphere in search with people I work with".

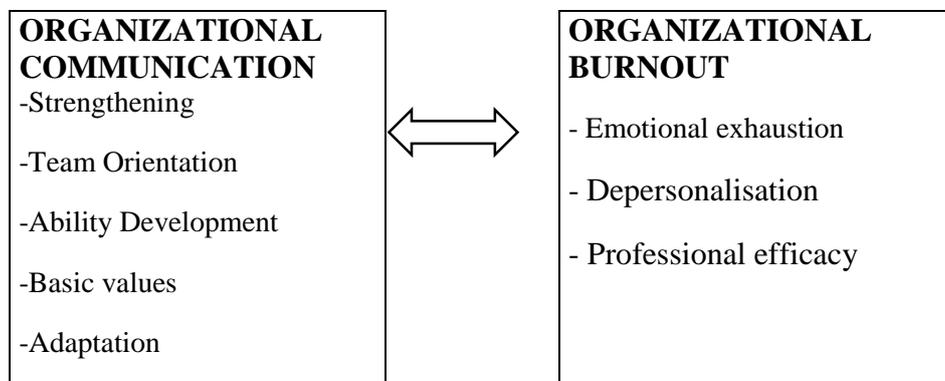
The organizational communication scale consists of 31 items, which are prepared according 5-level Likert scale required to respond from the respondents in order to measure the organizational communication effectiveness that the officials perceive. Items 1-6 measure the strength of the question, "I can easily guide my questions, suggestions and criticisms to the concerned person." Items 7-12 measure the team orientation as it is the case for "I work outside my work with my colleagues." Items 13-18 measure the ability to develop, for example, "Information about work is usually given verbally." Items 19-24 measure basic values as in "I am able to do what I need to do during working hours." Items 25-31 measures compliance as in the case of "satisfaction from dialogue with my colleagues".

Scales, Models and Hypotheses Used in Research

5-level Likert scale was used to answer the items applied in this study. Assessment options include: 1- Always, 2- Most of the time, 3- Sometimes, 4- Very rare and 5- Never

Conceptual Model of the Study

In this research, a descriptive research model was used to reveal the relationship between organizational communication and organizational burnout at the level of sub-dimensions.



Hypotheses

The main purpose of the research is to determine the organizational communication and burnout levels of employees; also to test the possible relationship between levels of emotional exhaustion and justice perceptions of employees on their organizations. Therefore, the following research questions and hypotheses will be sought.

H1: There is a meaningful relationship between organizational communication and organizational burnout.

H2: There is a significant relationship between empowerment and organizational burnout.

H3: There is a meaningful relationship between team orientation and organizational burnout.

H4: There is a significant relationship between talent development communication and organizational burnout.

H5: There is a meaningful relationship between organizational communication and emotional exhaustion.

H6: There is a meaningful relationship between organizational communication and depersonalisation.

Analysis and Evaluation of Data

Analyzes were carried out based on the responses from 203 participants who participated in the study and were found eligible. In the analysis of the data, SPSS 22 statistical program was used. The analyzes made are explained below.

Demographic Characteristics of Survey Participants

In order to determine the demographics of respondents participating in the survey, educational status, age, marital status and years of work were researched and the information obtained is presented in Table below.

	Frequency	Percent		Frequency	Percent
Total Participants (N = 203)			Total Participants (N = 203)		
Gender			Seniority		
Woman	86	42,4	1-3	66	32,5
Male	117	57,6	4-8	60	29,6
			9-15	26	12,8
Age			16-20	19	9,4
	20	9,9	21 and more	32	15,8
18-25	80	39,4	Education Status	5	2,5
26-34	61	30,0	Primary school	9	4,4
35-45	27	13,3	Middle School	61	30,0
46-54	15	7,4	High school	24	11,8
			College	93	45,8
			University	9	4,4
			Graduate	2	1,0

When the respondents participated in the survey were examined in terms of their genders, it was seen that 42.5% of the sample size of 203 persons were female and 117 of them were male. When the level of education of the respondents were examined, it is seen that most

of the subjects graduated from university (45.8%) followed by 30.0% with high school and 11.8% with college graduate.

Determination of the Reliability of Scales Used

In the study, Cronbach's Alpha values were determined in order to determine the levels of perception of organizational communication and organizational burnout of the employees working in the City of Erzurum, and the results are presented in the table below.

Reliability Levels of Scales Used in Work

Scale	Sub Dimensions	Cronbach's Alpha
Organizational Communication	Strengthening (6)	0.715
	Team Orientation (6)	0.635
	Skills Development (6)	0.680
	Core Values (6)	0.635
	Compliance (7)	0.800
Organizational Burnout	Emotional exhaustion (9)	0.724
	Depersonalisation (7)	0.703

	RELIABILITY (Cronbach's Alpha)
Organizational Communication	0,908
Organizational Burnout	0,821
GENERAL AVERAGE	0,831

As can be seen from the table above, most of the scales used in the study generally have high levels of reliability. When the reliability levels in terms of organizational communication sub-dimensions are examined, alpha values are high in all sub dimensions except team orientation, talent development, core values communication sub-dimensions. As a result, it can be said that the scales used in this study are reliable on the basis of the analyzes made.

Perceptions of Respondents towards Organizational Communication and Organizational Exhaustion

The study is divided into two dimensions as organizational communication and organizational burnout. Organizational communication dimensions consist of 5 sub-dimensions as empowerment, team orientation, ability development, core values, adaptation among

themselves; organizational burnout is composed of two sub-dimensions, depersonalisation and emotional exhaustion.

**Perceptions of Respondents towards
 Organizational Communication and Organizational Burnout
 Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
I feel not pleased to my job.	203	1,00	5,00	3,2808	1,24080
I feel exhausted from the business return itself.	203	1,00	5,00	3,0985	1,21466
When I get up in the morning, I feel like I can not take this job anymore.	203	1,00	5,00	3,7635	1,16179
I can immediately see how people feel about my job.	203	1,00	5,00	2,4729	1,13583
I realize that some of the people I work with are as if they are not human.	203	1,00	5,00	4,2709	1,13036
It's too much for me to deal with people all day	203	1,00	5,00	3,1527	1,21514
Find the best solution for the problems of the people I work with.	203	1,00	5,00	2,1133	1,03502
I feel like I'm out of work.	203	1,00	5,00	3,4483	1,19032
I believe that I contribute to people's life through the work I do.	203	1,00	5,00	2,0887	1,10893
Ever since I started working with this business, I've become hard on people.	203	1,00	5,00	3,7882	1,17712
I'm afraid this thing will make me harder and harder.	203	1,00	5,00	3,4828	1,29104
I can achieve a lot of things	203	1,00	5,00	2,3596	1,17471
I feel that my work has restricted me.	203	1,00	5,00	3,1084	1,33797
I feel like I'm working a lot in my work	203	1,00	5,00	2,7438	1,35464
I do not care how people have to deal with.	203	1,00	5,00	3,9606	1,26976

Working directly with the people is causing too much stress.	203	1,00	5,00	3,1626	1,18913
I can easily refer questions, suggestions and criticisms to interested persons.	203	1,00	5,00	2,4729	1,13146
The company tries to produce a problem and instant solution.	203	1,00	5,00	2,7537	1,18924
Employees are clearly informed about the company's policies, goals and objectives, and financial issues.	203	1,00	5,00	2,8670	1,27312
Regular information is given about my work.	203	1,00	5,00	2,5911	1,10145
I know my social rights.	203	1,00	5,00	2,3054	1,13247
My superiors also help me with my particular problems.	203	1,00	5,00	2,6847	1,26613
I also work outside my work with my colleagues.	203	1,00	5,00	2,6355	1,13239
When I do my job well, I get immediate appreciation and thanks.	203	1,00	5,00	3,2118	1,28951
New entrants to the business are introduced in detail.	203	1,00	5,00	3,0296	1,29703
No gossip is made in this company.	203	1,00	5,00	3,1281	1,25995
Training programs related to work are organized.	203	1,00	5,00	2,7438	1,14900
Employees are trying to improve themselves in competition.	203	1,00	5,00	3,0591	1,24934
Information about work is usually given orally.	203	1,00	5,00	2,8325	1,13954
I will take the instructions in writing in writing.	203	1,00	5,00	2,8177	1,15239
I know that I will be rewarded when I develop my business.	203	1,00	5,00	3,3793	1,30459

Concrete decisions can be reached at meetings.	203	1,00	5,00	2,9704	1,25828
Celebrations are being held for staff in the company. (Birthday, New Year, etc.)	203	1,00	5,00	3,1823	1,37922
I think that my working conditions are good.	203	1,00	5,00	2,9212	1,28729
I am able to do what I need to do during working hours.	203	1,00	5,00	2,5517	1,30916
I think social opportunities are sufficient. (Eating, drinking, transportation, etc.)	203	1,00	5,00	2,8374	1,30808
I do not have any difficulty in providing a vehicle rider to provide my work.	203	1,00	5,00	2,9655	1,31774
My work satisfies me financially.	203	1,00	5,00	2,9754	1,36592
My work satisfies me spiritually	203	1,00	5,00	2,6650	1,28051
When I get up in the morning, I go to work enthusiastically.	203	1,00	5,00	2,7044	1,18210
Health care provided to employees is sufficient	203	1,00	5,00	2,9212	1,27570
The physical conditions of work (heating, toilet) are sufficient	203	1,00	5,00	2,6700	1,35136
Duties distributions are made in accordance with the qualifications of the employees.	203	1,00	5,00	2,9557	1,36542
I am happy with the dialogue I have with my colleagues.	203	1,00	5,00	2,4236	1,22184
In this company, team work makes things easier.	203	1,00	5,00	2,7291	1,28606
Successful ones are rewarded in various ways in this company.	203	1,00	5,00	3,3596	1,35111

Events organized by staff are organized. (Conference, seminar, cocktail etc.)	203	1,00	5,00	2,8670	1,21339
Valid N (listwise)	203				

As it is seen in the table above, the average size of organizational communication is 3,1435. The organizational communication sub-dimensions have the highest average = 3,0172. The lowest is the average is empowerment with 2,6125.

The above table also shows the sub-dimensions of organizational burnout, mean and standard deviations, which are the other two dimensions of the study. Accordingly, general organizational burnout \bar{X} =2,8455. The highest average is depersonalization with \bar{X} =3,2294.

	1	2	3	4	5	6	7	8	9
Organizational communication	1								
Organizational Burnout	-,296**	1							
Empowerment	-,187**	,784**	1						
Team Orientation	-,098**	,784**	,598**	1					
Talent Development	-,197**	,810**	,547**	,636**	1				
Basic Evaluation	-,387**	,734**	,459**	,478**	,501**	1			
Harmony	-,325**	,890**	,652**	,629**	,662**	,573**	1		
Emotional exhaustion	,892**	-,272**	-,152**	-,117	-,183**	-,347**	-,317**	1	
Depersonalization	,881**	-,252**	-,184**	-,046	-,164**	-,339**	-,263**	,593**	1

** Correlation is significant at the 0.01 level (p<0,01)

To determine the analysis of this study, we investigated whether normal distribution is appropriate for the data. Non-parametric test methods were used for this study because the data were smaller than the limit value of 0.05 as a result of the study. Since this indicates that the normal distribution is not appropriate for the data, Sperman Rank Correlation coefficient is used for the correlation analysis. When the correlation analysis shown in the table is examined, it is seen that there is a relationship between organizational communication and organizational burnout subscales and at the same time there is a significance level of 0,99 between organizational communication subscales and burnout.

There is a negative and significant relationship between organizational communication and burnout ($p < 0.01$, $r = -0.296$). This significant relationship between organizational communication and burnout ($p < 0.01$, $r = 0.296$) supports the hypothesis scale (H1). It was found that there was a positive and meaningful relationship between depersonalization ($p < 0.01$, $r = 0.881$), and organizational communication which is another sub-dimension of burnout. When the relationship between the empowerment and burnout from the sub-dimensions of organizational communication is examined ($p < 0.01$, $r = 0.784$), it is seen that there is a positive and meaningful relationship. When we look at the relationship between team orientation and burnout ($p < 0.01$, $r = 0.784$), which is another sub-dimension of organizational communication, it is seen that there is a positive and meaningful relationship exists. One of the sub-dimensions of organizational communication is talent development and this sub-dimension has a positive and significant relationship with burnout ($p < 0.01$, $r = 0.810$). The research results support the hypotheses H1, H2, H3, H4, H5 and H6.

Conclusion

Organizations in the global world have to establish an effective organizational communication system to provide competitive advantage. Problems of absenteeism, abandonment and lack of pleasure in life are widespread in occupations that are not satisfied with their jobs. These problems, which result in an increase in labor turnover rates in public or private enterprises, can cause huge financial losses. One of the most precious assets is the human resource. Everywhere people need communication is needed. Communication efficiency and lack of communication have different consequences for organizations. While an effective and positive communication structure contributes to the realization of organizational goals, non-communication organizations will lead to exhaustion and inefficiency.

The purpose of this study is to determine the relationship between organizational communication and burnout. It turns out that there is a significant relationship between the variables that are considered to be related to each other and all the hypotheses of the research in the bulgous light are accepted. Therefore, the organization is thought to have a reciprocal and mutually influential relationship between communication activity and the burnout of employees. The survey covers the staff members of Erzurum Governorship and its affiliated units. Within this scope, a questionnaire was applied to the personnel working in Erzurum Governorship and its affiliated units within the scope of the survey.

Six hypotheses identified for the study were also supported. In general, it appears that there is a negative relationship between organizational communication and burnout, which are the two main variables of the research. Organizational communication has been found to be negatively related to burnout, and organizations with effective organizational communication have found to provide more job satisfaction on the job. As a result, managers should be more rigorous on this issue when assigning organizational communication systems at workplaces, and should control the organization to operate effective organizational communication to reduce organizational exhaustion. In addition, we would like to investigate this issue and we will have the same discussion with the larger population in different sectors. The attractiveness of today's businesses to this issue is important in terms of socio-economic development.

REFERENCES

- Andrews, Charles (2003). Comparative Analysis of Management and Employee Job Satisfaction and Policy Perceptions. Yayınlanmamış Doktora Tezi, University of North Texas.
- Ardıç, K. ve Polatçı S. (2008), “Tükenmişlik Sendromu Akademisyenler Üzerinde Bir Uygulama (Göü Örneği)”, Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 10 / 2 . 69-96.
- Arı Sağlam G., Tunçay A. (2010), “Yöneticiye Duyulan Güven Ve Tükenmişlik Arasındaki ilişkiler: Ankara’daki Devlet Hastanelerinde Çalışan İdari Personel Üzerinde Bir Araştırma” Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, Cilt: 24, Sayı: 4.
- Arı Sağlam, G., Çına, Bal E. (2008), “Tükenmişlik Kavramı Birey ve Örgütler Açısından Önemi”, Yönetim ve Ekonomi ,Cilt:15 Sayı:1 Celal Bayar Üniversitesi İ.İ.B.F. Dergisi, Manisa.
- Aytemiz Seymen, O. ve Kılıç, T. (2016), Sağlık Sektöründe, Tükenmişlik Sendromuna Etki Eden Faktörlerin analizi Ve Bir Araştırma”. Bandırma Onyedil Eylül Üniversitesi Yönetim ve Ekonomi Araştırmaları Dergisi Cilt 14, Sayı 3.
- Barlı, Ö. (2012). Davranış Bilimleri ve Örgütsel Davranış: 5. Baskı, Aktif Yayınevi, Ankara.
- Budak, G. ve Sürgevil, O. (2005), : “Tükenmişlik Ve Tükenmişliği Etkileyen Örgütsel Faktörlerin Analizine İlişkin Akademik Personel Üzerinde Bir Uygulama”, D.E.Ü.İ.İ.B.F. Dergisi Cilt: 20, Sayı:2, Ss:95-108.
- Çelik, E. ve Tuğrul B.: (2002), “Normal Çocuklarla Çalışan Anaokulu Öğretmenlerinde Tükenmişlik”. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, (2) Sayı:12
- Daft, Richard L.; (2001), “Organization Theory and Design”, 7th Edition, South-Western College Publishing, Cincinnati, Ohio
- Ersoy, A. ve Demirel Utku B. (2005), “Konaklama İşletmeleri Muhasebe Müdürlerinde Tükenmişlik Sendromu-1”, Muhasebe ve Finansman Dergisi; İstanbul .
- Ersoy, A. ve Demirel Utku, B. (2005), “Konaklama İşletmeleri Muhasebe Müdürlerinde Tükenmişlik Sendromu”, Muhasebe ve Finansman Dergisi; İstanbul.
- Garnett, James L; Justin Marlowe ve Sanjay K Pandey; (2008), “Penetrating the Performance Predicament: Communication as a Mediator or Moderator of Organizational Culture’s Impact on Public Organizational Performance”, Public Administration Review, Mar/Apr 2008; 68, 2; ABI/INFORM Global, pp. 266-281
- Goebel, Daniel J.; Greg W. Marshall ve William B. Locander; (2004), “An Organizational Communication-Based Model Of Individual Customer Orientation Of Nonmarketing Members Of A Firm”, Journal Of Strategic Marketing, 12, pp. 29–56
- Gürgen, Haluk; (1997), “Örgütlerde İletişim Kalitesi”, Der Yayınevi, İstanbul.
- Halsey, William; (1988), “Macmillan Contemporary Dictionary”, ABC Tanıtım Basımevi, First Edition, İstanbul.
- İlozor Doreen B; Ben D İlozor ve John Carr; (2001), “Management communication strategies determine job satisfaction in telecommuting”, The Journal of Management Development; 20, 5/6; ABI/INFORM Global, pp. 495-507
- Jo, Samsup ve Sung Wook Shim; (2005), “Paradigm shift of employee communication: The effect of management communication on trusting relationships”, Public Relations Review, 31, pp. 277–280
- Johlke, Mark C ve Dale F. Duhan; (2000), “Supervisor communication practices and service employee job outcomes”, Journal of Service Research: JSR; Nov; 3, 2; ABI/INFORM Global, pp. 154-165
- Kacmaz, N. (2005), “Tükenmişlik (Burnout) Sendromu”. İst.Tıp. Fak Derg. ;68: 29-32
- Kızıldere C. ve Kalay F. (2015), “İş Hayatındaki Tükenmişlik Sendromunun Ekonomik yansımaları: Bir Literatür Araştırması”, Gazi Üniversitesi Sosyal Bilimler Dergisi Vol/Cilt:2, No/Sayı:4.
- Mesut, Ç., Bayram, Ş., Mahmut, A., Oğuz, I. (2012), “Özel Bakım Merkezinde Çalışan Personelin Tükenmişlik ve İş Doyum Düzeylerine Yönelik Bir Çalışma Acıbadem Üniversitesi Sağlık Bilimleri Dergisi Cilt: 3 • Sayı: 1.
- Şenturan, L., Gülseven Karabacak, B., Ecevit Alpar, Ş., Sabuncu N. (2009), Hemodiyaliz Ünitelerinde Çalışan Hemşirelerin Tükenmişlik Düzeyi Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi, Cilt:2, Sayı 2.
- Yaman, H. ve Ungan M. (2002), “Tükenmişlik: Aile Hekimliği Asistan Hekimleri Üzerinde Bir inceleme” Türk Psikoloji Dergisi, 17 (49), 37 – 44
- Yücel F.G. (2006) Öğretmenlerde Mesleki Tükenmişlik ve Örgütsel Vatandaşlık Davranışı Afyon Kocatepe Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi.

The Testing of Efficient Market Hypothesis in Borsa Istanbul

Assist. Prof. Dr. Ali Akgün, Selcuk University, aakgun@selcuk.edu.tr

Assist. Prof. Dr. İ. Erem Şahin, Selcuk University, eremsahin@selcuk.edu.tr

ABSTRACT

The purpose of this study is to investigate the existence of the efficient market hypothesis in BIST 100, BIST Industry, BIST Service and BIST Financial indexes located in Stock Exchange Istanbul. The data related to the indices used in the study were taken as daily closing prices between 04.01.2010-02.11.2017 and the daily returns of the indices were calculated taking the closing prices into consideration. In the study, the volatility of the index returns will be tested with unit root tests and structural broken unit root tests and the results will be evaluated in terms of the efficient market hypothesis.

KEYWORDS: BIST, Efficient Market Hypothesis, Structural Break, Unit Root

1. INTRODUCTION

Stock exchanges, which have increased in importance in recent years due to funding especially for developing countries and which have financial resources in terms of companies, are considered as an alternative investment tool in terms of investors who want to evaluate their savings. Naturally, investors will want to get more returns from their investments. From this point of view, it is very important to determine the security prices correctly when calculating the gains. Stock exchanges, especially developed under the influence of globalization, brought the question of whether stock prices could be predicted in the future. The sharp increases in the capital movements that have flowed to the developing countries have brought about the discussions on the efficiency of these markets.

In the economic literature, until Samuelson (1965), no theory about the current price movements in capital markets has been developed. After Samuelson, in 1970, Fama's Efficient Market Hypothesis states that one of the key influences affecting securities prices is the information factor. When new data or information reaches the market in the efficient markets, this information is analyzed and evaluated by the market actors and a new market price is formed for the securities. This new market equilibrium price continues to exist as a new information tradition to be interpreted into the market.

