

Varazdin Development and Entrepreneurship Agency  
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Pearson College London  
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Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat



# Economic and Social Development

42<sup>nd</sup> International Scientific Conference on Economic and Social Development

## Book of Proceedings

Editors:

Gordana Dukic, John Clifford, David Atkinson



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# MODEL FOR ANALYZING MARKET AND ACTIVITIES OF MARKETING MANAGERS FOR IMPROVING BUSINESS OPERATIONS

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## **ABSTRACT**

*For marketing management it can be said that it is the practical application of important business and marketing techniques. This is the analysis, planning, implementation and control of the program prepared to design, build and maintain mutually beneficial exchanges with target markets. The work of the company in most cases occurs in the middle of changing and uncertain conditions. In other words, there is a vague state of so much uncertainty leads to increased danger. The refore, the obligation of the company is to investigate the information in different ways. Undertake such must receive sufficient information to help make positive decisions for the purpose of its existence and generating profit. One of the ways of getting information is a system for collecting marketing data and information; we will try to define object types, activities and ways of functioning of the system for collecting marketing data and information. The system for collecting marketing data and information is part of company marketing information system. It needs to enable the company to cope with activities and new challenges, including extensive knowledge of the environment, and a lot of knowledge and information obtained through a system for collecting marketing data and information that is responsible for creating special conditions for companies, how it would improve the business of this company and the relationship with consumers.*

**Keywords:** *business operations, information, marketing, management*

## **1. INTRODUCTION**

It is of great importance that marketing management has precisely updated information in order to perform tasks well. Marketing is becoming increasingly proactive, and must seek to identify changes and trends in the macro-environment and then translate these into action plans. In order to carry out this task, the concept of the marketing information system (MkIS) has been developed and this forms an integral part of the corporate management information system (MIS). Marketing research collects information and a marketing information system (MkIS) analyses and acts on such information. MkIS is a computerized system that is designed to provide an organized flow of information to enable and support the marketing activities of an organization. The MkIS serves collaborative, analytical and operational needs. In the collaborative mode, the MkIS enables managers to share information and work together virtually. In addition, the MkIS can enable marketers to collaborate with customers on product designs and customer requirements (Lancaster, 1993, pp 125). The analytical function is addressed by decision support applications that enable marketers to analyze market data on customers, competitors, technology and general market conditions.



These insights are becoming the foundation for the development of marketing strategies and plans. These insights become the basis for the development of marketing strategies and plans. MkIS is dealing with operational needs and client management systems that focus on day-to-day user and transaction processing from initial sales through the customer service, which is of paramount importance.

## **2. IMPORTANT MARKETING SYSTEMS**

We need to emphasize that the theory of decision making in economics, psychology, philosophy, mathematics and statistics is related to determining values, uncertainties and other issues that are relevant in the given area, but also, its rationality and optimality (Bidgoli, 1997, pp 171). Most of decision theory is normative or prescriptive. It is concerned with identifying the best decision to take (in practice, there are situations in which "best" is not necessarily the optimum, but within a specific or approximate range, assuming an ideal decision maker who is fully informed, able to compute with perfect accuracy. The practical application of this prescriptive approach is called decision analysis, and aimed at finding tools, methodologies and software to help people make better decisions. The most systematic and comprehensive software tools developed in this way are called decision support systems. Since people usually do not behave in ways consistent with axiomatic rules, often their own, leading to violations of optimality, there is a related area of study, called a positive or descriptive discipline, attempting to describe what people will actually do. Optimal decision often creates hypotheses for testing against actual behavior. Last years there has been increasing interest in "behavioral decision theory" and this has contributed to a re-evaluation of what rational decision-making requires. Marketing decision support systems (MDSS) constitute a set of core applications of the MkIS. The MDSS provides computer-based tools, models, and techniques to support the marketing manager's decision process. (Fugate, 2007, pp 42). In the general case, MDSS is optimized for queries of historical data. MDSS data typically are derived from both internal and external market sources. The MDSS includes generating questionnaires and function reports where a manager can access marketing data, analyze them statistically, and use results to determine the optimal flow of action, which is of extraordinary importance.