In an effective market, Fama assumes that a new information arriving at the market arrives at the same level as all investors, and claims that traders who take position in the market can not earn more than normal. In the same way, markets have called effective markets in which securities react instantly, precisely and accurately, securities prices change by chance, and professional investors can not afford to earn on their own, in groups or independently. The trend of capital flows to equity markets, where this is true, has questioned the hypothesis of efficient markets in developing countries. In particular, investors who are active in financial markets attach importance to information efficiency and believe that information and risky parties are at different levels, further increasing the importance of the effective market hypothesis. In

addition, systematic anomalies (herd effect, over-reliance effect, day of the week effect, moon effect and weather effect etc.) do not occur in an active market, and the prices of securities are totally random in the market. For this reason, while investigating the validity of the effective market hypothesis, the studies in the literature focused more on the determination of anomalies and the fact that prices showed random walking characteristics. The systematic anomalies expected to emerge in the financial markets were excluded from the scope of this study and the focus on whether the prices of securities were showing random walk characteristics while investigating the validity of the effective market hypothesis. The most basic method of determining whether securities prices show random walk characteristics is to determine the degree of integration of the price series and it is revealed by means of this unit of integration unit root tests.

The most basic method for determining whether securities prices show random walk characteristics is to determine the degree of integration of the price series and it is revealed by means of this level of integration unit root tests.

Fama (1970) bases the efficient market hypothesis on the basis of random walk. The random walk theory is a theory that claims that the distribution of price movements is similar and independent of each other. Random walk can not be used to predict past price movements and trends in future markets. This approach was first mentioned by Kendall in 1953. Kendall (1953) concluded that, in his work using data sets of 22 commodity and stock prices, he moved randomly from one price series to another and there was a close relationship between price changes.

In an efficient market, all information can be obtained freely, and all traded securities can be bought and sold in the desired quantity and volume (Madura, 1998: 9). In efficient market tests, linearity is often tested. Theoretically, if the market can not predict the return of excessive securities, and all information is available to market participants, there is strong efficiency. In this context, it is argued that human behavior is linear. However, in real life the risk and return of investors is not linear (Champell et al., 1996; 22).

In the efficient market hypothesis, asset prices, which are defined as a function of information flow to the market, accept three assumptions. Primarily, investors are rational, have full knowledge about the markets and expect to maximize their benefits (Baal, 2009; 5 and Barone, 2003;1). According to the theory, the behavior of stock prices and returns is taken as the main indicator, for measuring the effectiveness of securities and stock exchanges. In this respect, the markets in which the current stock prices fully reflect the current information are considered effective. Investors are rational, and prices reflect the news, information and expectations on the market. Market participants determine a price by examining all data, so market prices contain available information and anticipations (Fama, 1970; 383). In general, a stock market is effectively defined if the prices of the stocks bought and sold on the market reflect all available information and prices react quickly or nearly without bias (Deckman and Dale, 1986;5). In this respect, the effective market hypothesis predicts two basic principles for estimating stock price movements. First of all, asset prices reflect the rational or real value of

securities. So stock prices are true. The second one is unpredictability. Based on this principle, it is not possible to estimate future price movements on the basis of available information (Thaler and Mullainathan, 2000, 7-8).

In the efficient market hypothesis, market efficiency occurs in three forms. These are weak market efficiency, semi-strong market efficiency and strong market efficiency.

In weak market efficiency, all price movements in the past are reflected in the price of the securities. At the weakest form of the market efficiency, which is the lowest level of the hypothesis, it is assumed that investors will not be able to earn above normal returns using past price movements. According to this, technical analysis, time series and similar analyzes and strategies do not work in the long run and there is no advantage (Karan, 2013, 280 and Maymin, 2011; 2). All information on stock prices is fully reflected in current prices. At such markets, investors can not reach new information at the same time. In addition, some information not disclosed to the public is known in advance by certain market participants (Fama, 1970; 383-384).

The Random Walk Theory suggests that price changes are random and unpredictable. The struggle of intelligent investors to reach new information on an ongoing basis and intense market competition is the starting point of this theory. If the prices on the market are based on rational reason, the new information will change prices. Therefore, prices will always be based on that moment's information. Thus, combined with the intense market competition, where information is open and free of charge, prices will be impossible to predict in advance. According to the random walk hypothesis, stock price changes are not related to past price changes. Random walk is used in testing weak market hypothesis (Karan, 2013; 281).

In a semi-strong form of market efficiency, the market price reflects all publicly disclosed information. It is the question of investors, who are described as insiders in such markets, primarily to have knowledge. Therefore, some market participants who acquire insider information may be able to earn a gain on the average market return using this information that the public does not know (Fama, 1970, 383-384).

In order to be able to say that a market is efficient in a semi-strong form, current prices need to reflect not only the course of past period prices, but also the information input which can be reached by all the public with the company at the same time. This implies an impartial reflection of the available information available to the public through stock market prices, newspaper articles, company forecasts and annual reports. Market efficiency in a semi-strong form is also related to balance sheet. Because the information on the balance sheet is generally open to the public, information that everyone can easily access. This information plays an important role in stock analysis. If a market is efficient in semi-strong form, no stock analysis should permanently yield a supernormal return. In order for the market to be effective in this sense, it is necessary for each individual to evaluate his knowledge in order to increase his profits in a competitive environment. In order to test the semi-strong market efficiency, information presented to the public and stock certificates are followed. If investors consistently provide excessive returns, this market is ineffective relative to the information advertised to the public.

For example, if a stock on a market provides excessive returns after the announcement of dividend distribution, then the market is not efficient in a semi-strong form based on the announcement of dividend distribution (Karan, 2013, 283-284).

According to *market efficiency in a strong form*, it is defined as the situation that reflects all the information that can be used to determine the real value of prices. In this case, the prices are not only publicly disclosed information but also all the information belonging to the economy. In addition, the information that the learners have is reaching all investors simultaneously. In such a market, no investor can predict the stock price more accurately than the other. Therefore, it is not possible to obtain excessive returns by performing technical and fundamental analyzes on such effective markets (Fama, 1970; 383-384). Similarly, in competitive asset markets, investors have rational expectations and prices reflect all the specific information about the value of the asset. For this reason, it is not possible for investors with rational expectations to be exploited by insiders (Laffont and Maskin, 1990; 85-87).

Strong form market efficiency is the most developed market efficiency. There are mechanisms that enable strong market efficiency. Competition between specially informed investors can ensure that prices reflect information input. In addition, other sources of information may substitute for private information. In addition, some features of the stock may make the privately funded information publicized. An example of this is the fact that investors who are not specifically informed use the stock price as a source of information. If uninformed investors realize that prices have risen, they can invest in that stock by understanding that good news about the rising stock price of the investor is being informed (Karan, 2013; 285).

Effective markets in weak, semi-strong and strong forms are not independent of each other. In order for the market to be effective in a semi-strong form, it must also be effective in its weak form, because all price movements must be predictable so that a cautious investor can benefit. Similarly, in order for the market to be efficient in its strong form, it needs to be efficient in both weak and semi-strong form. Otherwise, the price does not include all relevant information (Karan, 2013; 287).

2. LITERATURE REVIEW

There is a wide literature on efficient market hypothesis. These studies, which use different methods and different stock markets, can not produce a clear result. The effective market hypothesis is primarily determined for weak market efficiency by testing whether equity incomes exhibit random walk. For example, Poterba and Summers (1988), Grieb and Reyes (1999) and Shively (2003), are not found unit root in stock market index series unlikely, Liu et al. (1997) and Narayan and Smyth (2004) are the studies that reached the findings about the unit root existence. Vaidyanathan and Gali (1994) analyzed the daily closing prices of 10 stocks traded on the Bombay Stock Exchange for India using correlation methods. Findings obtained in the study of the weak form efficiency and the random walking process are the result of weak form efficiency. Choudhry (1994) analyzed individual stock indexes in Canada, France, Germany, Japan and Italy using the Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests and Johansen cointegration tests. Findings

obtained indicate that the markets are effective. Zhang et al. (2012) analyzed the prices of stocks in Egypt, Kenya, South Africa, Tunisia and Morocco for the period January 2000-April 2011. As a result of the study, evidence supporting weak efficiency in Kenya, South Africa and Tunisia has been reached.

The first study to test the random walking model belongs to Roberts (1959). Roberts (1959) found that the new information that caused changes in stock prices was rational and that changes in price level were in accordance with the random walk hypothesis.

Fama (1965) found that the consecutive price changes in the US stock price movements followed a random walk, resulting in the market being weakly efficient, in a study of serially correlated, run and filter run tests. Fama's study in 1970 gave similar results again.

Cerchi and Havenner (1988) have come to the conclusion that the stock price series is the unit root in the weakly efficient markets.

In the Panas (1990) study for the Greek stock market and Boumahdi and Thomas (1991) confirmed the weak market activity for the French stock market. Jeon et al. (1991) have proven the unit root for New York, London, Tokyo and Frankfurt stock exchanges.

In Fama (1991) study, he redefined market efficiency and enriched semi-strong form efficiency and strong form efficiency tests. Cham et al. (1997) found that these markets have weak form of efficiency as a result of unit root tests on stock prices in Hong Kong, South Korea, Singapore, Taiwan, Japan and the USA. Leigh (1997) concluded that the Singapore stock market was efficient in weak form. Ojah and Karamera (1999) have achieved parallel results in the Argentine, Brazilian, Chilean and Mexican markets.

Blasco and Santamaria (1996) used daily data to determine whether the stock and sub-sector index values of Spain had long memory characteristics between 1980 and 1993. In the case of stocks, the existence of long memories was explored using semi-parametric methods and the analysis did not reveal that the introduction of the Spanish stock market showed long memory.

Mobarek and Keasey (2000) found that the Dakar stock exchange, Ma and Bernes (2001) Chinese stock exchange, Kvedaras and Basdevant (2002) Estonia, Lithuania and Latvia stock markets, Gabriel (2002) Bucharest stock exchange, Abrosimova et al. (2005) have shown that the Russian stock market is not effective even in weak form. Al-Khazali et al. (2007) achieved results in parallel with weak form of efficiency in their work in eight Middle Eastern and North African countries.

Barkoulas, et al. (2000) investigated the validity of the weak market efficiency in the Greek stock market, using weekly data between 1981 and 1990. In the study of semi-parametric methods, they found that the Greek stock market was not effective in weak form. They also used the predicted integration parameter values in the ARFIMA models and determined that the ARFIMA model gave better results in the long-term forecast.

Weekly data were used by Resende and Teixeira (2002) between 1986 and 1999 in the study of the Brazilian stock market. The sample period in the study is divided into two sub-periods according to 1994, when the stabilization policies were implemented in Brazil. According to the results of the ARFIMA model, there was no evidence of the existence of long memory for both periods. The results shows us that the market is efficient.

Caporale and Gil-Alana (2004) used daily data from 1928 to 1991 in their studies of the S & P 500 index. Both the entire sample and the S & P 500 index return series are integrated in a piecewise fashion, according to the results obtained for the 1000 observed sub-samples.

Vougas (2004) investigated the existence of long-term dependence in the Athens stock market index using daily data between 1990 and 2000. According to the results of the ARFIMA and ARFIMA-GARCH models, no evidence of the existence of strong memories in the Athens stock market was found. Market was efficient.

Gil-Alana (2006) used daily data from 1986 to 1997 in his work on Amsterdam, Frankfurt, Hong Kong, London, New York, Paris Singapore and Japan stock exchanges. In the study using parametric and semi-parametric methods, the stock market index values of countries were found to be non-stationary.

Christodoulou-Volos and Siokis (2006) used daily data in their study of Turkey and 33 countries on the stock market. Semi-parametric methods found long-term dependence on stocks for 65% of all countries. However, according to the results they obtained for the ISE, they obtained very little information about the existence of long memory. It means that the market is weak form efficient.

Cajueiro and Tabak (2006) found that there is a long-term dependence on the index return series in the Chinese stock market.

Elder and Serletis (2007) used daily data from 1928 to 2006 in their studies on the Dow Jones index. By using the semi-parametric method and wavelet estimation method, they found that the degree of fragmented integration of the index is no different from zero.

Assaf (2007) used daily data between 1997 and 2002 when he worked on stock markets in Egypt, Jordan, Morocco and Turkey. In his work he used semi-parametric methods to determine the existence of fragmented construction in the return series of stock markets in these countries and accordingly indicated that these markets were ineffective.

Disario et al. (2008) used daily data between 1988 and 2004 in their studies on the ISE 100 index. In their studies using the wavelet method, they found the existence of long memory in the return series of the ISE 100 index and stated that the effective market hypothesis did not occur.

There are many studies on ISE (BIST) in the literature. These studies aim to test the effectiveness of weak form and semi-strong form using different methods for different sampling periods. Some of these studies are as follows.

In the study of Bekçioğlu and Ada (1985), autocorrelation analysis and run test were used and random walk hypothesis was rejected in Istanbul Stock Exchange. Moreover, it has been reached that the changes in stock prices in ISE did not change independently according to the time.

Cankurtaran (1989) tested the effectiveness in weak form and semi-strong form by using 1986.04-1988.06 data of nineteen stocks traded in the ISE.

In the Köse (1993) study, filter tests were conducted for forty- five firms traded in the ISE using daily stock closing prices in the 1990 - 1991 period. This has led to the conclusion that the weak form of the effective market hypothesis is not valid.

In Muradoğlu and Oktay (1993) study, ISE's weak form efficiency and calendar anomalies were tested.

Muradoğlu and Ünal (1994) studied the characteristics of distribution functions of return series of ISE stocks between 1988.01-1991.12 periods and concluded that return movements are separated from random walking model and ISE is not efficient in weak form.

In Balaban (1995) study, random walk hypothesis with weak form and semi-strong form efficiency of ISE was tested by using composite index between 1988.01 and 1994.08. As a result of the study, it is concluded that the ISE composite index is not active in weak form and semi-strong form.

Metin, Muradoğlu and Yazıcı (1997) and the daily closing prices between 04.01.1988-27.12.1996 were tested using ISE's weak form of efficiency, random walking hypothesis and weekly days effect.

In Özün (1999) study, the weak form of the ISE 100 was examined using the ISE 100 index daily data in the period 1987-1998.

In the study of Bakırtaş and Karpuz (2000), the econometric factors that may affect the value of the ISE index have been examined and the ISE has been found to be in weak form.

Cevik and Yalçın (2003) conducted a weak form efficiency test for the ISE with a stochastic unit root and steer filter approach. As a result, in any period except 1987, ISE was not found effective in weak form.

In the study of Zengin and Kurt (2004), the weak and semi-strong form of the ISE has been tested using the relations between the macroeconomic variables and the ISE 100 index between 1987.01-2002.09. Unit root tests were used in the study. It is reached that the ISE is in weak form and ineffective in semi-strong form.

Kahraman and Erkan (2005) tested random walk for ISE. In the study covering the period of 1996-2004, no random walk was observed for the ISE 100 at any time.

Atan, Ozdemir et al., (2006) found that Lo (1991) using the adapted R / S and GPH method has a weak form of the ISE 100 index.

Çelik and Taş (2007) investigated the weak form of efficiency in the developing countries in their study. In the study of 12 developing countries using weekly data for April 1998-April 2007 period in stock market, they tested sequence, unit root and variance ratio tests and weak form efficiency. Findings have been supporting poor activity in most countries.

Özdemir (2008) also found that the ISE is in weak form. In Özdemir study, he used LPF two broken unit root test, ADF unit root test, variance ratio test and running tests by taking the ISE 100 Index in January 1990 and June 2005 period.

Cevik (2012) tested parametric and semi-parametric methods to determine whether the effective market hypothesis is valid in the ISE. Semi-parametric and parametric long-memory model results show that the volatility of the sector's index returns has reached a long memory nature and it is understood that the effective market hypothesis does not work.

Zeren, Kara and Arı (2013) tested the weak form of the ISE 100 index with the structured breakdown unit root test in November 1987 and November 2012 period and found that the stock market was efficient.

Altunöz (2016) concluded that BIST Bank Index and BIST's study involving 8 banks had an effective market in weak form with another expression that price movements were rational.

Yucel (2016) investigated the weak form of efficiency for 22 indices selected from the indices calculated within the scope of Istanbul Stock Exchange between 2000 and 2015 and determined that the index was efficient in weak form.

Cloud (2016) analyzed whether the weak form of the effective market hypothesis is valid for the BIST index using the monthly breakdown of the period of 2003: 1-2015: 9 by structural breakdown unit root tests. According to the findings obtained, it is understood that the weak form efficiency is valid in BIST 100.

The studies conducted in our country in the literature are also more numerous studies proving the validity of the weak form of efficiency even if there are findings that the Stock Exchange Istanbul is not effective in weak form. In these studies, the random walk hypothesis was generally tested by means of unit root, variance ratio tests and Markov chains method, thus determining whether Stock Exchange Istanbul and the indices studied were weakly effective for selected periods.

3. DATA

In this study, the efficiency of the Turkish stock market was examined separately considering BIST 100, BIST Services, BIST Financial and BIST Industry indices. For this purpose, the daily closing prices of the indices are T.C. The Central Bank was provided by the Electronic Data Distribution System (EVDS), and the data used were taken daily observations (1970) of the indices between 04.01.2010-02.11.2017.

The indices used in the study and the number of companies are given in Table 1.

Table 1: Indices and Number of Companies Used in Work

Index Code	Index	Number of companies
XU100	BIST 100	100
XUHİZ	BIST Services	55
XUMAL	BIST Financial	88
XUSIN	BIST Industry	150

For each index, the return series is calculated by formula $r_t = 100 \times \ln(p_t / p_{t-1})$. In the formula, r_t the return of the index at time t represents, p_t the closing price of the index at time t and p_{t-1} the closing price of the index at time t-1. The descriptive statistics for the indices are given in Table 2.

Table 2: Descriptive Statistics of Index Returns

Descriptive Statistics	Inbist	Inxuhiz	Inxumal	Inxusin
Mean	0.028433	0.023353	0.021676	0.050065
Standart Dev.	1.465186	1.244618	1.719827	1.241039
Skewness	-0.546410	-0.691679	-0.368898	-1.104297
Kurtosis	6.917654	7.611143	5.686821	11.92480
Jarque-Bera	1235.156 (0.000000)	1730.498 (0.000000)	579.6633 (0.000000)	6311.575 (0.000000)

According to the results in Table 2, it was determined that the daily returns of all indices used in the study within the period covered are positive. The highest average daily return is seen in the BIST Industrial index. According to standard deviation values, BIST Financial Index volatility is determined as the highest index. It was determined that all the return series differ from the normal distribution according to the skewness and kurtosis values. Likewise, the Jarque-Bera test statistic supports the fact that the series are not normally distributed. Also, if the kurtosis value of the return series is greater than three, it means that the series are more steeply distributed than normal, which means that the distribution of the return series is thick-tailed.

The fact that the return series belonging to the indices are not distributed normally can intuitively indicate that the series can exhibit random walk. Traditional and structural break tests were carried out to examine whether the series exhibited random walk characteristics.

4. EMPIRICAL RESULTS

In our study, traditional unit root tests will be used first to test the effectiveness of indices in weak form. If there are unit roots in the series, it is said that the series show random walk, in other words, the indexes of the series provide weak form efficiency. In the case of structural

breaks in the series, conventional unit root tests can give erroneous results on unit root existence (Perron, 1989, Zivot and Andrews, 1992, Kasman and Kirkulak, 2007, Buberkökü, 2015). For this reason, Zivot-Andrews unit root test, in which the structural breaks are determined internally in our study, has been investigated and the unit root existence has been investigated by removing the errors that might arise about unit root existence.

Table 3 gives the results of conventional unit root tests. Since our series are the return series, the unit root tests of the related units were made with non-trending and non-intercept tests. Also we used the Akaike Info Criterion for the lag length criteria.

Table 3: Traditional Unit Root Results (ADF, PP, KPSS)

	Inbist		Inxuhiz	
	Level	1st difference	Level	1st difference
ADF	-43.1350 (0.0001)	-15.929 (0.0000)	-42.7413 (0.0001)	-15.375 (0.0000)
PP	-43.1587 (0.0001)	-585.92 (0.0001)	-42.7483 (0.0001)	-717.94 (0.0001)
KPSS	0.03130	0.04946	0.05093	0.11193
	Inxumal		Inxusin	
	Level	1st difference	Level	1st difference
ADF	-43.5791 (0.0001)	-16.155 (0.0000)	-13.9731 (0.0000)	-15.833 (0.0000)
PP	-43.6276 (0.0001)	-625.26 (0.0001)	-41.4679 (0.0000)	-474.37 (0.0001)
KPSS	0.03214	0.05488	0.04020	0.03336

Traditional unit root results support each other. From the results, the unit root hypothesis in the return series for ADF and PP tests was rejected at the 1% significance level. In the KPSS test, the unit root-free hypothesis was accepted at the 1% significance level. These results show that the series are stationary based on the traditional unit root results.

In Table 4 Zivot-Andrews test results are given. The Zivot-Andrews test is the structural break unit root tests. The unit was made in order to remove the mistakes that might arise in the case of root existence.

Table 4: Ziwot-Andrews Structural Break Unit Root Results

		Inbist			Inxuhiz		
		t statistics	critical value	Chosen break point	t statistics	critical value	Chosen break point
Ziwot-Andrews	Intercept	-43.19	-5.34 -4.93 -4.58	11.07.2013	-42.80	-5.34 -4.93 -4.58	27.01.2012
	Trend	-43.13	-4.80 -4.42 -4.11	18.12.2015	-42.73	-4.80 -4.42 -4.11	17.01.2013
	Intercept and Trend	-43.20	-5.57 -5.08 -4.82	21.10.2011	-42.81	-5.57 -5.08 -4.82	27.01.2012
		Inxumal			Inxusin		
		t statistics	critical value	Chosen break point	t statistics	critical value	Chosen break point
Ziwot-Andrews	Intercept	-43.64	-5.34 -4.93 -4.58	11.07.2013	-19.91	-5.34 -4.93 -4.58	14.07.2011
	Trend	-43.56	-4.80 -4.42 -4.11	14.12.2015	-19.85	-4.80 -4.42 -4.11	18.12.2015
	Intercept and Trend	-43.63	-5.57 -5.08 -4.82	21.10.2011	-19.93	-5.57 -5.08 -4.82	21.10.2011

The Ziwot-Andrews test results do not include unit root at the 1% significance level in all series, as t statistics are smaller than critical values for all indices.