## **3. MDSS ANALYSIS**

For market analysis they usually use MDSS models to analyze the market, customers, and competitors. The following list presents some of the most common types of MDSS analysis problems (Kotler, 1997, pp 68):

- Market segment analysis. Using model techniques to identify segments and analyze economic trends, demographics and behavior.
- Market share analysis. Analyze trends and determinants of market share.
- Competition analysis. Analysis of the market positions of competitors, the base of economic clients, and marketing strategies.
- Price Analysis. Identifies and analyzes factors that affect the firm's ability to set prices, including price elasticity and demand analysis. It involves internal economy and market relations.
- Analysis of the expenses. It examines the overall cost structure of the company and its impact on the cost of the product. The margin analysis combines cost-analysis with price analysis. An analysis of variables requires an explanation of excessive costs and minors.
- Sales Analysis. It studies the distribution of company sales by region, products, brands, sales offices.
- Forecasting sales. Develops estimates of sales potential by products, region, sales territory, and brand.
- Productivity of sales forces. It examines the efficiency and effectiveness of sales forces.

- Advertising analysis. Analyzes the effectiveness of advertising, media selection and branding innovation.
- Distribution. Analyzes decisions from economic and strategic perspectives.
- Simulation. Simulates decision-making in different strategic scenarios.
- Customer satisfaction. Analyzes questions concerning customer expectations and outcomes with the product.

#### **4. INFORMATION SYSTEMS AND TECHNOLOGY OF THE MARKETING DATABASE**

Technological development can be said to have had a major impact on marketing information systems. These developments are underpinned by relatively cheap yet sophisticated computing power which is facilitating improvements in data collection storage, manipulation and retrieval (Kachur, 2000, pp 112). A technology that speeds up results from a market research survey uses computer assisted telephone interviewing that provides instant data feedback to the control centre as interviews are conducted and questionnaires completed through a hand-held computer in a wireless Internet location. Databases Developments in information collection, storage and analysis are making information an important competitive asset. The key to this information revolution is the use of databases in marketing. Essentially, a database represents a pool of information on markets and customers which can be interrogated and analyzed to facilitate improved marketing decision making. Databases are not new, as even a system of manual sales records kept on customers in a filing cabinet is a database. A database can be built from a variety of sources (Khandpur, and Wevers, 1998, pp 89). Examples include customer orders, loyalty cards, customer enquiries, subscription lists and ad hoc market research studies. There is a wealth of information available to the point of it being overwhelming. Not only do modern database techniques and technologies help to overcome this problem, but we now know much more about the key factors in developing and using successful databases. Data Warehouse (DW) is a database used for reporting and analysis. Data warehousing is a term used to describe collecting data on customers and markets from several possible sources in a company and storing it in one central database. This has developed because companies have different departments in the organization, each of which has a unique database that is not always made available to the rest of the organization (Berry, and Linoff, 1997, pp 209). The data stored in the warehouse is uploaded from the operational systems. The data may pass through an operational data store for additional operations before it is used in the DW for reporting. A data warehouse maintains its functions in 3 layers: staging, integration, and access. Staging is used to store raw data for use by developers. The integration layer is used to integrate data and to have a level of abstraction from users. The access layer is for getting data out for users. Data warehouses are an integral part of the MDSS. They provide the ability to access data for creating marketing operations reports, analyze sales results over time, identifying and mapping patterns, trends, that may be emerging in the market, and enabling the development of new products, pricing, market segmentation strategies, marketing communications campaigns, and distribution channels. IBM defines a data warehouse as a place that stores enterprise data designed to facilitate management decisions. In essence, a data warehouse provides the basis for an analytical system where periodic data points are collected and stored at specified times for future analysis. Data warehousing enables marketers to capture, organize, and store potentially useful data about customers and markets for decision-making purposes. Data mining is the computer-based exploration and analysis of large quantities of data in order to discover meaningful patterns and rules for the purpose of improving marketing, sales, and customer support operations. The combination of data mining procedures with data warehousing enables the MDSS to move beyond just support for the operational processes in the marketing organization and to focus on actual customer behavior.

Data mining and data warehousing provide the means and the infrastructure for extracting strategic opportunity from knowledge of the customer. Companies need a method for viewing all customer and marketing-related information in an integrated way. Often marketing organizations maintain multiple databases for each business and marketing activity with data that is not easily integrated for strategic or operational purposes. A new generation of software that is Internet based gathers information from customer service, Web sites, direct mail operations, telemarketing, field sales, customer service, distributors, retailers and suppliers for the purpose of managing marketing, sales and customer service activities (Lancaster, and Massingham, 2002, pp 132) The major applications families are commonly referred to as sales force automation (SFA) and customer relationship management (CRM) systems. Some CRM systems are fully integrated with SFA applications and some are standalone. Customer relationship management (CRM) are software applications that managed the interaction of customers with an organization. They are used to increase the yield on marketing efforts and to enable understanding of the complete history of company interaction, with their clients. CRM systems are able to target promotions to potential customers, facilitate sales and deliver customer service, which helps a lot.