For each series, break dates are given in the table for the both intercept, trend and intercept-trend.

5. CONCLUSION

According to the Efficient Market Hypothesis proposed by Fama (1970), while the stock price is formed in the capital markets, all the information related to the securities is reflected in the price formation and there is a price change in the market in line with this information. In addition to this, Fama (1970) defined three different activities as weak form, semi-strong form and strong form, and outlines knowledge while classifying the efficiency.

Indices used to study traditional unit root results are achieved as a result of not having a unit root. In this case, it can be said that there is no weak form of efficiency for each index used in the study. According to the results obtained, the analysis made with the return indices shows

that the volatility in the Borsa Istanbul is affected from past values and accordingly it is predictable. As a result of the findings, Borsa Istanbul is a weak form of inefficient market in terms of BIST 100, BIST Services, BIST Financial and BIST Industrial indices. In terms of investors, it can be said that Borsa Istanbul stocks are structured to be able to direct their investments by using past values.

REFERNCES

- Abrosimova, N., Dissanaik, G., & Linowski, D. (2005), "Testing The Weak Form Efficiency Of The Russian Stock Market", Social Science Research Network Working Paper.
- Altunöz, U. (2016), "Borsa Istanbul'da Zayıf Formda Etkin Piyasa Hipotezinin Testi: Bankacılık Sektörü Örneği", Uluslar arası Sosyal Araştırmalar Dergisi, Cilt:9, Sayı:43, 1619-1625.
- Al-Khazali, M., David, K., & Ding, C.S.P. (2007), "A New Variance Ratio Test Of Random Walk İn Emerging Markets: A Revisit", *The Financial Review*, 42(2): 303-317.
- Assaf, A. (2007). Fractional İntegration İn The Equity Markets Of MENA Region. *Applied Financial Economics*, 17, 709-723.
- Atan, S., Ozdemir, Z. ve Atan, M. (2009), Hisse Senedi Piyasasında Zayıf Formda Etkinlik: İMKB Uzerine Ampirik Bir Çalışma, *Dokuz Eylül Üniversitesi İktisadi Ve İdari Bilimler Fakültesi Dergisi*, Cilt:24, Sayı:2, Yıl:2009, Ss.33-48
- Baal, Ray. (2009). The Global Financial Crisis And The Efficient Market Hypothesis: What Have We Learned?, *Journal Of Applied Corporate Finance*, Forthcoming, (Pp.1-27) [Http://Papers.Ssrn.Com/_İd=1502815.Pdf](http://Papers.Ssrn.Com/_İd=1502815.Pdf) 17.03.2011
- Bakırtaş, T., & Karbuş, S. (2000). İMKB Endeksi'nin Ekonometrik Analizi. *İktisat, İşletme Ve Finans Dergisi*, 168: 56-66.
- Balaban, E. (1995), "Informational Efficiency Of The Istanbul Securities Exchange And Some Rationale For Public Regulation", *The Central Bank Of The Republic Of Turkey, Discussion Paper*, No: 9502.
- Barkoulas, J., Labys, W.C., Ve Onochie, J.I. (1999). Long Memory İn Future Prices. *The Financial Review*, 34, 91-100.
- Barone, Raffaella. (2003). From Efficient Markets To Behavioral Finance, *University Of Lecce Economics Working Paper* No. 46/24, December, (Pp.1-27) [Http://Papers.Ssrn.Com/_İd=493545](http://Papers.Ssrn.Com/_İd=493545), 17.01.2011.
- Bekçioğlu, S. and E. Ada (1985), "Menkul Kıymetler Piyasası Etkin Mi?", *Muhasebe Enstitüsü Dergisi*, Sayı 41.
- Blasco, N., Rio, D.C., & Santamaria, R. (1997). Random Walk Hypothesis İn The Spanish Stock Market: 1980-1992. *Journal Of Business Finance And Accounting*, 24(5): 667-684.
- Bulut, Ü., (2016). Testing the Weak Form of the Efficient Market Hypothesis: The Case of Turkey. *EconWorld 2016, Barcelona 1-3 February*. Conference paper.
- Büberkökü, Önder, (2015), "Türk Hisse Senedi Piyasalarının Etkinliğinin İncelenmesi: Çoklu Yapısal Kırılmalara Dayalı Bir Analiz", *Bankacılar Dergisi*, 93: 46-59.
- Cankurtaran, H. (1989), "Menkul Kıymetler Piyasalarında Etkinlik Ve Risk-Getiri Analizleri", *Sermaye Piyasası Kurulu Yeterlik Etüdü*.
- Caporale, G.M., Ve Gil-Alana, L.A. (2004). Long Range Dependence İn Daily Stock Returns. *Applied Financial Economics*, 14, 375-383.
- Cajueiro, D.O., Ve Tabak, B.M. (2006). The Long-Range Dependence Phenomena İn Asset Returns: The Chinese Case. *Applied Economics Letters*, 13, 131-133.
- Cevik, E. (2012). İstanbul Menkul Kıymetler Borsası'nda Etkin Piyasa Hipotezinin Uzun Hafıza Modelleri İle Analizi: Sektörel Bazda Bir İnceleme, *Journal Of Yasar University* 2012 26(7) 4437 – 4454
- Cham, K.C., Pan, M.S., & Gup, B.E. (1997). International Stock Market Efficiency And İntegration: A Study Of Eighteen Nations. *Journal Of Business Finance And Accounting*, 24(6): 803-813.
- Champell, Y. John, Andrew W. LO Ve Craig Mackinlay. (1996). *The Econometrics Of Financial Markets*, Princeton University Press.
- Cerchi, M., & Havenner, A. (1988). Cointegration And Stock Prices. *Journal Of Economic Dynamics And Control*, 12: 333-346.
- Christodoulou-Volos, C., Ve Siokis, F.M. (2006). Long Range Dependence İn Stock Market Returns. *Applied Financial Economics*, 16, 1331-1338.
- Choudhry, T. (1994). "Stochastic Trends And Stock Prices: An International Inquiry". *Applied Financial Economics*, 4:383-390.
- Çelik, T.T. And Tas, O. (2007), "Etkin Piyasa Hipotezi Ve Gelişmekte Olan Hisse Senedi Piyasaları", *İtü Dergisi*, Cilt:4, Sayı:2, P. 11-22.

- Çevik, F. Ve Y. Yalçın (2003), “İstanbul Menkul Kıymetler Borsası (İMKB) İçin Zayıf Etkinlik Sınaması: Stokastik Birim Kök Ve Kalman Filtre Yaklaşımı”, *Gazi Üniversitesi, İ.İ.B.F. Dergisi*, 1, 21 – 36.
- Deckman, R. Thomas and Morse DALE. (1986). *Efficient Capital Markets And Accounting: A Critical Analysis*, Second Edition, Prentice-Hall.
- Disario, R., Saraoglu, H., Mccarthy, J., Ve Li, H. (2008). Long Memory İn The Volatility Of An Emerging Equity Market: The Case Of Turkey. *International Financial Markets, Institutions Ve Money*, 18 (5), 305-312.
- Elder, J., Ve Serletis, A. (2007). On Fractional İntegrating Dynamics İn The US Stock Market. *Chaos, Solitons And Fractals*, 34, 777-781.
- Fama, E.F. (1965). Random Walks İn Stock Market Prices. *Financial Analysts' Journal*, 21(5): 55-59.
- Fama, E.F. (1970). Efficient Capital Markets: A Review Of Theory And Emprical Works. *Journal Of Finance*, 25(2): 383-417.
- Fama, E.F. (1991). Efficient Capital Markets: II. *The Journal Of Finance*, 46(5): 1575-1617.
- Gabriel, C.R. (2002). Testing For Romanian Capital Market Efficiency. Doktora Tezi, The Bucharest University Of Economic Studies.
- Gil-Alana, L. (2006). Fractional İntegration İn Daily Stock Market İndexes. *Review Of Financial Economics*, 15, 28-48.
- Grieb, T. and Reyes, M. (1999). “Random Walk Tests For Latin American Equity İndexes And İndividual Firms”, *Journal Of Financial Research*, 22:371–383.
- Kahraman, D. and M. Erkan (2005), “İstanbul Menkul Kıymetler Borsası'nda Tesadüfi Yürüyüş Testi”, *Celal Bayar Üniversitesi, İ.İ.B.F., Yönetim Ve Ekonomi Dergisi*, 12(1), 11 – 24.
- Karan, M.B. (2013). *Yatırım Analizi Ve Portföy Yönetimi*, Gazi Kitabevi, Ankara.
- Kasman, A., & Kırkulak, B. (2007). Türk hisse senedi piyasası etkin mi? Yapısal kırılmalı birim kök testlerinin uygulanması. *İktisat, İşletme ve Finans Dergisi*, 22(253): 68-78.
- Kendall, M. G. (1953). “The Analysis Of Economic Time Series,” *Journal Of The Royal Statistical Society (Series A)*, XCVI, 11-25.
- Köse, A. (1993), “Etkin Pazar Kuramı Ve İMKB'de Etkin Pazar Kuramının Zayıf Şeklini Test Etmeye Yönelik Bir Çalışma-Filtre Kuralı Testi”, *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, 22(2).
- Kvedaras, V., & Basdevant, O. (2002). Testing The Efficiency Of Emerging Markets: The Case Of The Baltic States. Eesti Pank Working Paper, No: 9.
- Kwiatkowski, D., Phillips, P.C.B, Schmidt, P., Ve Shin, Y. (1992). Testing The Null Hypothesis Of Stationarity Against The Alternative Of A Unit Root. *Journal Of Econometrics*, 54, 159-178.
- Leigh, L. (1997). Stock Market Equilibrium And Macroeconomic Fundamentals. IMF Working Paper.
- Liu, C., Song, S. and Romilley, P. (1997). “Are Chinese Stock Markets Efficient? A Cointegration And Causality Analysis”, *Applied Economic Letters*, 4: 511–515.
- Ma, S., & Barnes, M.L. (2004). Are China's Stock Markets Reallyweakform Efficient? CIES Discussion Paper, No:119.
- Madura, Jeff. (1989). *Financial Markets And Institutions*, West Publishing Co., Saint Paul. Samuelson, P. A., (1965), “Proof That Properly Anticipated Prices Fluctuate Randomly”, *Industrial Management Review*, 6 (2): Ss. 41–49.
- MaymıN, Philip Z. (2011). Markets Are Efficient İf And Only İf $P = NP$, *Algorithmic Finance*, Vol. 1, No. 1, NYU Poly Research Paper, (Pp.1-12).
- Metin, K., G. Muradoğlu Ve B. Yazıcı (1997), “An Analysis Of Day Of The Week Effect On The ISE”, *ISE Review*, 1(2), 15 – 27.
- Muradoğlu, G. Ve T. Oktay (1993), “Türk Hisse Senedi Piyasasında Zayıf Etkinlik: Takvim Anomalileri”, *Hacettepe Üniversitesi İktisadi Ve İdari Bilimler Fakültesi Dergisi*, 11, 51 – 62.
- Muradoğlu, G. Ve M. Ünal (1994), “Weak Form Efficiency İn The Thinly Traded Istanbul Securities Exchange”, *Middle East Business And Economic Review*, 6, 37 – 44.
- Mobarek, A., & Keasey, K. (2000). Weak-Form Market Efficiency Of An Emerging Market: Evidence From Dhaka Stock Market Of Bangladesh. ENBS Conference, Oslo.
- Narayan, P. Ve Smyth, R. (2004). “Is South Korea's Stock Market Efficient?”, *Applied Economics Letters*, 11:707–710.
- Ojah, K., & Karamera, D. (1999). Random Walks And Market Efficiency Tests Of Latin American Emerging Equity Markets: A Revisit. *The Financial Review*, 34(2): 57-72.
- Özdemir, Z. A., (2008), “Efficient Market Hypothesis: Evidence From A Small Open-Economy”, *Applied Economics*, 40: 633-641.
- Özün, A. (1999), “Kaos Teorisi, Hisse Senedi Getirilerindeki Doğrusal Olmayan Davranışlar, Zayıf İşlem Ve Gelişen Piyasa Etkinliği : İMKB Örneği”, *İMKB Dergisi*, 3(9).
- Panas, E. (1990). The Behaviour Of Athens Stock Prices. *Applied Economics*, 22(12): 1715-1727.

- Perron, P. (1989). The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis, *Econometrica*, vol. 57, no. 6, pp.1361-1401.
- Phillips, P.C., and Perron, P. (1988). Testing For A Unit Root In Time Series Regression. *Biometrika*, 75, 335-346.
- Poterba, J., & Summers, L. (1988). Mean Reversion In Stock Prices: Evidence And Implications. *Journal Of Financial Economics*, 22(1): 27-59.
- Resende, M., and Teixeira, N. (2002). Permanent Structural Changes In The Brazilian Economy And Long Memory: A Stock Market Perspective. *Applied Economics Letters*, 9, 373-375.
- Roberts, H. (1959). Stock Market Patterns And Financial Analysis: Methodical Suggestions. *Journal Of Finance*, 14(1): 1-10.
- Shively, P. (2003). "The Nonlinear Dynamics Of Stock Prices", *The Quarterly Review Of Economics And Finance*, 43: 505–517.
- Thaler, R. and Mullamathan, S. (2000). Behavioral Economics, *Massachusetts Institute Of Technology Department Of Economics Working Paper Series*, Working Paper: 00-27, September.
- Vaidyanathan, R., Ve Gali, K. K. (1994). "Efficiency Of The Indian Capital Market", *Indian Journal Of Finance And Research* , 5(2):35-38.
- Vougas, D.V. (2004). Analysing Long Memory And Volatility Of Returns In The Athens Stock Exchange. *Applied Financial Economics*, 14, 457-460.
- Yücel, Ö., (2016). Finansal Piyasa Etkinliği: Borsa İstanbul Üzerine Bir Uygulama. *International Review of Economics and Management*. Volume:4, Number:3, 107-123.
- Zengin, H. Ve S. Kurt (2004), "İMKB'nin Zayıf Ve Yarı Güçlü Formda Etkinliğinin Ekonometrik Analizi", *Öneri Dergisi*, 21(6), 145 – 152.
- Zeren, F., Kara, H., and Arı, A., (2013), "Piyasa Etkinliği Hipotezi: İMKB için Ampirik Bir Analiz", *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, Sayı:36, Nisan, 141-148.
- Zivot, E., & Andrews, D. W. (1992). Further Evidence On The Great Crash, The Oil-Price Shock, And The Unit-Root. *Journal Of Business & Economic Statistics*,10(3), 251-270.
- Zhang, D., Wu, T. C., Chang, T. Ve Lee, C.H. (2012). "Revisiting The Efficient Market Hypothesis For African Countries: Panel SURKSS Test With A Fourier Function", *South African Journal Of Economics* , 80(3):287-300.

Robotic Manipulator Trajectory Analysis Using Motion and Termination Design Variables for Performance

Hayder Zghair, University of Baghdad, Kettering University, Lawrence Tech University
Ahad Ali, Lawrence Tech University
Emad Attalla, Sterling Heights Assembly Plant

ABSTRACT

In this research, full factorial design of experimentation is detailed and conducted utilizing a FANUC Robot R-J3iB control system in a real-world plant facility of the automotive industry, in order to create and run a program that picks up permanent manufactured module parts of a vehicle from the loading inventory to the operation space and then trace possible trajectories. The experimental test has been replicated eight times, each with varying motion component and termination mode variables for a similar design of the expected robotic behaviors. Consistency and cycle of each processing time then measured for the running programmed. The observing measurements then empirically analyzed depending on a set of hypotheses. The results analysis shows that the linear programming of the motion types provides more consistency in the performance with either CNT or FINE termination types, along with 1000 mm/sec speed, also creates the most accurate result with the fastest cycles of the processing time of the robotic cell.

KEY WORDS: Robotic Consistency, Robotic Operating, Termination, Motion Type

1. INTRODUCTION

The consistency and cycle of processing time drawback of basic robotic function which are variables in industry that can lead to lengthy down time, all of which add cost to the process. (Andrew Perks, 2003) address the robotic performance drawback by looking at incorporating vision assistance into the system. Additional source of information for the robot would allow for it to account for random variation in the process and adapt in real time, limiting any downtime that may have been previously caused by such variations in the process. In the past components needed to be set in a pick-up position that could not be deviated from, else the robot would fault and cause issues. Through their experimentation, they found that the use of vision assistance led to the elimination of set pick-up positions by allowing the system to account for the differing positions of components in real time. In the case of our experiments, this tool would have allowed for much more accurate results, and would remove most sources of variation.

With such concepts proven to work in a laboratory setting, the next step would be to implement this solution into real industry scenarios, (Young-Suk Kin et al., 1998) do exactly this by studying the use of vision assistance on robots used to seal cracks on the street. They detail similar findings as seen in laboratory study, but in real life scenario where variation in a process can be extreme, which a standard program would be insufficient for. Their paper goes on to confirm the effectiveness of such aids to robotic processes, and help confirm the findings in our own experiments that additional sources of information are needed for the robot's program in order to remove additional sources of variation and get the most accurate and repeatable process

possible. The use of sensors can greatly improve the consistency of a robot. External sensors track the movement of a robot and send feedback to the computer (Szewczyk, 2015). That feedback can then be used to calculate a new movement of the tool. A program can be created which calculates the elastic deflection and kinematic parameters, thus allowing for a greater accuracy in the movement of the robot (Duelen, 1993). An offline algorithm can be created that calculates the contouring of the robot tool. This method helps to increase the speed by calculating max torque outputs at variable velocities (Munasinghe, 2002). Robot language ORBIX can be used to further increase accuracy (Furita, 1985). (Heping Chen, 2011) proposes a new transformative programming method which is based on existing programming methods. The programming for surface manufacturing processes like spray painting, rapid tooling, and polishing is very time consuming and costly with the traditional offline programming methods. The robot programs in a manufacturing line are quite similar. In the proposed method, the programmer uses experiences and data from the existing robot programs. The existing programs are all collected in a database and the programmer only has to adapt the old program to the new manufacturing process. To use existing information accumulated over the years saves a lot of resources in the programming process. (Kaltsoukalas, 2015) introduces an algorithm for planning an optimal motion of the robot manipulator. The growing number of flexible manufacturing systems in the past years requires high programming efforts. This issue increases the need for intelligent algorithm that propose the manipulator's path. The algorithm combines the joints values and provides the optimal robot path. The large search space is reduced by a set of parameters. In this method many different criteria influence the optimal robot path towards the desired position. An inexperienced worker can easily find a path for the robot manipulator that fulfills all required criteria. (Nilakantan, 2015) proposes an algorithm for saving time and energy resources in a robotized assembly line. Referring to the optimization of a robot path, ignore energy-related optimization. The Particle Swarm Optimization algorithm compares a time-based model and an energy-based model referring to the performance. Results are presented in a table and a figure. The purchased algorithm not only allows improvements in minimizing cycle times but also in minimizing total energy consumption. In this research work, the question of which parameters influence the consistency and cycle processing time of a robot process and the objective is to investigate which effects of the parameters have and how strong the influence. Knowing the crucial parameters, influencing the consistency and the cycle, means that effective actions can be taken to reach a better robot process. But as well it becomes easier to predict the outcomes of a robot process for the manufacturing companies.

2. INPUT VARIABLES ANALYSIS

Design of the robotic work-cell in the case of the experiment is previously determined to be similar for the real-world characteristics of the orientation and location of the robotic arm within the product and robot manipulator. However, the location of the pen holder as the tool holder and the box as the product are determined for the analysis. Experimentally, it is pertinent to have the location of the pen holder and box in the same location so that any variation being introduced into the experiment is kept at a minimum. In the case of the pen holder placed

between two metal pillars screwed to the fingers, ensuring that if it was moved, the original location could be reproduced. For the box, the location is chosen so that the robotic manipulator had full reach of the area, and then is held in place using push-pins along its perimeter to make sure it is not moved. The most difficult part of the experiment to control is the placement of the box, as any movement from run to run would throw off the data dramatically. To ensure the situation does not happen, the box is placed away making its placement very easy to replicate the next runs.

During the real-world operation analysis, the basic robotic functions and programming capabilities for manufacturing/assembling a particular design have been analyzed, with the culminating potentials being to program the robot utilizing the teach pendant and computer central unit to draw the robotics expected trajectory and using the result to draw similar path that can simulate the reality. Beyond setting up a program in order to run the operation, the research work also considers determining what settings such as motion type and speed affect and affect the accuracy as well as the cycle time of the robotic program. Therefore, a 2^k experiment has been designed and completed utilizing different motion types, speeds and termination types. The information collected from the experiments is then compiled and analyzed to determine which settings had an effect on the overall consistency of the trajectories, as well as the cycles of the overall program. The hypotheses are tested via a 2-sample test with a 95% confidence interval to determine whether to reject or not reject the null hypothesis.

The following hypotheses are tested:

H1₀: Robotic consistency (mm) is independent of the variation in motion components,
H1₁: Robotic consistency (mm) is dependent of the variation in motion components.

H2₀: Robotic cycle processing time (sec) is independent of the variation in motion components,
H2₁: Robotic cycle processing time (sec) is dependent of the variation in motion components.

H3₀: Robotic consistency (mm) is independent of the variation in termination types,
H3₁: Robotic consistency (mm) is dependent of the variation in termination types.

H4₀: Robotic cycle processing time (sec) is independent of the variation in termination types,
H4₁: Robotic cycle processing time (sec) is dependent of the variation in termination types.

The design of this experiment was incredibly important, as any variation in timing or measurement skews the data collected dramatically, leading to influencing results. Therefore, the starting and stopping points for the cycle are created as the same point to ensure that the timing is simple and accurate. Additionally, the joint speed is set at 30% for all runs, as well as the program being running off step mode to ensure that there is no human intervention increased or decreased times while testing. While conducting each run, the pen is made sure to be in the same orientation in the pen holder, as well as it being grabbed using the same way as to ensure the same processing ability for each run.

3. RESEARCH APPROCH

The experiments are conducted in the following steps. Within the step in the experiment, the teach pendant used to program a path for the robotic tool. Figure (1) shows the test setup of the similar trajectories for analyze the robotic programming performance as follows:

Step	Step Detail	Value
1	Home Point	
2	Point behind pen	
3	point above pen	
4	Wait	3 seconds
5	open	
6	move down	
7	wait	
8	close	
9	pen above	
10	pen @ point 1	
11	pen @ point 2	
12	pen above point 2	
13	pen @ point 3	
14	pen @ point 4	
15	pen above point 4	
16	pen @ point 5	
17	pen @ point 6	
18	point above point 6	
19	pen @ point 7	
20	pen @ point 8	
21	pen @ point 9	
22	pen @ point 10	
23	pen above	
24	move down	
26	open	
27	point above pen	
28	Wait	3 seconds
29	close	
30	Home point	

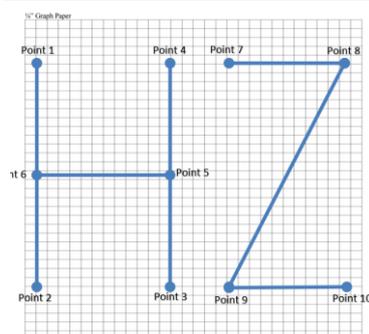


Figure 1. Experimentation Setup of Testing the Similar Trajectories

The same program has been experimented for all 8 of the runs, with each run varying in motion type, termination type or speed. Table (1) shows combinations used for the design of experimentation:

Table 1. Design of the Experimentation of Similar Trajectories

Run #	Termination Type	Motion Components
1	FINE	500 mm/sec
2	FINE	1000 mm/sec
3	CNT	500 mm/sec
4	CNT	1000 mm/sec

To understand the functions of the programming commands, the results can be used to determine the best programming combination when consistency or cycle processing time of the robotic system is the design importance. Some scenarios may require less consistency and a faster cycle and others may require consistency with less focus on cycle time. From that, experimental results are determined that linear motion type can be preferred in almost every scenario because it decreases cycle time and provides a more stable consistent path. Also a maximal speed can be used if possible because of the lower cycle time and the little effect on consistency. If consistency is needed the fine termination type can be chosen. If cycle time is important the continuous method should be employed. Figure (2) shows the relationship between the two parameters and why one of the parameters can be chosen over another in certain scenarios.

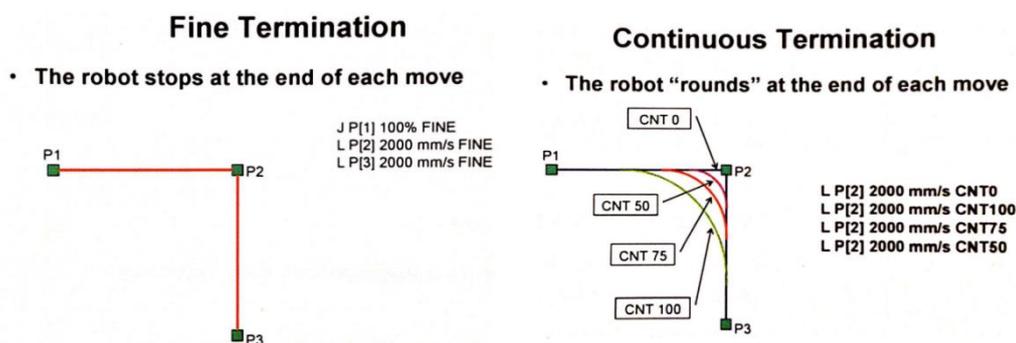


Figure 2. Selected Parameters of the Robotic Programming Performance

Each run conducted at 100% joint speed as absolute robotic speed, and with the box in the same location to reduce any variation in the process. Cycles processing time have been recorded in the robot began to move from its home position, until it returned home. Once the experiment conducted the averages of the times and distances of the specified trajectory is recorded for each run. For the experimentation, the distance is determined to be the distance from the specified trajectory to the center of the marked trajectory. The largest distances from the trajectory is recorded and summed to be compared to the other runs. To properly conduct the experimentation, several assumptions had to be made so that collected data can be feasibly analyzed. In this case the following assumptions were made: each run of the experiment is conducted with the box in the same location; each run of the experiment is conducted with the pen taped in the same location; the pen is in the same orientation for each of the runs; the robot was in home position for each run; the timer was started the moment the program was started; and with these assumptions made the collected data can be analyzed and a conclusion made.

4. RESULTS ANALYSIS

The collected data has been analyzed using Minitab statistical software, utilizing the two-sample t-test as well as two-sample variance test. Hypothesis tests for consistency and cycle time vs speed are conducted individually for linear motion types, as the speeds are in differing units. All other hypothesis tests are conducted with all data points.

H1₀: Robotic consistency (mm) is independent of the variation in motion components,
H1₁: Robotic consistency (mm) is dependent of the variation in motion components.

Method	DF1	DF2	Statistic	P-Value
Bonett	1	–	0.00	0.986
Levene	1	6	0.29	0.611

Based on the above test, the variances between motion components are not significantly different. Two-Sample T-Test and CI: Consistency (mm), Motion Type:

Type	N	Mean	StDev	SE Mean
Joint	4	2.793	0.478	0.24
Linear	4	0.992	0.483	0.24

Difference = μ (Joint) - μ (Linear)
 Estimate for difference: 1.800
 95% CI for difference: (0.969, 2.631)
 T-Test of difference = 0 (vs \neq): T-Value = 5.30 P-Value = 0.002 DF = 6
 Both use Pooled StDev = 0.4805

Based on the above test, rejecting the null hypothesis and conclude that the consistency between Joint and Linear motion differs significantly with 95% confidence.

H2₀: Robotic cycle processing time (sec) is independent of the variation in motion components,
H2₁: Robotic cycle processing time (sec) is dependent of the variation in motion components.

Method	DF1	DF2	Statistic	P-Value
Bonett	1	–	28.38	0.000
Levene	1	6	243.15	0.000

Based on the above test, the variances between motion types differ significantly. Two-Sample T-Test and CI: Cycle Time (sec), Motion Type:

Type	N	Mean	StDev	SE Mean
Joint	4	69.25	2.06	1.0
Linear	4	110.0	38.9	19

Difference = μ (Joint) - μ (Linear)
 Estimate for difference: -40.8
 95% CI for difference: (-102.7, 21.2)
 T-Test of difference = 0 (vs \neq): T-Value = -2.09 P-Value = 0.127 DF = 3

Based on the above test, rejecting fails to the null hypothesis and conclude that the cycle time is not significantly different between Linear and joint motion with 95% confidence.

H3₀: Robotic consistency (mm) is independent of the variation in termination types,
H3₁: Robotic consistency (mm) is dependent of the variation in termination types.

Method	DF1	DF2	Statistic	P-Value
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Bonett	1	–	2.12	0.145
Levene	1	6	6.29	0.046

Based on the above test, the Bonnett fails to reject the null, while the Levene rejects the null. We will assume non-equal variance. Two-Sample T-Test and CI: Consistency (cm), Termination Types:

Types	N	Mean	StDev	SE Mean
CNT	4	1.992	0.693	0.35
Fine	4	1.79	1.45	0.73

Difference = μ (CNT) - μ (Fine)
 Estimate for difference: 0.200
 95% CI for difference: (-2.036, 2.436)
 T-Test of difference = 0 (vs \neq): T-Value = 0.25 P-Value = 0.816 DF = 4

Based on the above test, rejecting fails to the null hypothesis and conclude that Termination type does not have a significant effect on Consistency with 95% confidence.

H₀: Robotic cycle processing time (sec) is independent of the variation in termination types,
 H₁: Robotic cycle processing time (sec) is dependent of the variation in termination types.

Method	DF1	DF2	Statistic	P-Value
Bonett	1	–	0.00	0.950
Levene	1	6	0.01	0.943

Based on the above test we can conclude that the variances between Cycle times do not differ significantly. Two-Sample T-Test and CI: Cycle Time (sec), Termination Types:

Types	N	Mean	StDev	Mean
CNT	4	87.0	35.4	18
Fine	4	92.3	36.7	18

Difference = μ (CNT) - μ (Fine)
 Estimate for difference: -5.3
 95% CI for difference: (-67.7, 57.2)
 T-Test of difference = 0 (vs \neq): T-Value = -0.21 P-Value = 0.844 DF = 6
 Both use Pooled StDev = 36.0942

Based on the above test, rejecting fails to the null hypothesis and conclude that termination type does not significantly affect the cycle time with a 95% confidence.

When optimizing a design based on consistency the main effects of motion, termination and speed should be considered. Since there is no significant interaction, the best consistency can be chosen from the main effects plot. Figure (3) shows the difference between the low and high parameter levels for motion, termination. The most critical parameter regarding speed is motion type. There no much effect for the other parameters. That can be due to human error, but the opposite than expected result happened for the termination. The CNT method showed more consistency than the termination type. This could also be due to the fact that there might be an interaction between motion type and termination. More replications and or repetitions

would need to be used to verify the hypothesis. Figure (4) shows the interactions that have no significant effects because of the plotted relationships are mostly parallel.

Figure (5) shows the motion parameter is the most significant, and then the interaction between motion and speed. The next most significant is the interaction between motion and termination. Since the interactions are significant they must be used to determine the best combination to make the lowest cycle time. The interaction effects can be seen as Figure (6).

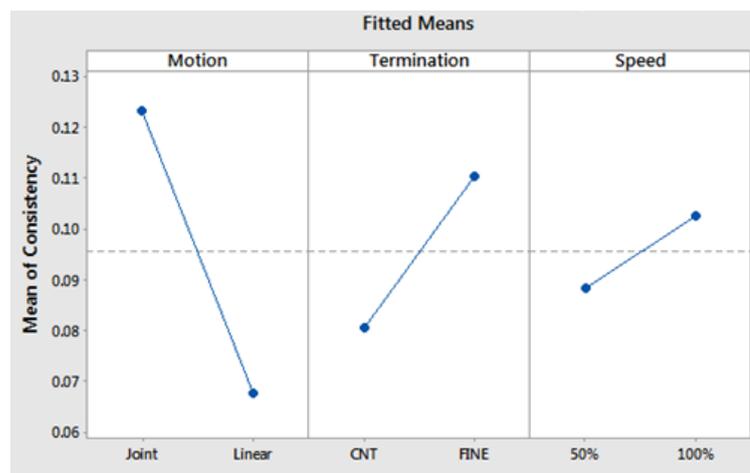


Figure 3. Main Effects plotting of the parameters with the Consistency

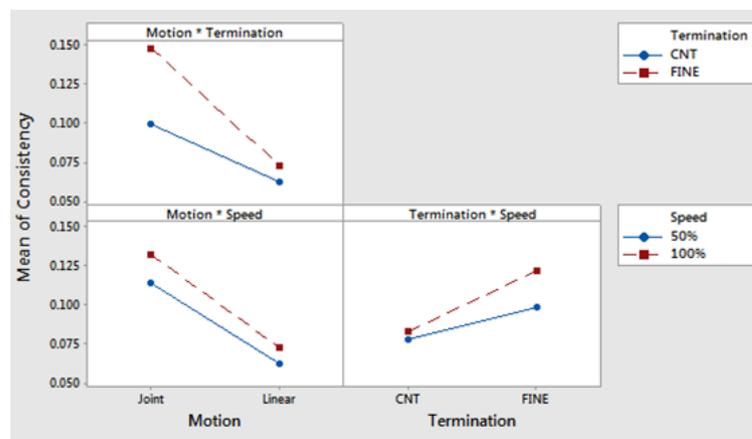


Figure 4. Interaction Effects plotting of the parameters with the Consistency

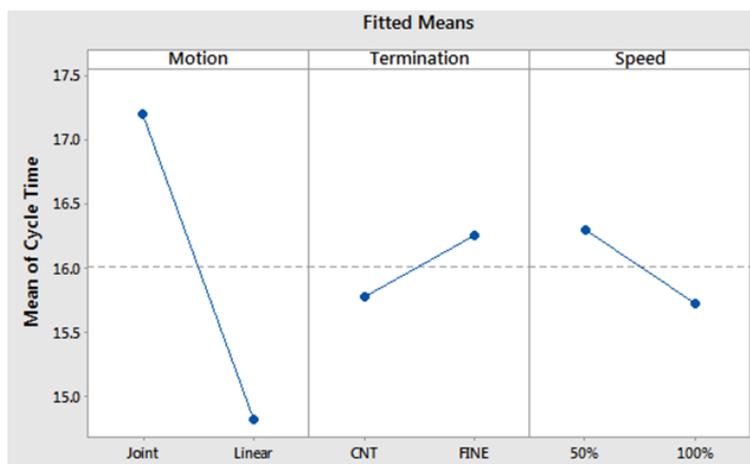


Figure 5. Main Effects plotting of the parameters with the Cycle Processing Time

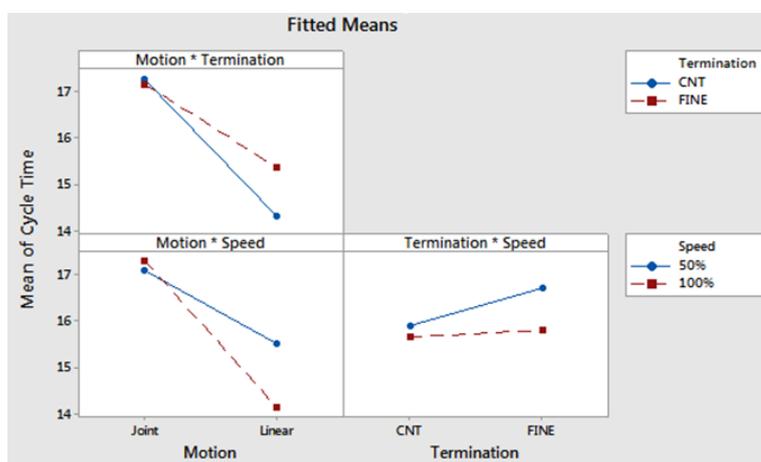


Figure 6. Interaction Effects plotting of the parameters with the Cycle Processing Time

Looking at the experimentation results and the way are conducted, several issues come to the mind that the first biggest issue has been notified with the experiment is the possibility of variation and skewed results that could be caused by the box moving within the work cell. As the box was not secured down to the work cell, it was very easy for it to shift from the robot processing on it, or the application or removal of the pen. To ensure in the future that this is not the case, simply securing the box to the table using screws is completely remedy the issue and ensure correct results. The other glaring issue with the experiment after its completion was the pen and its shape. With the tip of the pen being taped, instead of coming to a definitive point in the center of the pen, continuous runs of the program led to the tip being depressed and deformed. That led to the pen at times not processing properly or at all if the orientation was a bit off in the claw of the machine. To remedy this in the future, using a regular sharpie pen with a centered tip is recommended that is more resilient to being depressed or deformed, as well as having the orientation and location of the tip the same for each consecutive run of the program. After completing the 2^k experiments, one of the main observations being that the robots lack of

ability to count the variability introduced from the numerous sources such as the box moving or the pen not being in the exact same spot as the times before.

5. CONCLUSION AND RECOMMENDATIONS

Taking a broad look at the data collected and its analysis, the conclusion can be made that to create the most accurate product, the linear motion type with either FINE or CNT need to be used with the 1000 mm/sec speed setting as linear produced the most accurate results. Looking at the hypothesis tests, it can confirm that the choice between fine and CNT is not significant, and therefore either can be chosen for the programming. Additionally, the hypothesis testing shows that the difference in accuracy between the 500 and 1000 mm/sec speed for linear motion is not significantly different. It is however proven that the difference in cycle time between the two is significant, with the cycle time for 1000 mm/sec being much less than that of the 500 mm/sec speed setting. Utilizing the faster of the two speeds then in the case is yield a product with identical accuracy, while taking a fraction of the time overall. After completing analysis of the results, the following can be concluded:

- Robotic cycle processing time is not significantly different between linear and joint motion,
- Robotic consistency is not significantly affected by termination type,
- Robotic cycle time is not significantly affected by termination type,
- Robotic consistency is not significantly affected by changes of speed using the joint motion type,
- Robotic consistency is not significantly affected by changes of speed using the linear motion type,
- Robotic cycle time is not significantly affected by changes of speed using the joint motion type,
- Robotic cycle time is significantly affected by changes of speed using the linear motion type.

REFERENCES

- Andrew Perks, (2006) "Advanced vision guided robotics provide "future-proof" flexible automation", *Assembly Automation*, Vol. 26 Iss: 3, pp.216 - 220
- Kim, Y., Haas, C. T., & Greer, R. (1998). Path Planning for Machine Vision Assisted, Teleoperated Pavement Crack Sealer. *Journal of Transportation Engineering*, 124(2), 137-143. doi:10.1061/(asce)0733-947x(1998)124:2(137)
- Duelen, G., & Schroer, K. (n.d.). *Robotics and computer -Integrated Manufacturing*. Oxford: Pergamon.
- Furuta, K., Kosuge, K., & Yamakita, M. (1985, January 01). Trajectory tracking control of robot arms using ORBIX. Retrieved from <http://adsabs.harvard.edu/abs/1985JRoS....2...89F>
- Munasinghe, S. R., Nakamura, M., & Goto, S. (2002). Optimum contouring of industrial robot arms under assigned velocity and torque constraints (Vol. 32). *IEEE Xplore*.
- Szewczyk, R., Zieliński, C., & Kaliczyńska, M. (2015). Progress in automation, robotics and measuring techniques. *Robotics*. Cham: Springer.
- Chen, H., & Sheng, W. (2011). Transformative CAD based industrial robot program generation. *Robotics and Computer-Integrated Manufacturing*, 27(5), 942-948.
- Kaltsoukalas, K., Makris, S., & Chryssolouris, G. (2015). On generating the motion of industrial robot manipulators. *Robotics and Computer-Integrated Manufacturing*, 32, 65-71.
- Nilakantan, J. M., Huang, G. Q., & Ponnambalam, S. G. (2015). An investigation on minimizing cycle time and total energy consumption in robotic assembly line systems. *Journal of Cleaner Production*, 90, 311-325.

Theoretical Concept of Hedonic Consumption

Assist. Prof. Dr. V. Özlem Akgün, Selçuk University, ozlemakgun@selcuk.edu.tr
Lecturer Meltem Diktaş, Selçuk University, meltemozmen@hotmail.com

ABSTRACT

Traditional marketing perception and consumption habits have changed radically due to some improvement that industrial societies took place of the agricultural societies with the Industrial Revolution, then global influences increased, distance lost its significance, intermediaries decreased and information became the intellectual capital. The hedonic consumption, which can be expressed as a reflection of modern consumption, expresses a concept based on the fact that in the consumption actions today's customers do not move with only physical satisfaction feeling while buying products or getting services, and psychologically they make buying decisions with pleasure motive. In this study, subheadings such as hedonic consumer behaviors, motivations of hedonic consumption and factors affecting hedonic consumption are examined from a theoretical point of view under the heading of hedonism and hedonic consumption concepts and it is aimed to contribute to the literature.

KEYWORDS: Consumption, Hedonism, Hedonic Consumption

1. INTRODUCTION

The consumption habits of the human being, who is the only living thing in nature fulfilling the behavior of consumption consciously, have changed over time. That is to say, the traditional consumer acting only with the purpose of meeting his/her needs gave its place to modern consumer acting with the motives of taking the advantage of the consumption action and enjoying the consumption action. It has become essential for producers and marketers to observe their existing strategies due to some reasons such as the homogenization of products and services by resembling each other as well as the shortening of the product life cycles, the large number of competitors in the market, the consciousness of the consumer. With the development of information technology, today's consumer has been able to shop 7/24 without space and time limits using computers, tablets or even mobile phones. Since the consumers are not only dependent on the stores that exist in physical sense, the consumption habits have changed radically and the customers have turned to hedonic approach. In its simplest form, hedonist consumption is a marketing concept which refers to the act of consuming performed not only with the intention of meeting the need but with the intention of liking, enjoying and being happy with it. In other words, today's hedonist consumer is no longer interested in just the physical characteristics of the product while buying a product, but also what those characteristics of the product represent.

In the current era, the new consumer who is sometimes self-indulgent and in the search of simplicity wants to experience different experiences even in buying standard products or getting standard services and in consumption, and often wants to participate in the production process of services in order to get a product suitable for himself/herself. However, today's

consumer engages in a very different meaning transfer under the interaction of global and local cultures, and the targets of consumption actions can be changed in this process, and even in the consumption activities in everyday life, the behaviors of being conspicuous, spending extravagantly and taking pleasure have become prominent (Torlak et al., 2006: 13). During shopping, consumers can choose a product which they do not need because of its attractive and flashy presentation and they can perform buying behavior. Traditionally, many values that determine consumer attitudes and behaviors are said to be radically changing within today's modern marketing conception. In other words, the traditional definition such as "consumption is a planned behavior" has left its place to the definition that "consumption is an action that can be done to be happy except being a necessity".