## **5. INTELLIGENT SYSTEMS IMPORTANT FOR MARKETING**

It is quite certain that the market intelligence system deals with the collection and analysis of current developments in the marketing environment. This is usually considered as a sub-marketing submarket, called desk research. However, we are considering this as an integral part of MkIS, so it is logical that marketing research is also included (Mougayar, 1998, pp 207). The main sources are secondary sources of data, of which the main is now summarized. The process of the marketing information system consists of collecting; analyzing the expansion of marketing information relies on several steps in the process:

- Determine which metrics are included in your marketing information system. This is a very serious step in creating an effective marketing information system. All data have costs, realistic and opportunity costs, so the inclusion of the RIGHT metric is critical. Measure the wrong things and make bad decisions and spend money (Shepard, 1998, pp 157). An example is measuring the fan on your Facebook site. Of course, there is a small advantage to have more fans, but their ROI contribution is relatively small. Making decisions that focus on increasing the number of fans probably cost more money than the ROI you are looking for. Measure too many metrics and the analysis becomes difficult. It's like trying to find a needle in a haystack. A huge amount of seeds (useless data) hides useful data - a needle. Just because you can measure something does not mean that you should. Metering accumulation costs money. Data is only valuable when the value that contributes to improved delivery, the decision exceeds the cost of data collection - and it is mandatory to include the human cost of collecting and analyzing this data on other costs in obtaining data.
- Collect relevant data. Some data come from internal sources, such as sales records, accounting numbers, analytics websites, and reports from your sales force (Shim, et al. 1999, pp 102). Other data come from external sources, including competitive results, economic metrics, post metrics and Facebook Insights. Your marketing research data can also be part of your marketing information system, such as Periodical customer satisfaction surveys.
- Draw data. It is very difficult to make decisions based on raw data, because the data are invisible patterns that could otherwise indicate appropriate actions. For example, it's hard to see the atrend of reducing customer satisfaction without graphic display of data until the fall until then it might be too late to reverse the trend (Galliers, and Sutherland, 2009, pp 99). Scheduling data allows managers to quickly detect changes in critical metrics over time. Of course, you can use a graphical function, Excel or other data program, but newer

visualization software makes the job even easier. Examples of software that provide superior data visualization are IBM Cognos Insight ;Tableau Software, and SAP Visual Intelligence. Some even create control panels to bring all of your marketing metrics in one place, making it easy to make decisions.

- Download results. The more people have information from your marketing information system, the better. But not everyone will understand the tables of all the data or even visualization on the control panel above. This is because your marketing information system requires interpreting through the objective of marketing knowledge (Gounaris, Panigayrakis, and Chatzipanagiotou. 2007, pp 202).
- Make marketing decisions. The final step in the process is to use metrics from your marketing information system, and decisions that optimize your marketing results will prove to be quite effective.