2. HEDONISM AND HEDONIC CONSUMPTION FROM A CONCEPTUAL FRAMEWORK

The concept of hedonism which extends to Ancient Greece, which is derived from the word "hedone" in Greek and known to have developed in the 4th century is a way of thinking which argues that pleasure feeling is a good thing in the strict sense, people behaviors should be planned in a way that they are pleasing and turning to the pleasing behavior is the right way of behaviour. It is known that hedonism has two different aspects as philosophical hedonism and psychological hedonism. While the philosophical aspect which argues that hedonism is a system of philosophy of choosing the pleasure emphasizes that the aim of the individual is to achieve pleasure at the highest level, the psychological hedonism can be expressed more clearly with motivation. That is to say, human being is motivated to achieve the things that he enjoys or take pleasure by his nature (Odabaşı, 1999: 78-79; Ünal and Ceylan, 2008: 266; Özdemir and Yaman, 2007: 82).

According to another point of view, hedonism can be examined in two different types such as modern hedonism and traditional hedonism. The pleasure which can be explained by basic and clear pleasure search and which is achieved by senses such as seeing, smelling, hearing, touching, tasting, etc. is expressed as traditional hedonism. On the other hand, the achievement of the pleasure by emotions instead of senses regardless of the physical satisfaction can be explained as modern hedonism. That is, while the pleasures of abundance and enthusiasm achieved by senses are important in traditional hedonism, the emotions accompanying them are at the forefront in modern hedonism (Yanıklar, 2006 ve Campbell, 1995). According to Penpece (2006), the only difference between modern hedonism and traditional hedonism is that consumers act more according to their enthusiasm in modern hedonism.

The hedonism concept is also an important study field for marketers aside from its philosophical point of view. Various researches have been carried out on the concept of hedonic consumption, which have taken the attention of marketing researchers from past to present. Hirschman and Holbrook (1982; 93), who used the concept for consumption for the first time, expressed consumers' buying experiences with respect to products or services from an emotional point of view and pointed out that consumers are no longer intend to benefit only perceptibly from products or services that they consider to buy. Today's consumers regard buying behavior as a means of pleasure and enjoyment as well as providing concrete benefits

from it, and they also perform shopping activities to satisfy and enjoy this pleasure. In this sense, hedonic consumption makes it possible to define the product as subjective symbols that make the image carried and created by the product focus rather than being considered as an objective entity that expresses the truth (Baş and Samsunlu, 2015: 18). Hedonic consumption based on the idea that the emotions can determine behaviors and preferences and act on other emotions represents an approach related to the fulfillment of some needs associated with the person, such as entertainment, pleasure, happiness, rather than the fulfillment of the need for a certain product or service. That is, it can be said that in hedonic consumption there are situations where priority is given to entertainment and pleasure expectancy (Park et al., 2006: 443; Akturan, 2010: 109, Ünal and Ceylan, 2008: 266). Hedonic consumption defined as performing buying behaviour with the aim of meeting the needs emotionally as well as taking pleasure from consumption act apart from only meeting the needs physically can be associated with consumer fantasies, dreams and imaginary worlds. In hedonic consumption, for example, smokers may be delighted to imagine themselves as "Marlboro Man", or the perfume smell can lead a person to a past moment or a sensation they feel and thus he/she can gain an emotional dimension in relation to perfume (Bilge, 2014: 18). In hedonic consumption which is mixed with desires and fantasies, is semi-imagination and in which desire is continuous and satisfaction is not possible, buying behaviour is carried out with emotions rather than senses. That is to say, the main idea behind hedonic consumption is that there is a cycle in which consumers take pleasure when they cannot reach a product or service and when they achieve the desired product or service, they are in search of new pleasure (Özcan, 2007: 48; Yanıklar, 2006: 33). Since in hedonic consumption what the product is more important than what the product represents and the image it creates, hedonic consumption depends on what the consumer wants the truth to be rather than what the consumer actually knows (Odabaşı, 2006: 116; Okutan, et al., 2013: 121).

3. HEDONIC CONSUMPTION MOTIVATIONS

Consumers perform shopping behavior with various motivations that differ from person to person. Researches show that hedonic shopping is performed by starting with different expectations and individuals lead hedonic shopping for a variety of reasons, not just for taking pleasure.

Tauber (1972) studied hedonic consumption motivation in two groups as personal and social reasons. While personal reasons include physical activities, entertainment activities, desire to have a cheaper product or service, role playing, distraction, taking pleasure, taking personal pleasure desire, and sensory stimuli; social reasons include gaining social experience, communicating with others, being affected from notable people in the society, reference groups and interviews, social experiences, friendship activities, status and authority, etc. (Antonides and Raaij: 1998, 420; Baş and Samsunlu, 2015: 18). One of the most comprehensive researches on the subject is the study of "Scale towards Causes of Hedonic Consumption" conducted by Arnold and Reynolds (2003). According to this study emphasizing that consumers do shopping with intense emotions and because of different reasons, the motivations that motivate people for hedonic shopping can be summarized in the following subheadings (Arnold and Reynolds, 2003: 74-75; Babin et al., 1994; Bilge, 2014: 28-32):

Adventurous shopping; adventure shopping which express excitement, adventure and feeling of being in a different word is expressed as an entrance to a word where there are enthusiastic and exciting images, fears and sounds. Adventure shopping motivation done with the aim of exploring and taking pleasure is also associated with feelings such as the perceived freedom and moving away from ordinariness.

Shopping for relaxing; it is a motivation type which can be explained by avoiding from stress and bad mood. Today's consumers can lead to activities which are delighting and elating by escaping from stressful environment, problems and negativities.

Shopping with social aim; shopping with social aim which expresses some reasons such as taking pleasure from the shopping done with friends and family, socializing during shopping, interacting with other people is a type of motivation in which consumers act with the socialization motive. Nowadays, when modern marketing age takes place, the shopping centers are the places which bring people together, where people walk around freely and people can communicate with each other easily. People turn to hedonic consumption more because of this situation.

Shopping for having an idea; shopping for having an idea which means following trends and fashion, being informed about new products and developments expresses the shopping motivation performed only with the aim of obtaining information regardless of any buying need or decision. In this motivation type people do shopping with the aim of valuing their free time.

Shopping to make others happy; in shopping to make others happy motivation which includes the pleasure and positive thoughts that people experience while they do shopping for others, consumers are delighted to buy gifts for the people they love and experience positive emotions and thus feel better.

Shopping for opportunities; in shopping for opportunities which is performed with the aim of waiting for cheaper periods and following discounts, consumers take pleasure from waiting cheaper periods and following discounts and promotions. In this motivation type, not only consumers take pleasure because of possessing the products they like at cheaper prices, but also they feel happy since they are proud of themselves by sharing the discount and opportunity information with the people near them.

Kim (2006), another researcher who has studies on hedonic consumption motivations, emphasizes in his study that consumers living in the city have more motivation for hedonic consumption than those living outside the city. Hausman (2000) emphasizes that consumers do shopping with the motivation of having products which are not possessed by others and some consumers show a tendency to consume for therapy. Westbrook and Black (1985) have stated that consumers often engage in hedonic consumption with the motivation to escape from reality and move away from the routine of life.

4. FACTORS AFFECTING THE HEDONIC CONSUMPTIONS

The hedonic behaviors of consumers are influenced by a number of factors. In their study, Arnold and Reynolds (2003) have addressed the relationship between a number of consumer characteristics and shopping factors and shopping motivations. In this study, factors affecting the hedonic consumption can be summarized as flow, store atmosphere, product

innovation and fashion, consumer characteristics, country culture and economic situation (Bilge, 2014: 35-36).

Table 1. The Factors Affecting the Hedonic Consumption and the Relationship Between Hedonic Consumption and its Motivations

Flow	There is a very strong relationship between adventurous shopping motivation and the sense of flow that consumers have during shopping since shopping involves experiential and imaginary aspects.
Store Atmosphere	The factors such as the physical surroundings, personnel, interior decoration, music system, lighting, selection of colors, presentation of products in store, behavior of sales personnel, etc. affect the pleasure consumers take from shopping. In this sense, the store atmosphere is influential on all hedonic motivations.
Product Innovation and Fashion	There is a positive relationship between the desire to buy new products and the motivation to have opinion without taking into account the information and references that consumers get from outside. Nevertheless, the fashion element, which is directly influential on the buying decision of young people, is highly influential on hedonic motivation.
Consumer Characteristics	The demographic features of the consumers such as age, gender, income-especially the age factor- directly affect the hedonic consumption motivation.
Country Culture and Economic Situation	Culture and economic situation of a country are very influential on hedonic consumption. That is to say, while hedonic consumption tendency is observed more in the developed economies, in underdeveloped economies this situation is less effective.

5. STUDIES ON HEDONIC CONSUMPTION

There are many studies on hedonic consumption. Some of the related studies can be summarized as follows: Rook (1987) emphasized in his study on unplanned buying behavior that the unplanned buying behavior has the opportunity for the individuals to get intense pleasure and it has hedonic elements since it gives happiness to the person. Babin, Dardin and Griffin (1994) addressed consumption in terms of both hedonic and utilitarian perspectives and presented that consumers take both of them into consideration. In their study Dhar and Wartenbroch (1999) examined the consumer preferences among hedonic and utilitarian products and they found out that the products bought arbitrarily have effects on hedonic consumption at different levels compared to the products bought with functional purposes; that is the consumers are not very reluctant for leaving the arbitrarily bought products. In his study Hausman (2000) tried to discover how hedonic motivation affects unplanned buying behavior and argued that consumers shop to meet their needs which are not about the usefulness of the products. Park, Kim and Forney (2006) concluded in their study that hedonic consumption is related to unplanned buying behavior only by means of positive emotions. Kim (2006) found two important motivational tools as efficiency towards utilitarian consumption tendency and success. Özdemir and Yaman (2007) conducted a study to find whether hedonic consumption differentiates in terms of gender and obtained the results that hedonic consumption behavior is more dominant in female consumers than in male consumers (Yaşar, 2017: 47-48).

In addition, Çelik (2013) examined the demographic characteristics of the reasons for hedonic consumption, and found that married participants were more influenced by the factor of making others happy than single participants. Yasar (2017) found in his study on determining the tendency of young people towards hedonic consumption that unplanned buying behavior and hedonic consumption trends were higher in women than men while men were more likely to be more prone than women in trends of conspicuous consumption and utilitarian consumption. Ünal and Ceylan (2008) examined the reasons why consumers turn to hedonic consumption and evaluated the participants who live in Erzurum and Istanbul. They found out in their study that the consumers who live in Erzurum turn to hedonic consumption to catch the shopping opportunities, make others happy, for social purpose and relief while the participants who live in İstanbul perform hedonic consumption to obtain ideas and follow the latest fashion. Ozdemir and Yaman (2007: 87) found that female consumers regard shopping as a social need compared to male consumers and that shopping is a hedonic behavior since it makes people happy and this makes women happier than men. Altunışık and Çallı (2004) obtained that consumers who have a tendency to hedonic consumption are more interested in the visual and message dimensions of buying decisions than price and cost factors, and they are particularly affected by image and emotional factors. Aytekin and Ay (2015) also examined the relationship between hedonic consumption and instant buying behavior and found that there is a positive relationship between these factors even it is at weak level, and hedonic reasons except the reasons such as the mood of the people, advertisements, the presentation and the price can affect the instant buying behavior.

6. RESULTS AND SUGGESTIONS

The tendency to take pleasure, which is in the nature of people, has begun to become very influential on the buying decision of today's consumers. The concept of consumption has now become a cultural phenomenon in which individuals can express themselves except just meeting needs. It can be said that consumers, who tend to hedonic consumption rather than the benefits of products or services, are in search of happiness with the products they buy. In hedonic consumption, which can be defined as taking pleasure from consumption or enjoying the consumption apart from the purpose of meeting the needs concretely, people act with the motivation of having a good time and feeling better rather than meeting their needs.

In addition, the symbolic meaning of products and brands in hedonic consumption brings the result that consumers often carry out the buying action in order to obtain these meanings. With this situation which takes its effect with people with a high level of income, it can be said easily that the consumers decide to conduct buying behaviour with the sense of image offered to them rather than the brands' meeting their needs.

It is crucial for marketers to meet the needs of people who regard the shopping as an adventure, do shopping to relax, turn to hedonic consumption for social purposes, shop to obtain ideas and turn to hedonic consumption to make the others happy and catch the opportunities. In their marketing strategies which will be formed in the light of the evaluations carried out in this study, businesses need to lead approaches which will make the consumers happy, which will make the consumers enjoy shopping, which strengthen the product or brand image by the help of the correct messages and which will increase the hedonic buying behaviour motivation.

References

- Altunışık, R. ve Çallı, L. (2004). Plansız Alışveriş ve Hızlı Tüketim Davranışları Üzerine Bir Araştırma: Satınalma Karar Sürecinde Bilgi Kullanımı”, 3. Ulusal Ekonomi, Bilgi ve Yönetim Kongresi Bildiriler Kitabı; 231-239.
- Antonides, Gerrit and W. Fred, Van Raaij. (1998), Consumer Behaviour: A European Perspective, John Wiley & Sons, New York.
- Arnold, Mark J. Ve Reynolds, Kristy E. (2003). "*Hedonic Shopping Motivations*". Journal Of Retailing, Vol:79, S. 77-95.
- Aytekin, Pınar ve Ay, Canan (2015). Hedonik Tüketim ve Anlık Satın Alma İlişkisi. Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi Yıl: Ocak 2015 Cilt-Sayı:8 (1) ss: 141-156 ISSN: 2148-5801 e-ISSN 1308-4216
- BABIN, J. Barry, DARDEN, William R., GRIFFIN, Mitch, (1994), "Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value", Journal Of Consumer Research, Vol. 20, pp. 644-656.
- Baş, Mehmet ve Samsunlu, Güliz (2015). Starbucks Coffee Tüketicilerinin Demografik Özelliklerinden Biri Olan Cinsiyete Göre Hedonik Tüketim Nedenlerinden Etkilenme Tutumlarının Belirlenmesi. Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 17/1 (2015) 14-34.
- Bilge, A., Hümeysra (2014). Hedonik Tüketimde Tüketici Motivasyonları: Bir Model Önerisi. Ege Üniversitesi, SBE, İşletme Ana Bilim Dalı. Yayınlanmamış Doktora Tezi.
- Campbell, C. (1995). The Sociology of Consumption. Londra: Routledge Press.
- Çelik, Bahar (2013). Mağaza Atmosferinin Hedonik Tüketim İle İlişkisi Sera Kütahya Alışveriş Merkezinde Bir Uygulama. Dumlupınar Üniversitesi. SBE. İşletme Ana Bilim Dalı. Yayınlanmamış Yüksek Lisans Tezi.
- DHAR, Ravi, WERTENBROCH, Klaus, (1999), "Consumer Choice between Hedonic and Utilitarian Goods", Journal of Marketing Research, Vol. 37, pp. 60-71.
- Hausman, Angela (2000): "A Multimethod Investigation of Consumer Motivations In Impulse Buying Behaviour",

Journal of Consumer Marketing, Cilt: 17, Sayı: 5, s. 403- 419.

Hirschman, E.C., Holbrook, M., (1982). Hedonic Consumption: Emerging Concepts, Methods and Propositions, Journal of Marketing, 46, ss. 92-101.

KİM, Hye-Shin, (2006), "Using Hedonic and Utilitarian Shopping Motivations to Profile Inner City Consumers", Journal of Shopping Center Research, Vol. 13, no. 1, pp. 57-79.

Odabaşı, Yavuz (1999). Tüketim Kültürü Yetinen Toplumun Tüketen Topluma Dönüşümü, Sistem Yayıncılık, İstanbul.

Okutan Semih, Bora Buket ve Altunışık, Remzi (2013). Keşifsel Satın Alma Eğilimleri ve Bu Eğilimlerin Plansız, Kompulsif ve Hedonik Satın Alma Tarzlarıyla Olan İlişkisinin İncelenmesi. Eskişehir Osmangazi Üniversitesi İİBF Dergisi, Aralık 2013, 8(3), 117- 136.

Özcan, B. (2007). "Rasyonel Satın Alma" ve "Boş Zaman Sürecine Ait Alışveriş" Eylemlerinin Birlikte Sergilendikleri Mekânlar: Alışveriş Merkezleri", Sosyal Bilimler Dergisi, 9 (2), 39-68.

Özdemir, Şuayıp ve Fikret, Yaman (2007). "Hedonik Alışverişin Cinsiyete Göre Farklılaşması Üzerine Bir Araştırma", Eskişehir Osmangazi Üniversitesi İ.İ.B.F. Dergisi, Cilt: 2, Sayı: 2, ss. 81-91.

Park, E.J., Kim, E.Y. & Forney, J.C. (2006). A Structural Model of Fashion-Oriented Impulse Buying Behavior. Journal of Fashion Marketing and Management, 10(4), 433-446. Akturan, Ulun (2010). Hedonik Tüketim Eğiliminin Plansız Satın Alma Eğilimi Üzerindeki Etkisinin Belirlenmesi. Ocak 2010.109-116.

Penpece, Dilek (2006). "Tüketici Davranışlarını Belirleyen Etmenler: Kültürün Tüketici Davranışları Üzerindeki Etkisi" Kahramanmaraş Sütçü İmam Üniversitesi, SBE, İşletme Anabilim Dalı, Yayınlanmamış Yüksek Lisans Tezi.

ROOK, Dennis W. (1987), "The Buying Impulse", The Journal of Consumer Research, Vol. 14, No. 2, pp. 189-199

Tauber, E. M. (1972). Why do people shop? Journal of Marketing, 36, 46–99.

Torlak, Ömer, Altunışık, Remzi ve Özdemir Şuayıp (2006). Postmodern Dünyada Tüketimi Yeniden Anlamlandıracak Yeni Müşteri. Hayat Yayıncılık: İstanbul.

Ünal, Sevtap ve Cem, Ceylan (2008), "Tüketicileri Hedonik Alışverişe Yönelten Nedenler: İstanbul Ve Erzurum İllerinde Karşılaştırmalı Bir Araştırma", Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, Cilt: 22, Sayı: 2, ss. 265-283.

Westbrook, A. Robert; William C. Black (1985): "A Motivation-Based Shopper Typology", Journal of Retailing, Cilt:61, Sayı:1, s.78–103.

Yanıklar, C. (2006). Tüketimin Sosyolojisi, Birey Yayıncılık: İstanbul.

Yaşar, Mine (2017). Hedonik Ve Faydacı Tüketim Bağlamında Tüketici Davranışlarının İncelenmesi: Gençlerin Hedonik Tüketim Eğilimlerini Belirlemeye Yönelik Bir Araştırma. Dumlupınar Üniversitesi. SBE, İktisat Ana Bilim Dalı. Yayınlanmamış Doktora Tezi.

Developing Economic Values in Football: Example of Turkish Football Federation

Assist.Prof.M. Serdar Terekli, Anadolu University, msterekeli@anadolu.edu.tr

Dr. Halil Orbay Çobanoğlu, Anadolu University, orbay_79@hotmail.com

ABSTRACT

The economy to produce goods and distribute them to various members of the community to various people in order to be consumed in limited production and scarce resources used in the study of Science. In the developing world beyond the game associated with football no longer a game that can be many things. With the support of economic values over time in the economic development to reach a broad audience and today football has evolved into a professional organization under the name of the industrial business. Football the 1980s, economic developments in the fore has been effective. In the 1980s, the liberal wave in all the world, has enabled us to speed up the process of commoditization has affected football and football. Football clubs can no longer act as just one sporting organisation. You no longer must be transformed into an economic organization. In this context, the increase of the economic value of developing the Football Federation and sports clubs has become an important financial resource to a new task. As far as we are concerned, football industry, football in the process of production and consumption of goods and services in the soccer organization, soccer enterprises(stadiums) football media (written and visual), football products, football, technology, football, marketing, and the Football Association shows. The economic function of sport in a professional manner at each level assumed to be at the top of the participant it comes to making money. Another indirect economic benefit through sports and club management to provide a direct connection with the Federation. Leading economic inputs, especially in professional football, especially football in a great easy way to gain popularity and ensure that more income is obtained. Especially nowadays, the football market, which is expressed in a budget amounted to billions of dollars. For this reason, both the economy of sports clubs and federations have had to plan their budgets according to their own rules.

The purpose of this study an important economic resource-providing soccer clubs, and soccer which have a great impact in the economy of the Turkish Football Federation made to improve the financial performance of football clubs is to analyse and examine the financial status of the contributions.

KEYWORDS: Football clubs, financial analysis, professional football, Premier League Football. Football Federation

INTRODUCTION

Sports is an activity that has many reflections in economic terms. Sports has shown great economic, social and political developments over the last century and has become one of the most important economic instruments that provide great benefits to the country's economy. Many companies that are not interested in sports in their activities start to deal with the sports economy expressed in the market of million dollars and make big investments.

Nowadays, football has begun to take first place among the most important sectors, which are expressed by big numbers both economically and businessly. Football is a global phenomenon born in Europe and still dominated by European clubs both as sporting success and economically. This development led to the growth of financial value economically, both

the growth of funds and the introduction of public offerings have made increasingly important the existence of a transparent and sound financial structure at the level of the clubs and federations in the football. For this reason, both sports clubs and federations have had to plan their budgets according to the rules of the economy. Because it is a subdivision of the sports sciences that produce inputs and outputs based on specific plans and projects that make radical decisions based on football economics experiences expressed in millions of dollars.

In the football economy, clubs, footballers, fans are only a part of this work. Besides, the income from the variables such as ticket and product sales, sponsors, live broadcasts, betting shows that football is a professional profession. However, it should not be forgotten that performance in football is related to economic success.

Over the past half century, the American Football League (NFL) has been seen to be three times as valuable as the Premier League, the nearest football league to itself. NFL's publishing rights are much more expensive, despite the fact that NFL league has 100 million and football has 4 billion. Despite Real Madrid's 18 million followers, Dallas Cowboys is the world's most valuable team, with only 1.5 million followers, and the closest follower is worth more than \$ 750 million from Madrid (<http://nfl.com/2015>).

What is important here is to manage the current economic structure in the most healthy way. In recent years, the European Football Association (UEFA), the regulatory authority of the European Football Federation (UEFA), has imposed certain sanctions on soccer clubs, particularly those involving the financial position and measured by the compliance grade financial performance criteria. The most important of these sanctions is the financial fair play criteria. It is aimed to strengthen the financial structure, sustainability and balanced competition in the federations with the financial fair play criteria. With the equivalent budget application, which is the basis of the financial fair play criteria required for participation of the clubs in UEFA organizations, a financial structure is monitored in the clubs and it is aimed to reach the break-even point of the clubs that have completed the transition process (Güngör, 2004; p.17). Taking the right decisions in the football industry is very important in terms of being a serious competition in this industry.

ENVIRONMENTAL FACTORS AFFECTING FOOTBALL ECONOMY

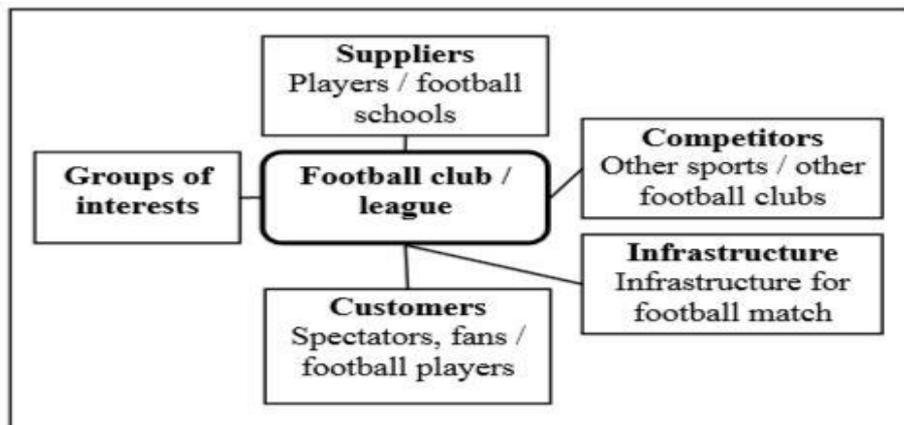
The fact that professional soccer is a game that is linked to many things beyond the game has made football a professional business area that different segments are interested in. The clubs have offered football supply to the market and the commercialization federations have become a gigantic economic structure where the buyers, audiences, supporters and stadiums to buy the product are transformed into trading complexes, and the products of the clubs are sold and new communication possibilities are used.

The football economy has an asymmetric, inelastic and irrational structure. Although football has become an industry, it is a business that carries its own differences in a way that is far different from other industries. This industry rises on the basis of supporter affiliation and finds life (Akşar, 2010; p.3).

In Figure 1, the micro dimension of the football economy is given as a business line. Soccer is a popular sport when viewed socially. Strong clubs, preferences and decisions are treated as rational fans and national teams. In fact, it can be said that sports way of football is only a part of the football clubs and federations. For this reason, the idea of a business line of the football industry is always missing. Each of the micro environments of the business environment in football is only football-specific.

For this reason, football economics is theoretically determined that is a sector with originality, classical economic rules do not work in this economy by both supply and demand, there is an asymmetric structure in the price formation, the price of goods or services sold is not determined very rationally as classical economics and this economy has a solidarity in the economy, the opponents could not destroy each other (Akşar, 2010; p.3).

Figure 1. Micro-environment elements of football business



Source: Karpavicius and Jucevicius (2009), “The Application of the Business System Concept to the Analysis of Football Business”, *Inzinerine Ekonomika-Engineering Economics*, p.87.

Besides all the companies working in the football business, one of the most important factors influencing the presence of the football club, the federations and the league is the players. In this section, the fans may come to mind. In the football economy, fans do not give up their teams even if they perform badly, and when poor performance brings financial problems they increase their spending and support their teams. Football players who became a sponsor for the football club are also the customers of the football industry. (Tomas and Jucevicius, 2009: 87) For this reason, players have an important influence on the rise and fall of brand value of clubs, federations and leagues. This effect broadens or narrows the monetary holdings of clubs, federations and leagues.

However, in our country, there is great difficulty in the administrative structure of football and all the institutional substructures formed therefrom. The total debt of our clubs, called the four major clubs, has exceeded the \$ 6.5 billion (Skorer, 2017). Nevertheless, the volume of football in the professional soccer market in Turkey has grown about 5 times in the last 10 years. At least in the growth of monetary overpayment, it can be shown that fans do not leave their teams, change in sponsorship mentality, increase in broadcasting income and increase in interest in betting game every passing day.

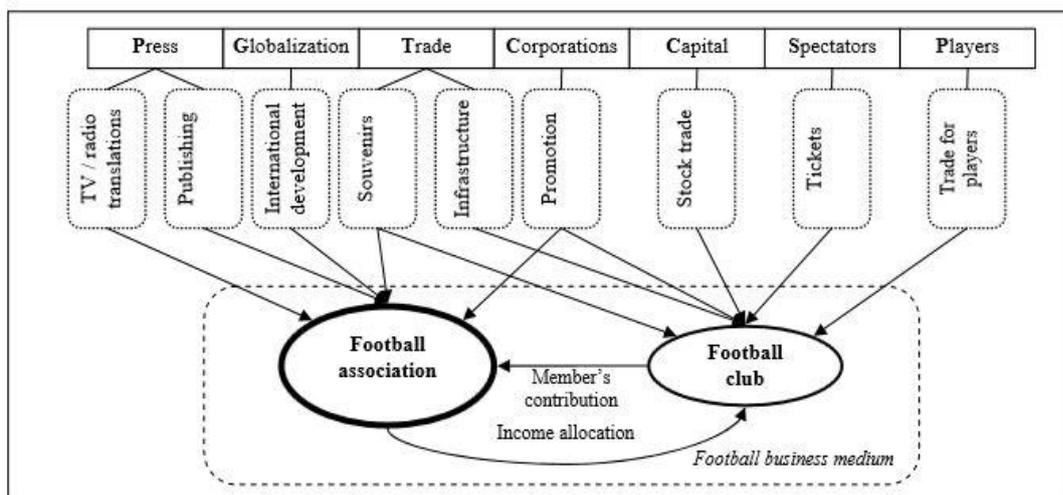
Figure 2 shows the income stream in the soccer economy. Some of them are press, globalization, trade, corporations, capital, spectators (fans) and players. However, the three most rewarding sources of incomes for football clubs are;

- Transmission Incomes
- Commercial Incomes
- Match Day Incomes

In the football which has been transformed into a global show industry in the last 25 years, matchday revenues comes from the income items which sports fans directly influence. The match-day revenues of the clubs, which provide clues to their sporty successes and popularity, consist of ticket and combined sales as well as revenues from institutional hospitality and food and beverage services. These incomes also reflect the behavioral identities of the football culture and supporters of that country or region.

Compared to Europe's 5 major leagues, the Premier League is ranked first in terms of match day income. Apart from sales of seasonal combos and match tickets, catering services offered at different stadiums according to different customer segments and institutional entertainment packages should not forget effects of this revenue. The modern stadiums of Premier League especially Emirates, Stamford Bridge, Old Trafford and Etihad Stadium, compete with each other with alternative accommodation services, VIP lounge areas, private venues and catering services offered outside the match days or match days (Ekolig Reports 2015-2106, p.6).

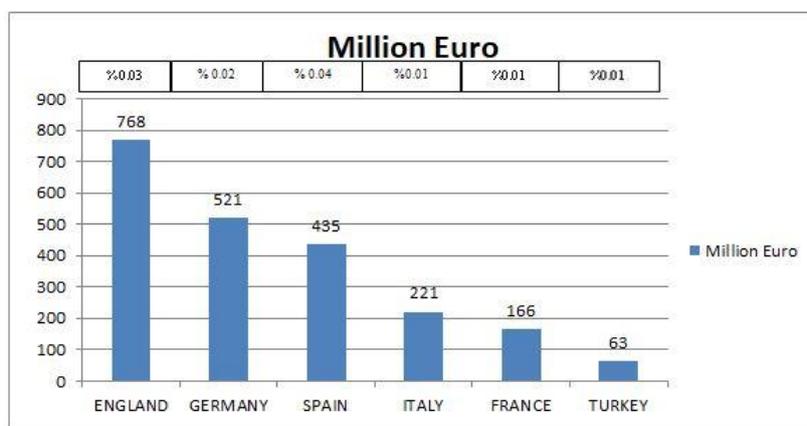
Figure 2. Income flows of football business system



Source:

Karpavicius & Jucevicius (2009), "The Application of the Business System Concept to the Analysis of Football Business", *Inzinerine Ekonomika-Engineering Economics*, p.90.

Figure 3. The Ratio of the 5 major leagues of Europe and the Spor Toto Super League to the Gross Domestic Product (GDP) Ratios of the Match Day Income



Note: The table was created by calculating the average ticket price and an average audience of the Super League with Deloitte Money League Report

The globalization of sports and the transformation into consumption culture began with television. Thanks to sporting activities, the incomes of television channels, which have been watched for a longer period of time, have increased significantly. Parallel to these developments, football has become an instrument that can be marketed in every direction as well as being presented to sports fans in the form of a spectacular activity. France, which has been hosting EURO 2016 in the past few months, is one of the most striking examples of this pioneering change in Europe.

At the end of 1960s, the first year of television, the sports broadcasts, which were 232 hours per year in France, reached 430,000 times in 2010, up to 100,000 hours. The situation is the same as the cradle of modern football in England. Between 1993 and 1998, the time that British television channels dedicated to sports broadcasts increased by 300%. In the second half of the 1980s, sports broadcasts began to meet television audiences through paid channels instead of open channels that everyone could watch. This development changed the face of the football-television partnership. With this trend that started at the forefront of the European continent, popular sporting events began to be offered to sports fans through encrypted private TVs and for certain fees. As the number of companies that advertise in sports publications has increased, soccer has turned into one of the most expensive global shows that have been marketed to millions of people. Nowadays, soccer competitions of each country are delivered to television audience with different broadcasting and distribution models (Ekolig Reports 2015-2106, p.10).

These models vary according to many factors such as the socio-economic dynamics of the existing countries, the popularity of the league, sporting success and brand value, international travel demand, advertising and subscriber revenues, broadcasting technology. Live revenue in England is distributed to the Premier League clubs by the rule of 50-25-25. In this model, the Federation initially equates 50% of total revenues to all clubs. Then half of the remaining 50% is distributed according to sportive performance, and the other half is distributed according to the weekly broadcast game numbers, depending on the popularity of the clubs.

In Turkey, revenues from live broadcasts are allocated to the Sports Toto Super League teams as follows. 35% of total publishing revenue is distributed equally to 18 clubs as contribution share. 45% of the remaining revenues are awarded to performance (score points), 11% to the championship numbers and 9% to the first six teams.

Since 1990, football has entered the process of industrial transformation. Commercial income is one of the income items that have increased significantly in the last 10 years. Along with the changing socio-economic conditions and new stakeholders involved in football, the commercial revenues of the clubs have also diversified and increased. Digital platforms are one of the newest areas of commercial revenues in recent years, including sponsorship agreements, brand partnerships, commercial associations, advertising, image and PR projects. The sum of commercial revenues in the 2014-2015 football season of Europe's five largest leagues is set at 3.4 billion euros. The UK is ranked first with 1.2 billion euros, followed by Germany with 673 euros.

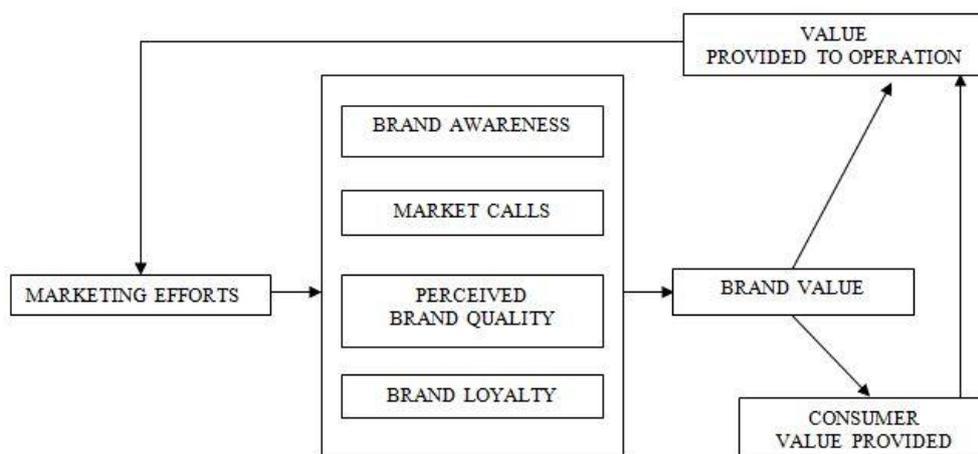
In Turkish football, the four big are the ones with the highest commercial incomes. However, in recent years it is seen that some clubs with the stadiums renewed, the performances in the league and the potentials of the audience Antalyaspor, Atiker Konyaspor, Medipol Başakşehir FC have also increased their commercial income. In the 2014-2015 football season, four (Çaykur Rizespor, Kardemir Karabükspor, Medipol Başakşehir FC, Atiker Konyaspor) of the 18 football clubs in the Sports Toto Super League were title sponsors, and three (Türk Telekom Arena, Vodafone Arena, Torku Arena) of them were stadium name sponsors. Also in the 2015-2016 football season, four (Çaykur Rizespor, Medicana Sivasspor, Medipol Başakşehir FC, Atiker Konyaspor) of the 18 football clubs were title sponsors, five (Türk Telekom Arena, Vodafone Arena, Ülker Stadium Fenerbahçe Şükrü Saraçoğlu Sports Complex, Torku Arena, Didi Stadium) of them were stadium name sponsors.

THE IMPORTANCE OF BRAND VALUE IN FOOTBALL ECONOMY

Television and internet, which act like a distribution channel for industrial football, have also made it possible for football to become widespread, to develop and to reproduce itself. Today, sports clubs and leagues, which show great development in terms of economy, not only succeed in sporting success but also successful management models in terms of financial parameters. This both increases the brand value of both the clubs and the federations of the country, and decreases the brand value of those who can not succeed.

According to the American Marketing Association; brand; a name, a term, a mark, an icon, a design, or various combinations thereof for identifying, identifying and distinguishing goods or services of one or a group of producers or sellers of goods or services from their competitors (Kotler, 2000: 443). In a sense it is the sum of the values that have been identified with that brand in the past marketing done to the mark ". Investors are concerned with brand value in financial terms. So if you want to find a good sponsor both as a club and as a federation, you have to increase brand value.

Figure 4. Conceptual Structure of Consumer Based Brand Value



Source: Avcılar, M.Y. (2008). Measurement of Consumer Based Brand Value, Çukurova University Journal of Social Sciences Institute, p.13.

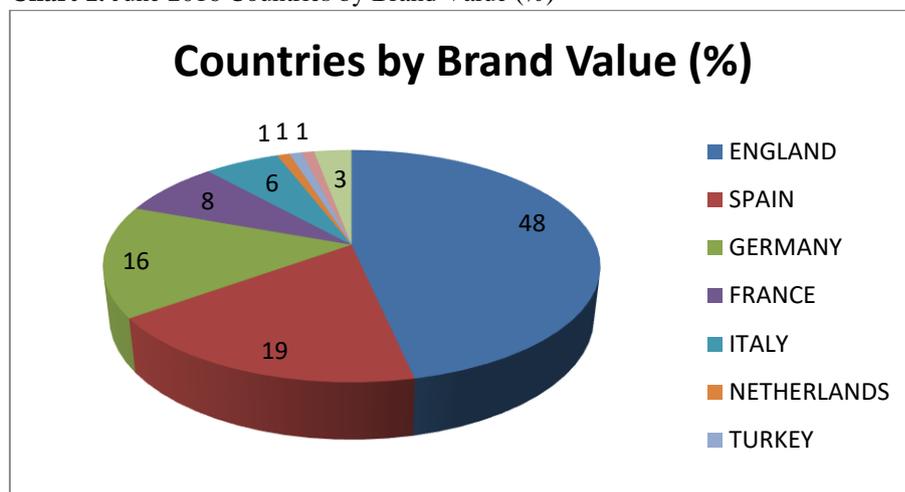
The brand value offers the advantage of differentiation that allows producers to create higher profit targets. It provides business producers to develop new products, to present them to market and to protect brands from the attacks of competing businesses (Lassar et al, 1995).

When Figure 4 is examined, it is seen that there are four dimensions constituting brand value. These four dimensions constitute the brand value perceived by the consumers, and as a result, perceived brand value values both the consumers and the businesses. This information on brand value is available for all businesses, as well as economic parameters which are increasing day by day in the soccer economy.

In this context, according to Brand Finance Reports in 2016 England, Spain, Germany, France, Italy League and football brands which competing in this league are leading global football industry. The football economy has reached a brand value created by these 50 football clubs and totaling \$ 15.02 billion (Brand Finance Football 50 Reports, 2016).

Chart 1 below shows the countries that share the brand name according to their brand value in June 2016.

Chart 1. June 2016 Countries by Brand Value (%)

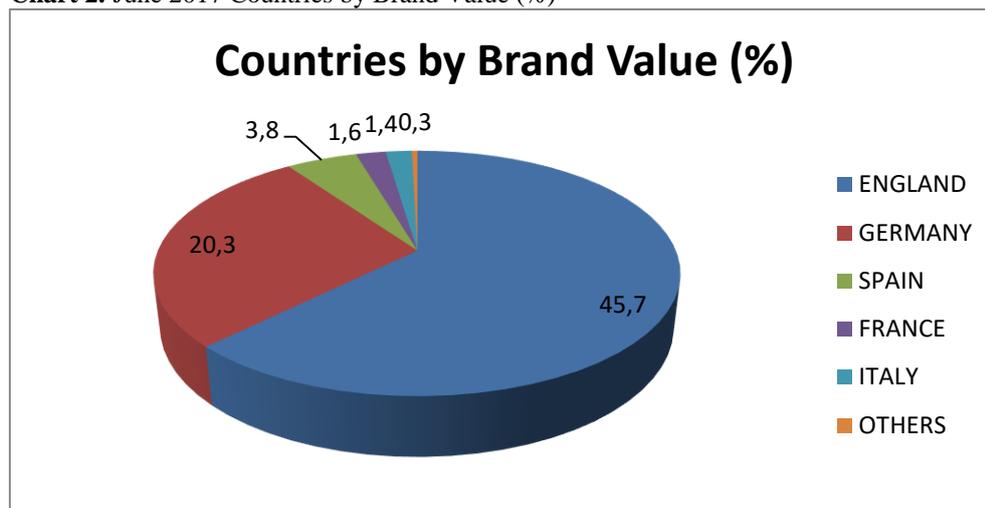


Source: Brand Finance Football 50 Reports, 2016.

When Graph 1 is examined, it is observed that UK has the greatest brand value with 48%, followed by Spain with 19%, Germany with 16%, France with 8% and Italy with 6%, and Turkey, Netherlands and Portugal have the lowest brand value with 1%.

In the year 2017 conducted by Brand Finance, Manchester United is the most valuable club in the World with a brand value of 1 billion 773 million dollars. While Galatasaray was ranked 39th with a brand value of 116 million dollars from Turkey in 2016, Fenerbahçe was ranked 45th with its brand value of 95 million dollars. According to Brand Finance Report 2017 Galatasaray which had 100 million dollars of the brand value and Fenerbahçe which had 123 million dollars of the brand value weren't among the top 50 clubs.

Chart 2. June 2017 Countries by Brand Value (%)



Source: Brand Finance Football 50 Reports, 2017.

In the Premier League, the team with the highest commercial revenues is Manchester United. According to the March 2016 financial indicators, only in the first quarter of 2016, the club increased its commercial income by 37.7% and earned £ 65.8 million. Included in other income, the revenue expected to enter the red-whites by the end of the year is around 500 million pounds. Manchester United-Adidas partnership is at the top of the sponsorship agreements sponsored by sports brands with football clubs. Adidas will pay 75 million pounds each season for the contract that will go on until 2025. The second place is Bayern Munich-Adidas partnership with 60 million euros. Puma is third in the list with a £ 30 million annual sponsorship fee for Arsenal for five seasons.

One of the most popular sponsors stands out as the stadium name sponsor. It is the first example in this area that Bolton Wanderers from Premier League teams changed their stadium name to Reebok Stadium in 1997. North London team Arsenal changed its name to Emirates Stadium which name is Ashburton Grove, in 2004 under the agreement with a UAE based company Emirates. Arsenal will win £ 30 million each season from the name sponsorship of this form and stadium which was renewed in 2012 and will run until 2028. Another Premier League team, Manchester City, has won a stadium title and a chest sponsor for \$ 40 million a year in line with an agreement with Etihad which the second largest airline in the United Arab Emirates (Ekolig Reports 2015-2016).

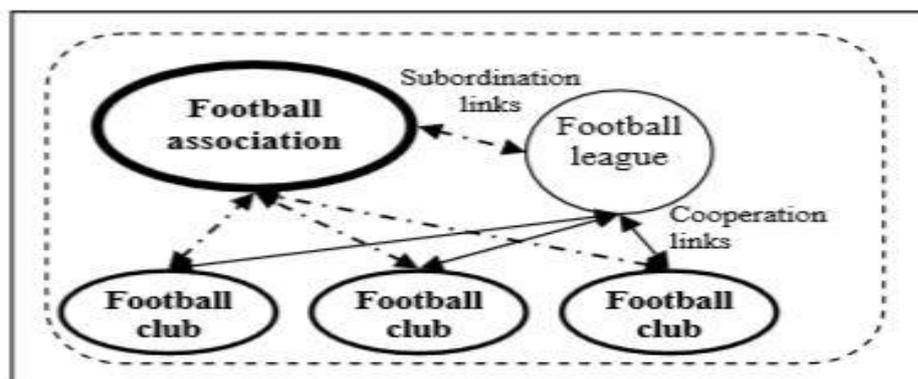
The identification of stadium names with brands is also a common tradition in the Bundesliga. The 35-year deal Bayern Munich signed with Allianz is at the top of the Bundesliga's most revenue-generating partnerships. The club will earn a minimum of 210 million euros during the deal. Schalke 04 earned 5.5 million euros per season in second place and Borussia Dortmund with 4.7 million euros in third place.

As you can see, leagues need to reach a certain brand value in order to get a good place in the football economy and to achieve success in both clubs and national teams. Administrative

work to be done for this purpose is gathered in two groups. These studies should be made by the joint efforts of the football federation and its affiliated leagues and the clubs operating in these leagues. These;

- Services that guarantee football match performance. So the factors that are necessary for sporting success.
- Football business management activities required for the functioning of the whole football business system. So commercial and financial development efforts.

Figure 7. The structure of football business medium



Source: Karpavicius and Jucevicius (2009), “The Application of the Business System Concept to the Analysis of Football Business”, *Inzinerine Ekonomika-Engineering Economics*, p.89.

TURKISH FOOTBALL FEDERATION

On April 13, 1923, in other words when the Republic was not declared yet, "Turkey Football Federation" was formed within the structure of the Alliance of Turkish Civics in Turkey. Football Federation was accepted to FIFA membership on May 21, 1923 and established Turkish National Soccer Team. UEFA membership took place in 1962. On July 3, 1992, it had a fully autonomous structure. It is the soccer federation that has the legal and managerial power to manage, supervise, organize and regulate the football in our country.

Turkey Football Federation has the power of football. It is a legal structure that governs a size reaching 602.193.088 TL in our country. When we examine the income-outgoings situation and financial structure of the federation;

TURKISH FOOTBALL FEDERATION'S PROFESSIONAL FOOTBALL INCOMES (TL)

Table 1. Season 2016-2017 Turkish Football Federation's Professional Football Incomes (TL)

INCOMES	2016/2017 (TL)	Happening	2017/2018 (TL)
Educatiin Incomes	7.348.560	515.590	6.657.670
National Team Incomes	141.176.076	55.508.888	40.453.930
Proffesional Football Incomes	259.084.778	270.688.580	348.887.741
Amateur Football Incomes	19.501.625	20.384.454	54.234.780
UEFA and FIFA Incomes	21.512.750	18.548.159	11.400.000
Sponsorship Incomes	106.457.532	56.978.016	124.077.201
Current Incomes	8.800.000	6.783.320	12.600.000
Prior Period Incomes Surplus	38.311.767	70.911.678	70.911.678
Total	602.193.088	500.318.685	669.223.000

*TL: Turkish Liras

Note: Data was taken from Turkey Football Federation Ordinary General Assembly 2016-2017 Activity Report.

The budget realized as 51.995.577 TL in the 2003-2004 season, 240 million TL in the 2012-2013 season, was realized as 500 million TL in the 2016-2017 season. In the 2017-2018 season, a budget of 669 million TL is planned. The budget estimated at 602.193.088 in 2016-2017 season seems to have remained at 500 million TL due to erroneous planning as it was going to play final in EURO 2016 championship.

As a result, unearned revenues and unnecessary expenses have the same effect on revenues and expenditures in the budget. When we look at the table, there is a big drop in the income of the National Team. Both the financial and sporting failures seen in sports clubs are often seen in the Turkish Football Federation.

TURKISH FOOTBALL FEDERATION'S PROFESSIONAL FOOTBALL OUTGOINGS (YTL)

Table 2. Season 2016-2017 Turkish Football Federation's Professional Football Outgoings (TL)

OUTGOINGS	2016/2017 (TL)	Happening	2017/2018 (TL)
Education Outgoings	19.408.827	16.825.749	19.975.086
National Team Outgoings	223.025.803	115.595.158	74.762.562
Professional Football Outgoings	148.986.363	157.116.944	399.320.374
Amateur Fottbal Outgoings	46.666.352	51.257.633	54.431.780
Dsabled Football and Educational Institution Outgoings	1.973.218	1.996.965	2.063.630
R&D and Project Outgoings	18.257.458	14.930.494	15.140.400
Current Incomes	55.123.757	57.048.731	59.870.984
Fund Incomes	100.000	43.000	100.000
Fixed Assets	54.405.300	14.596.960	81.141.250
Statutory Outgoins	20.670.917	17.060.352	21.551.800
TOTAL	588.617.995	446.471.986	728.357.866

*TL:Turkish Liras

Note: Data was taken from Turkey Football Federation Ordinary General Assembly 2016-2017 Activity Report.

When the expenditure distribution is examined on the basis of federation, it is observed that the highest outgoings is in the professional team with 157.116.944 TL and the second highest outgoings is in the national team with 115.595.158 TL. On the estimated budget of 2017/2018, the same expenses are planned in high level and it is expected that the total cost of both expenditures will be realized as 474.082.936 TL.

When we look at the income-outgoings balance between the years 2016-2017 of the Federation, it is observed that 54 million TL savings achieved. As long as financial budget and budget discipline can not be achieved, brand values of leagues start to fall day by day. Pool incomes distributed according to the criteria for inclusion among the first 6 teams, live broadcast incomes, performance bonus, championship bonus reached to 871 million TL in the 2015-2016 football season.

According to the league values calculated on the basis of the league's betting prices as of season 2016-2107, Super League is the most valuable seventh league of Europe with a value reaching 843 million Euros. Despite such economic and managerial difficulties, it is expected that there will be a financial decline in the 2016-2017 season, especially due to the Financial Fair Play applications, resulting in the Super League teams getting out of the hands of costly players. To explain briefly the applications of the Financial Fair Play; the amount of

salary, wages and premium paid to the athletes does not exceed seventy percent of the collected income.

Football Federation is the most important of the main actors of football. Although it has provided a certain revenue increase, it has not been able to maintain and develop itself, its clubs and hence its leagues in a managerial sense. With increasing administrative difficulties in the clubs Turkish football has begun to crisscross.

Digiturk has received the auction which will be granted the broadcasting rights for the next five years for Super League and TFF League 1 with a bid of \$ 500 million + VAT annually.

Table 3. Super League Revenue Distribution Pool (TL)

Super League Revenue Distribution Pool (TL)					
	2016-2017	2015-2016	Increase (%)	Share (%)	Prize
Win	1.500.000	1.300.000	15,38	46	<u>Spoty Performance</u>
Draw	750.000	650.000	15,38		
<u>Champion Bonus</u>	19.000.000	17.000.000	11,76	6	<u>Ranking Bonus</u>
<u>2nd Place Bonus</u>	15.500.000	14.000.000	10,71		
<u>3rd Place Bonus</u>	11.500.000	10.000.000	15,00		
<u>4th Place Bonus</u>	7.700.000	7.000.000	10,00		
<u>5th Place Bonus</u>	3.850.000	3.500.000	10,00		
<u>6th Place Bonus</u>	1.925.000	1.750.000	10,00		
<u>Former Champion Bonus</u>	1.800.000	1.600.000	12,50	12	<u>Old Championship</u>
<u>Evenly Distributed Amount</u>	20.000.000	18.000.000	11,11	36	<u>Evenly Distributed Amount</u>
<u>Total Amount Distributed</u>	988.275.000	871.050.000	13,46	100	<u>Total Amount Distributed</u>

Source: Akşar, T. (2017c)

In Turkey, live stream revenues are distributed to the Sports Toto Super League teams as follows: 35% of the total broadcast revenue is distributed equally to 18 clubs as a contribution. 45% of the remaining revenues are awarded to performance (score points), 11% to the championship numbers and 9% to the first six teams.

As the Turkish football economy grew, pool revenues also increased in the Super League. As a matter of fact, considering the distribution of the last 3 years between 2014-2017 seasons, the total monetary award distributed to the clubs increased by 31% and reached 988.275.000 TL. the average amount of Super League 2016-17 pool revenues distributed per team also rose to 54.9 million TL from 41.8 million TL in this period (Akşar, 2017a, 2017b and 2017c).

In today's football, two important structures emerge in the process of restructuring for federations and clubs. These;

- Asset-Risk Management
- Spoty Performance Management

These two structures must be planned by the Turkish Football Federation and the clubs and reach the point where Turkish Football is worthy.

CONCLUSION

Especially in terms of sporty performance, the difference between us and our competitors is getting bigger every day. Neither the individual sports nor the expected success in team sports can be achieved. Unfortunately, the clubs that did not meet their income expenses suffered financial hardship and were penalized for deleting points.

The task of developing football in Turkey and preparing new legal regulations has been given to Turkish Football Federation. It is necessary to regulate professional football, to establish a regulatory and legal framework, to ensure that the clubs have a transparent management structure and to support the clubs and bring the football economy to European standards. Like any business, soccer organizations also need a strong financial management system to ensure long-term sustainability.

The necessity of restructuring has arisen from the point of view that the high-budget football clubs that come out as a supplier in the soccer industry which has become a big business line with globalization can adapt to the changing economic conditions and take advantage of the opportunities brought about by these conditions. Nowadays, the presence of transparent and sound financial structure is important on the basis of accountability in football clubs which are attracting attention due to the size of funds they manage and their public offering attempts.

The present administrative and organizational structure of Turkish sport is not structured to carry sportive, economic, financial and intellectual performance to the highest level. With today's structuring, Turkish sports seem far away from the competence to increase their share in sport and finances in Europe and the World. For this reason, new projects have to be produced and passed on to a new life.

REFERENCES

- Avçılar, M.Y. Measurement of Consumer Based Brand Value, Çukurova University Journal of Social Sciences Institute, 17 (1), 2008, pp.11-30.
- Akşar, T. Industrial Football, Literature Publications, p.4, İstanbul, 2005.
- Akşar, T. Merih K. Football Economy, Literature Publications, p 199, İstanbul, 2006.
- Akşar, T. Politics of Football Economy, Literature Publications, p.3, İstanbul, 2010.
- Akşar, T. (2017a). "Super League Super?" <http://www.futbolekonomi.com/index.php/haberler-makaleler/ekonomi/35-tugrulaksar/4210-2017-10-03-08-08-24.html>
- Akşar, T. (2017b). "Unbalanced Economic Competition in Super League!" <http://www.futbolekonomi.com/index.php/haberler-makaleler/ekonomi/35-tugrulaksar/4167-2017-07-16-16-58-48.html>
- Akşar, T. (2017c). "Super League has distributed fortune!" <http://t24.com.tr/yazarlar/tugrul-aksar/super-lig-servet-dagitti.17414>
- Brand Finance Football 50. June/ 2015.
- Brand Finance Football 50. June/ 2017.
- Deloitte Money League 2016.
- Ekolig Reports 2015-2106.
- Güngör, A. Analysis of Relation Between Sportive Success and Financial Performance in Football Industry and Turkey's Application. İstanbul University Journal of Social Sciences, 2014 (1), p.16-36.
<http://nfr.com/2015>
- Tomas, K., Jucevicius, G. (2009), "The Application of the Business System Concept to the Analysis of Football Business", Inzinerine Ekonomika-Engineering Economics, p.87
- Kotler, P., (2000), Marketing Management, Ninth Edition, Prentice Hall, International Inc., USA, Boston, November.
- Lassar, W., Banwari, M. & Arun, S. (1995) "Measuring Customer- Based Brand Eguity", Journal of Marketing, Vol: 12, p:11-19.
- Skorer. (2017)., <http://www.milliyet.com.tr/4-buyuklerin-borcu-6-5-milyar-besiktas-galatasaray-fenerbahce-trabzonspor-2456218-skorerhaber/>
- Turkish Football Federation Ordinary General Assembly 2016-17 Annual Report

4.0 Health Applications in Turkey

Assoc.Prof.Dr.Taşkın Kılıç, Gümüşhane University, taskinkilic79@hotmail.com

ABSTRACT

4.0 Health means give a healthcare services with eHealth, mHealth, Big data, digital hospital and telemedicine. mHealth is to provide healthcare delivery, health-related data transfer, and health-related communications from long distances via smartphones, web pages, messaging services, tablets, wireless portable devices and applications.

The aim of this study is to determine the role and the level of 4.0 Health applications, in the health care delivery in Turkey. The data of the study were obtained using qualitative research method (analysis of secondary data and applications). In this context, the 4.0 Health applications that are actively used in health services in Turkey was assessed and good practice examples was studied in the study.

As a result of the study, 4.0 health applications such as e-pulse, chronic patient monitoring system with mobile devices for home use, e-dietician, e-Eye diseases, mobile first aid and online disease consultation are actively used in Turkey.

KEY WORDS: 4.0 Health, mHealth, e-Health

INTRODUCTION

Radical changes in the information and communication technologies along the last three decades have significant impact on all sectors. Service provision reached beyond space and time limitations. For instance, 50% of the mental patients in Netherlands are diagnosed and treated through the “Tele-medicine method (video conference)” without necessitating them to paying visit to hospital; and patient wait lines, hospitalization periods and health related costs have significantly reduced. Owing to eHealth practices harnessed by the most advanced health systems of the world, dependency to hospitals has reduced; instead, demand towards mobile applications and health technologies capable of providing 7/24 service and which could be accessed by everyone has significantly increased. For example, as of 2016, 20 EU-member countries employ eHealth system actively (Kılıç,2016).

DESCRIPTIONS

Industry 1.0,2.0,3.0,4.0: The First Industrial Revolution 1.0 industrial revolution in Britain came in to introduce machines into production by the end of the 18th century (1760-1840). This included going from manual production to the use of steam-powered engines and water as a source of power. 2.0 industry dates between 1870 and 1914 (although some of its characteristics date back to the 1850) and introduced pre-existing systems such as telegraphs and railroads into industries. Perhaps the defining characteristic of that period was the introduction of mass production as a primary means to production in general. 3.0 industry is much more familiar to us than the rest as most people living today are familiar with industries leaning on digital technologies in production. However, the third industrial revolution is dated between 1950 and 1970. It is often referred to as the Digital Revolution, and came about the change from analog

and mechanical systems to digital ones. Others call it the Information Age too. The third revolution was, and still is, a direct result of the huge development in computers and information and communication technology. Industry 4.0 represents the fourth industrial revolution in manufacturing and industry. Industry 4.0 describes the organisation of production processes based on technology and devices autonomously communicating with each other along the value chain: a model of the ‘smart’ factory of the future where computer-driven systems monitor physical processes, create a virtual copy of the physical world and make decentralised decisions based on self-organisation mechanisms (European Parliament, Policy Department, 2016).

Health 4.0: Refers to virtualization and service aggregation. It shows how sensors, embedded systems, and cyber-physical systems are fundamentally changing the way industrial processes work, their business models, and how we consume, while also affecting the health and care domains (Thuemmler and Baj, 2017). In other words give a healthcare services with eHealth, mHealth, robotic healthcare, big data, digital hospital and telemedicine.

eHealth: The European Union Health Commission describes the eHealth concept as “utilization of information and communication technologies (network connections, mobile software, Robotic practices, smart phones, data bases, video conference etc.) in health services to prevent diseases, diagnosis and treatment, monitoring and management of health” (www.ec.europa.eu). The “e” reference used in the beginning of the eHealth concept implies “Electronic, digital, internet-based, effective, fast, information-oriented and technology” nature of health services.

mHealth (Mobile Health): mHealth (*mHealth*), a component of eHealth concept, is abbreviation of “*Mobile Health*” word. According to the definition suggested by the WHO, mHealth is support to the medical and public health services by utilizing from smart phone, patient monitoring devices, digital devices (tablet etc.), other wireless tools (radio etc.) and mobile devices (www.who.int).

Telemedicine: Transfer of medical information through information technologies in order to evaluate and develop health conditions of individuals medical (American Telemedicine Association, 2015). Although it was harnessed for diagnosis and treatment operations conducted through information and communication tools in long-distance health services from the time when the Tele-medicine application was first introduced in 1960s until 2000s, it is used as a component of eHealth concept.

Robotic Healthcare: Owing to advanced robotic technology and applications, some processes of health services could be implemented by robots. Especially elders and handicapped individuals who need home care services, it is possible to receive service from robots in lithotripter, hair transplantation, consultancy and nursing services today. For instance, robots with artificial intelligence, which provide home care service in Germany, are capable of establishing communication with patients; and of giving them bath and assisting them in bathroom needs. Even these robots could entertain elders and lonely individuals by dancing.

On the other hand, robot nurses developed in Japan are capable of receiving blood samples from patients and giving them education. Robotic practices are available to meet doctors and other health professionals with technology to enhance their performances; put factors such as efficiency, productivity, speed and cost control into prominence so that more robust, dynamic, flexible and human-oriented health services could be provided.

Digital (Paperless) Hospitals: Digital Hospital is to integrate long distance health professionals and departments with each other so as to provide high quality health service through combining clinical and administrative work flows with information and communication technologies, carrying hospital services beyond physical hospital walls (homes, emergency stations etc.). Digital hospital is the concept contributing into increasing personnel productivity, accelerate hospital operations, enhance process quality and ensuring patient safety by integrating advanced technologies and applications such as medical devices, smart information, facility control and automatic material handling systems, location-based services, sensors and digital communication tools with processes (Netherlands, 2009). Paper-based practices are almost at the minimum level in a digital hospital. Patients' blood analysis results, x-ray, MR and tomography images are totally kept and maintained in a digital environment. Physicians at such hospitals could conveniently access health information of patients regardless of distance through cell phones, tablet and PCs. For example, a physician on duty at a digital hospital with the highest "Stage 7" level could regulate serum flow rate of an inpatient in any clinic by means of an application in his/her cell phone. According to specialists, digital hospital concept could bring 35% productivity to the hospitals (saglikbilisimzirvesi.org).

METHOD: The data of the study were obtained using qualitative research method (analysis of secondary data and applications). In this context, the 4.0 Health applications that are actively used in health services in Turkey was assessed and good practice examples was studied in the study.

RESULTS: As a result of the study, 4.0 Health Applications in Turkey such as digital hospital, telemedicine, e-pulse, digital pathology, chronic patient monitoring system with mobile devices for homecare, e-dietician, e-Eye diseases, mobile first aid and online disease consultation are actively used in Turkey.

REFERENCES

- American Telemedicine Association, (2015). <http://www.americantelemed.org/about-telemedicine/what-is-telemedicine#>. V6hhPLiLTIU
- Kılıç T.(2016). e-Sağlık ve Teletıp. İstanbul: AZ Yayınları; 2016;
- Thuemmler, C, Bai,C.,(2017). Health 4.0: How Virtualization and Big Data are Revolutionizing Healthcare, Springer International Publishing AG
- saglikbilisimzirvesi.org. [www.saglikbilisimzirvesi.org /dijital-hastane/ag](http://www.saglikbilisimzirvesi.org/dijital-hastane/ag) adresinden erişildi.
- WHO,(2016b). mHealth New horizons for health through mobile Technologies), Global Observatory for eHealth series - Volume 3. p.6. 201115.www.who.int/goe/publications/goe_mhealth_web.pdf, s12 ağ adresinden erişildi.
- ec. europa.eu. http://ec.europa.eu/health/ehealth/policy/index_en.htm ağ adresinden erişildi.
- European Parliament, Policy Department, (2016). Industry 4.0, [www.europarl.europa.eu/RegData/etudes/STUD/2016/570007/IPOL_STU\(2016\)570007_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/570007/IPOL_STU(2016)570007_EN.pdf)

An Extended Research on Subordinates Leader Member Exchange (LMX) Degree, Psychological Contract Breach and Organizational Identification

Mehmet Emirhan Kula, Erzurum Technical University, emirhan.kula@erzurum.edu.tr

ABSTRACT

As the work environment becomes increasingly globalized, fast paced, and competitive, the pressure on organizations to improve continuously, innovate, and adapt grows accordingly. The history of followers' interactions with their leaders shapes their perceptions of the nature and quality of those relationships. Such relationships develop over a period of time and are based on role-making episodes. A high quality leader-member exchange relationship involves more exchange of effort, resources and support between the two parties. These relationships are characterized by liking, loyalty, professional respect and contributory behaviors. Therefore, there has been evidence on followers' identification with their leader can extend to their identification with the organization. The main purpose of the study is to determine the relationship between leader-member exchange theory, psychological contract breach and organizational identification from the subordinate's perspective.

KEYWORDS: Leader Member Exchange, Psychological Contract Breach and Organizational Identification

1. Introduction; Theoretical Background

1.1. Leader Member Exchange Theory (LMX)

As the work environment becomes increasingly globalized, fast paced, and competitive, the pressure on organizations to improve continuously, innovate, and adapt grows accordingly (Berg, Grimstad, Miha, Cerne, 2017). The history of followers' interactions with their leaders shapes their perceptions of the nature and quality of those relationships. Such relationships develop over a period of time and are based on role-making episodes. This history results in leaders developing different types of relationships with their various followers (Little, Gooty, and Williams, 2016). According to Maslyn and Uhl-Bein (2001), research on leader-member exchange (LMX) has shown the value of high-quality leader-member relationships in organizations (p. 697). The foundation of the LMX proposes that individuals form unique relationships with a given leader based on giving and receiving various phenomena ranging from promotions to extra effort. It follows that the core of LMX is the leader-follower exchange for each dyad or matched pair (an individual level of analysis) (Bernerth and Hirschfeld, 2016).

LMX refers to a kind of social exchange between leaders and followers. The relationship is usually established in three stages, namely role-taking, role-making and role routinization (Graen & Uhl-Bien, 1995). In these interactive processes, leaders will assign their followers certain roles, and based on the responses from followers, leaders will decide whether to send other roles for followers and continue to build the relationship or not. In a high-quality LMX, leaders regard followers as "in-group members", and the social exchange relationship between

them is characterized by mutual trust, support and respect (Peng, Chen, Xia, & Ran, 2017). Early works in LMX have underscored the importance of member attributions and categorizations of leader behavior in forming LMX evaluations. Considering that the experience, expression, and partner's responsiveness to emotions in interpersonal relationships is laden with information, attributions and intentionality, a focus on such emotion phenomena is key to understanding how such high quality LMX relationships could be fostered (Little, Gooty, and Williams, 2016). When the issue of effort is considered, exchange relationships based on various dimensions of LMX would likely show differences in terms of whose effort is most important (Maslyn and Uhl-Bien, 2001). Focusing on the quality of connection between employees is essential for understanding individual and organizational behavior and critical in order to understand why and how people thrive at work (Dutton & Heaphy, 2003).

1.2. Psychological Contract Breach (PCB)

Psychological contracts (PC) play an important role in understanding and effectively managing employee attitudes and behaviors. The psychological contract framework is based on the underlying notion that employees expect their organization to meet a large number of wide ranging obligations as part of the official and unofficial employee–employer contract (Hartmann, N. N., & Rutherford, B. N. 2015). According to Rousseau (1989), “when an individual perceives organizational contributions he or she makes obligate the organization to reciprocity (or vice versa), a psychological contract emerges” (p. 124). Contrasting with labor contracts, the terms of a psychological contract are not written, stated, negotiated, or discussed, but they can be restructured by a context that implicitly or explicitly transmits a future commitment or intent. When one party fails to keep up the promises or obligations, a psychological contract breach occurs (Costa and Neves, 2017). Hence, psychological contract breach refers to the employee's perception concerning the degree to which the organization has failed to fulfill its promises or obligations (Robinson & Rousseau, 1994). Therefore, employees often instill a perceived contract with meanings that are associated with great importance to their presence in an organization. Empirical evidence shows that employees who fulfill a PC often demonstrate a positive wellbeing and attitude towards work (Conway, Guest & Trenberth, 2011)

1.3. Organizational Identification (OI)

Organizational identification is the process by which the goals of the organization and those of the individual become increasingly integrated or congruent (Tolman, 1943). In other words, organizational identification concerns the perception of "oneness" with an organization (Ashforth and Mael, 1989) and an another type of self-identity that drives individuals' sense of belonging (Fallatah, Laschinger, & Read, 2017). According to Knippenberg and Sleebos (2006) “organizational identification reflects the level of overlap between one's own identity and the organization's identity” (p.573). Organizational identification has been explained with social identity theory. From social identity theory, two basic motives for identification can be derived: (1) the need for self-categorization, which may help to define "the individual's place in society" and (2) the need for self-enhancement, which requires that group membership be rewarding (Smidts, Pruyn, & Van Riel, 2001). In addition to this, current research in organizational

identification is anchored in and builds upon social identity theory whereby individuals classify themselves and others into various social categories such as organizational membership, gender, race, age cohort, or religious affiliation and view their membership in particular groups based on social roles and role relationships (Jones and Volpe, 2011). On the other hand, organizational dis-identification is a condition in which an employee's sense of self or self-definition—i.e., values, core beliefs, etc.—stands in direct opposition to what he or she perceives defines the organization. Therefore, likewise to organizational identification, dis-identification describes the role that the organization plays in an employee's self-concept (Zagenczyk, Gibney, Few, & Scott, 2011).

2. Relationship Between Leader-Member Exchange Theory, Psychological Contract Breach and Organizational Identification

LMX is perhaps the most popular conceptualization of the give and take that occurs between leaders and their followers. The theory of LMX, which has evolved from a vertical dyad theory to a social exchange theory of voluntary behavior (Bernerth, Armenakis, Feild, Giles, & Walker, 2007) has been afforded a prominent place in the study of leadership. LMX theory has considered the exchanges between members to be essentially work-related. That is, they consist of work-related behaviors such as effort toward the job or favorable task assignments (Maslyn and Uhl-Bien, 2001). LMX relationships are traditionally believed to fall on a single continuum from low-quality to high-quality relationships (Berg, Grimstad, Miha, Cerne, 2017). A high quality LMX relationship involves more exchange of effort, resources and support between the two parties. These relationships are characterized by liking, loyalty, professional respect and contributory behaviors. In contrast, low quality LMX relationships are characterized by minimal exchange of effort, resources and support between the two parties. Prior research has established LMX to be associated with subordinate organizational citizenship behaviour and in-role performance (Tierney, Bauer and Potter, 2002). LMX is measured a basis of social support that moderates the negative influence of psychological contract breach on employee performance. According to the stress-buffering mechanism in the social support literature (Cohen and Wills, 1985), support moderates the relationship between stressors and tensions (Restubog, Bordia, Tang, and Krebs, 2010). On the other side an opposite study has been found that controlling for individual-level perceptions of LMX quality, results indicated a positive relationship between LMX and psychological contract fulfillment, which was strengthened as group-level variability in LMX quality increased (Henderson, Wayne, Shore, Bommer, & Tetrick, 2008). Ultimately, Settoon, Bennett, and Liden (1996) mentioned that perceived organizational support is associated with organizational commitment, whereas leader-member exchange is associated with citizenship, psychological contracts and in-role behavior (p. 223).

Psychological contract breach is recognized to have negative consequences on a variety of employee attitudes and engagements such as reduced job satisfaction, weakened organizational commitment, diminished customer-oriented and coworker-oriented citizenship behavior and

turnover intentions (Hartmann, N. N., & Rutherford, B. N. 2015), in that case breach has some social effects on employee behaviors. Researches have been conceptualizing and empirically evaluating the employee-organization relations as a social exchange association in which the organization delivers employees with quantifiable and socioemotional rewards in exchange for their efforts to help the organization achieve its goals (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Organizational identification is the process by which the goals of the organization and those of the individual become increasingly integrated or congruent (Hall, Schneider and Nygren, 1970). Unlike organizational identification, organizational dis-identification occurs when employees psychologically disconnect or distance themselves from the organization (Kreiner and Ashforth 2004). As a result, the organization's successes and failures affect employees personally: successes increase and failures decrease employee self-esteem. Thus, as a result of identification, employees tend to be more committed, more engaging in citizenship behavior, and are less likely to leave (Zagenczyk et al, 2011). It is essential to consider both psychological contract and organizational identification are not formal and implied organizational application but inherently more intuitional and perceptual. From this perspective, even though there has been limited empirical evidence on employees' perceptions of psychological contract breach for organizational identification, still there is evidence that when employees experience a psychological contract breach, they will no longer perceive the individual- organization association as rewarding and their organizational membership as fulfilling their needs (Epitropaki, 2003) As a result, they will be less likely to make an investment to the organizational community, their member designation will lose meaning and value, and their sense of belonging will be seriously eroded. They will be, therefore, less willing to identify with the organization (Epitropaki, 2013)

Studies have been discussed that followers' identification with their leader can extend to their identification with the organization (Sluss, Ployhart, Cobb, & Ashforth, 2012). Also Sluss and Ashforth (2007) mentioned that "the conjunction of personal and organizational identification may be effected by leadership behaviors (p. 14). Thus, once subordinates identify themselves with the leader they will eventually identify with the organization itself. This proposal supports with a growing body of research representative that individuals' organizational identification is influenced by their identification with the leader (Fallatah, Laschinger, & Read, 2017). Furthermore, it has found that subordinates who feel greater supervisor identification will deeply value and desire maintaining, expanding, and enhancing the supervisor-subordinate relationship. Being identified with the leader and motivated by mutual reciprocity and relational expectations, subordinates will be more likely to act on the supervisor's behalf, such as by volunteering to perform extra-role behaviors outside their explicit job descriptions (Zhang and Chen, 2013). Additionally, according to Tyler and Blader (2003) "being treated in a fair manner affirms one's acceptance and worth as a group member, thereby increasing identification and engagement with the group" (p. 353).

3. Methodology

3.1. Purpose of the Research and Hypothesis

The main purpose of the study is to determine the relationship between leader-member exchange theory, psychological contract breach and organizational identification from the subordinate's perspective. For this reason, the following hypothesis have been determined for research:

H1: The increase in employees' leader member exchange level will negatively affect their perceived psychological contract breach.

H2: The increase in employees' leader member exchange level will positively affect their organizational identification.

H3: The perceived psychological contract breach will negatively affect on employees' organizational identification.

3.2. Research Model

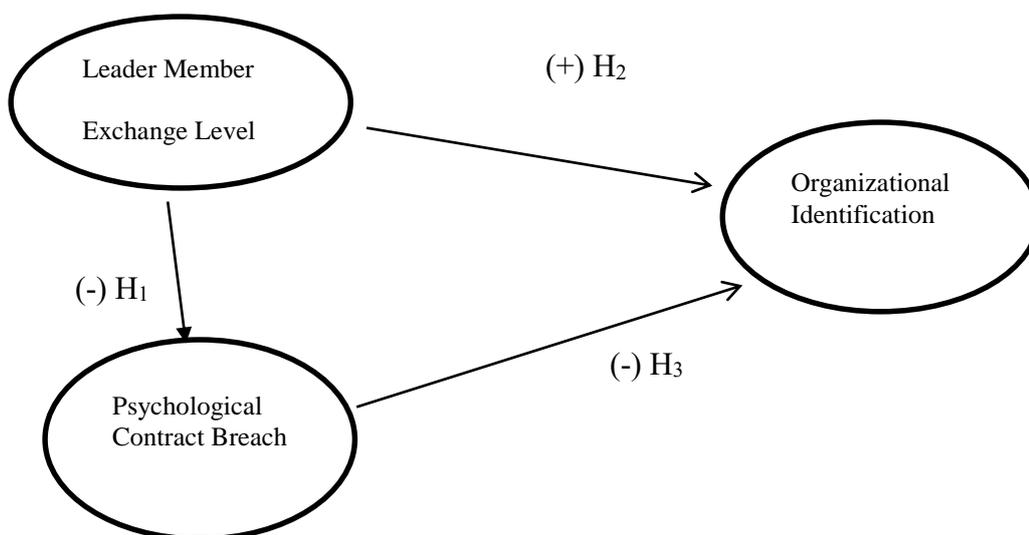


Figure 1: Research Model

3.3. Methods

In order to measure the related scales, a questionnaire distributed on telecommunications industry at a regional directorate in Erzurum, Turkey. Managers and employees have been participated to the questionnaire in order to collect data. There are 250 staff members and the survey system web site (<http://www.surveysystem.com/>) was used to determine the sample size which was given 152. We have distributed 160 questionnaires and 147 filled properly and collected back. The subordinate's level of leader member exchange has been asset with LMX-7 scale which was developed by Graen and Uhl-Bien (1995). As a result of analysis, Cronbach Alpha 0,884 was found. Perceived psychological contract violation (PPCV) scale was used to collect data in order to measure psychological contract breach which was developed by Robinson and Rousseau (1994). As a result of analysis, Cronbach Alpha 0,886 was found. The

9-item scale is planned to measure the perceptions of those surveyed that their employers have fulfilled their obligations to them. Finally, the 6-item scale of organizational identification was used to collect data which is prepared by Mael and Ashforth, (1992). As a result of analysis, Cronbach Alpha 0,905 was found.

4. Findings

Based on the questionnaire; 66.2 % of the participants are men and 33.8 % of them were women. In addition, 63.6% of the participants were single and 36.4% were married. 35.9 % of the participants are between the ages of 18-29, 53.5 % are between the ages of 30-45 and 10.6 % are over 45 years old. Also 8.8 % of the participants work for less than 1 year, 56.9 % work for 1-4 years and 34.3 % work for more than 5 years.

The overall hypothesis results on direct effects according to findings are summarized in Table 1,2 and 3.

Table 1: Hypothesis 1 Results on Direct Effects

Dependent Variable	Independent Variable		
	LMX		
PCB	Beta	t	p
		-,636	-9,894
R ²	,414		
D.R ²	,406		
F	50,488		

According to the results of the regression analysis which psychological contract breach is accepted as a dependent variable and leader member exchange is considered as an independent variable; LMX describes about 40% (R² = ,414) of the total variance of PCB. (Table 1). It is observed that the interaction level between leaders and members affects negatively and significantly the psychological contract breach.

Table 2: Hypothesis 2 Results on Direct Effects

Dependent Variable	Independent Variable		
	LMX		
OI	Beta	t	p
		,523	7,368
R ²	,274		
D.R ²	,269		
F	54,283		

According to the results of the regression analysis which organizational identification is accepted as a dependent variable and leader member exchange is considered as an independent variable; LMX describes about 27 % ($R^2 = ,274$) of the total variance of OI. (Table 2). It is observed that the interaction level between leaders and members affects positively and significantly the organizational identification.

Table 3: Hypothesis 3 Results on Direct Effects

Dependent Variable	Independent Variable		
	PCB		
OI	Beta	t	p
		-,414	-5,465
R²	,172		
D.R²	,166		
F	29,867		

According to the results of the regression analysis which organizational identification is accepted as a dependent variable and psychological contract breach is considered as an independent variable; PCB describes about 17 % ($R^2 = ,172$) of the total variance of OI. (Table 3). It is observed that the psychological contract breach affects negatively and significantly the organizational identification.

Table 4: Hypothesis Test Results

Model	Hypothesis	t	Beta	Results
LMX → PC (-)	H ₁	-9,894	-0,636	Accepted
LMX → OI (+)	H ₂	7,368	0,523	Accepted
OI → PC (-)	H ₃	-5,465	-0,414	Accepted

According to Table 4 all hypotheses were accepted.

Conclusion

Due to today's fast-changing and turbulent work environments, it becomes more and more important for organizational effectiveness feel more identified with their organizations. Business leaders are considered to be one of the most influential factors of organizationally committed work environment (Volmer, Spurrk and Niessen, 2012). This research has been prepared in order to identify the impact degree of subordinates' leader member exchange level on psychological contract breach and organizational identification. The results have been indicated that subordinates' leader member exchange level and organizational identification level negatively effect on perceived psychological contract breach. In other words, a positive affect has been observed between subordinates' leader member exchange level and a positive

relationship is observed between the levels of employee interaction with the leader and psychological contract perceptions along with organizational identification. The results shown that while the degree of leader member exchange level rises, the degree of perceived psychologic breach has been descended. Similarly, while the degree of organizational identification has been rises, the degree of perceive psychologic breach has been descended as well. Our study suggests that leaders should consider strong leader-member relation to motivate employees to expertise their jobs. For instance, leaders can provide individualized support to build a trusting, open, and supportive climate in which subordinates feel welcomed, not psychologically breached but organizationally identified. As Wang, Demerouti, and Le Blanc (2017) recommended, “Leaders can also display behaviors signaling openness and support, such as listening to employees' individual needs, considering their new ideas, and encouraging personal growth” (p. 193).

REFERENCES

- Ashforth, B. E., & Mael, F. A. 1989. Social identity and the organization. *Academy of Management Review*, 14: 20-39.
- Berg, S. T. S., Grimstad, A., Škerlavaj, M., & Černe, M. (2017). Social and economic leader–member exchange and employee creative behavior: The role of employee willingness to take risks and emotional carrying capacity. *European Management Journal*, 35(5), 676-687.
- Bernerth, J. B., Armenakis, A. A., Feild, H., Giles, W. F., & Walker, H. J. (2007). Leader–member social exchange (LMSX): Development and validation of a scale. *Journal of Organizational Behavior*, 28, 979–1003.
- Bernerth, J. B., & Hirschfeld, R. R. (2016). The subjective well-being of group leaders as explained by the quality of leader–member exchange. *The Leadership Quarterly*, 27(4), 697-710.
- Cohen, S. and T. A. Wills (1985). ‘Stress, social support and the buffering hypothesis’, *Psychological Bulletin*, 98, pp. 310–357.
- Conway, N., Guest, D., & Trenberth, L. (2011). Testing the differential effects of changes in psychological contract breach and fulfillment. *Journal of Vocational Behavior*, 79(1), 267-276.
- Costa, S. P., & Neves, P. (2017). Forgiving is good for health and performance: How forgiveness helps individuals cope with the psychological contract breach. *Journal of Vocational Behavior*, 100, 124-136.
- Dutton, J. E., & Heaphy, E. D. (2003). The power of high-quality connections. In K. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 263e278). San Francisco, CA: Berrett-Koehler
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500-507.
- Epitropaki, O. (2013). A multi-level investigation of psychological contract breach and organizational identification through the lens of perceived organizational membership: Testing a moderated–mediated model. *Journal of Organizational Behavior*, 34(1), 65-86.
- Epitropaki, O. (2003). Transformational leadership, psychological contract breach and organizational identification. *Academy of Management Best Paper Proceedings*, OB, pp. M1–M6.
- Fallatah, F., Laschinger, H. K., & Read, E. A. (2017). The effects of authentic leadership, organizational identification, and occupational coping self-efficacy on new graduate nurses' job turnover intentions in Canada. *Nursing Outlook*, 65(2), 172-183.
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2), 219–247.
- Hall, D. T., Schneider, B., & Nygren, H. T. (1970). Personal factors in organizational identification. *Administrative science quarterly*, 176-190.
- Hartmann, N. N., & Rutherford, B. N. (2015). Psychological contract breach's antecedents and outcomes in salespeople: The roles of psychological climate, job attitudes, and turnover intention. *Industrial Marketing Management*, 51, 158-170.

- Henderson, D. J., Wayne, S. J., Shore, L. M., Bommer, W. H., & Tetrick, L. E. (2008). Leader--member exchange, differentiation, and psychological contract fulfillment: a multilevel examination. *Journal of applied psychology, 93*(6), 1208.
- Jones, C., & Volpe, E. H. (2011). Organizational identification: Extending our understanding of social identities through social networks. *Journal of organizational Behavior, 32*(3), 413-434.
- Kreiner, G. E., & Ashforth, B. E. (2004). Evidence toward an expanded model of organizational identification. *Journal of organizational Behavior, 25*(1), 1-27.
- Little, L. M., Gooty, J., & Williams, M. (2016). The role of leader emotion management in leader--member exchange and follower outcomes. *The Leadership Quarterly, 27*(1), 85-97.
- Mael, F., & Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of organizational Behavior, 13*(2), 103-123.
- Masllyn, John M., and Mary Uhl-Bien. "Leader--member exchange and its dimensions: Effects of self-effort and other's effort on relationship quality." *Journal of applied psychology 86.4* (2001): 697.
- Peng, J., Chen, Y., Xia, Y., & Ran, Y. (2017). Workplace loneliness, leader-member exchange and creativity: The cross-level moderating role of leader compassion. *Personality and Individual Differences, 104*, 510-515.
- Restubog, S. L. D., Bordia, P., Tang, R. L. and Krebs, S. A. (2010), Investigating the Moderating Effects of Leader--Member Exchange in the Psychological Contract Breach--Employee Performance Relationship: A Test of Two Competing Perspectives. *British Journal of Management, 21*: 422--437. doi:10.1111/j.1467-8551.2009.00673.x
- Robinson, S. L., & Rousseau, D. M. (1994). Violating the psychological contract: Not the exception but the norm. *Journal of organizational behavior, 15*(3), 245-259.
- Rousseau, D. M. (1989). Psychological and implied contracts in organizations. *Employee responsibilities and rights journal, 2*(2), 121-139.
- Settoon, R. P., Bennett, N., & Liden, R. C. (1996). Social exchange in organizations: Perceived organizational support, leader--member exchange, and employee reciprocity. *Journal of applied psychology, 81*(3), 219.
- Sluss, D. M., & Ashforth, B. E. (2007). Relational identity and identification: Defining ourselves through work relationships. *Academy of Management Review, 32*(1), 9-32.
- Sluss, D. M., Ployhart, R. E., Cobb, M. G., & Ashforth, B. E. (2012). Generalizing newcomers' relational and organizational identifications: Processes and prototypicality. *Academy of Management Journal, 55*(4), 949-975.
- Smidts, A., Pruyn, A. T. H., & Van Riel, C. B. (2001). The impact of employee communication and perceived external prestige on organizational identification. *Academy of Management journal, 44*(5), 1051-1062.
- Tajfel, H., Turner, J.C., 1986. The social identity theory of intergroup behaviour. In:Worchel, S., Austin, W.G. (Eds.), *Psychology of Intergroup Relations*. Nelson-Hall, Chicago, IL, pp. 7--24.
- Tierney, P., T. Bauer and R. E. Potter (2002). 'Extra-role behavior among Mexican employees: the impact of LMX, group acceptance, and job attitudes', *International Journal of Selection and Assessment, 10*, pp. 292--303.
- Tolman, Edward C. 1943 "Identification in the post-war world." *Journal of Abnormal and Social Psychology, 38*:141-148.
- Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and social psychology review, 7*(4), 349-361.
- Van Knippenberg, D., & Sleebos, E. (2006). Organizational identification versus organizational commitment: self-definition, social exchange, and job attitudes. *Journal of organizational Behavior, 27*(5), 571-584.
- Volmer, J., Spurk, D., & Niessen, C. (2012). Leader--member exchange (LMX), job autonomy, and creative work involvement. *The Leadership Quarterly, 23*(3), 456-465.
- Wang, H. J., Demerouti, E., & Le Blanc, P. (2017). Transformational leadership, adaptability, and job crafting: The moderating role of organizational identification. *Journal of Vocational Behavior, 100*, 185-195.
- Zagenczyk, T. J., Gibney, R., Few, W. T., & Scott, K. L. (2011). Psychological contracts and organizational identification: The mediating effect of perceived organizational support. *Journal of Labor Research, 32*(3), 254-281.
- Zhang, Y., & Chen, C. C. (2013). Developmental leadership and organizational citizenship behavior: Mediating effects of self-determination, supervisor identification, and organizational identification. *The Leadership Quarterly, 24*(4), 534-543.