## 6. MARKETING REVIEW - EXAMPLES

When it comes to the global level, in the most developed countries the information provided by the government is probably the most valuable external source of secondary data. The more potentially useful types of government information include: Census data: most governments conduct a regular census of their citizens. Census data is necessary for government planning and policy making but it is also a valuable source of information for the marketer (Kotler, and Keller, 2009, pp 56). Census information includes information on numbers in the population, household and individual data such as number in household, age, sex, and marital status, and socioeconomic class, country of birth, education and economic activity. Economic activity: most governments collect and publish statistics about occupations and the employed population classified into branches of industry. In most developed countries key statistics, covering age, distribution, socio-economic status, housing conditions, housing tenure, car ownership and many others are available. These statistics are used by marketing organizations to evaluate potential markets and often form the basis of segmentation and targeting strategies. Income and expenditure statistics contain information on national income and expenditure, population statistics, labor, production, agriculture and food, energy, chemicals, textiles, construction, retailing and catering, transport, external trade, wages and prices, entertainment and overseas and home finance (Kenning, Plassman, and Ahlert, 2007, pp 108). Approach and Expense Statistics means: collecting and publishing information about number, size, fidelity, and change in the diversity of site sales. Reporting and Expenditure Statistics Information on fees, main breakdowns, purchases of materials and fuel, sale and notification of employers. Economic trends are usually informed about aspects such as investment value, retail volume, production index, retail price, gross domestic product, as well as distribution of income, savings and withdrawals, consumption and savings. All the government's top investigations were conducted and collected, collected information on business activities that included objective statistics covering production, delivery and export, and relating to the industrial industry. Statistics on income and expenditure in the UK relate to: food, drink, tobacco, coal, oil, chemicals, engineering, textiles, clothing, footwear, printing, publishing, purpose, ceramics, glass and cement. When it comes to national statistics, they also include information on insurance companies, tourism, acquisitions, and taxes. Such statistics are collected for government purposes, and not specifically for marketing companies. Accordingly, such data may not always correspond to a particular marketing purpose and may need to be modified in detail to be useful. Furthermore, many of these statistics have been collected by the government to develop a general macroeconomic policy. For making such decisions, common aggregates of data are usually sufficient, and different governments, and agencies will often use a number of assumptions and conventions in compiling statistics that can affect their validity, especially when they are used outside the context in situations that are not listed and for which originally

assembled (Senior, Smyth, Cooke, Shaw, and Peel, 2007, pp. 305). State statistics are mostly free and it is a useful source of information that must be used carefully in the development of marketing plans. Details of the scope and sources of information published by governments in different countries can be found in the relevant texts of marketing research. United Nations - in addition to its political role, the UN operates through many agencies. Those who deal with industrial and commercial researchers are: UNDP and UNIDO both work mainly on helping developing countries. Each has international staff and engages in a wide range of international operations. By supporting these operations, surveys are regularly carried out and reports on industrial commercial issues worldwide are published (Arnold, 2005, pp. 147). International bodies, in addition to organizations sponsored by the UN, also have some that are related to the UN and others who are independent but cooperate. Such sources are generally very reliable and are the main ones: the World Health Organization (WHO), which mainly deals with global health issues such as fighting the disease and giving guidance on hygiene. Its activities are of interest for marketing, but also for people who deal with pharmaceutical trade. The International Labor Office (ILO) mainly deals with attempts to find work and create employment in underdeveloped areas. To a certain extent, its activities take place in parallel with UNDP and UNIDO, but mainly focuses on employment and work training. The World Trade Organization (WTO) mainly deals with international negotiations on trade and tariff reforms, but also issues publications on trade and industry. The European Union through Eurostat mainly deals with the development of trade in industry in Europe. It has a large number of publications on trade and industrial issues that are mainly concerned about Europe. Since non-European countries have links with the European Union, some publications also have studies and reports on the activities of other countries. Food and Agriculture Organization (FAO) - food and agriculture related is the use of fertilizers and insecticides. Organization for Economic Co-operation and Development (OECD): this organization aims to achieve the highest sustainable growth, employment and living standard in Europe, to contribute to economic development and to expand world trade on a multilateral basis. As a result, the OECD produces many publications such as Food Marketing and Economic Growth and the organization and management of a voluntary agency for food and drinking water.

## **7. CONCLUSION**

Only clear and innovative ideas about e-commerce and e-commerce applications can create a revolutionary impact on marketing discipline. Marketing information systems are especially transformed as new technologies and enable the integration of marketing management activities. The primary drivers of this change are statistics that provide the possibility of a faster value at a lower price. Future implementation of MkIS will increasingly involve clients in the process, creating value, and working on more efficient synchronization of companies and its supply chains with rapidly changing market opportunities. MkIS increases the number of available options for decision makers, and supports each element of the marketing strategy. MkIS influences marketing management and confrontation with customers, suppliers and other partners. The main advantages of MkIS are: impact in the areas of functional integration, market monitoring, strategy development and the application of this strategy. Through the use of market research and marketing intelligence, MkIS's activities can enable the identification of new market segments and tracking the market environment for changes in consumer behavior, competitor activities, new technology, economic conditions and government policies. Market research is situational in nature and focuses on specific strategic or tactical marketing management initiatives. Marketing intelligence is continuous in its nature and involves monitoring and analyzing a wide range of market activities and sources of information. Syndicated data published by market research companies and industrial associations is of great importance, but the primary research sponsored by the company is only important.

It's much more focused because you are posing specific questions from respondents within your market, but it costs a lot more cost. Perhaps the best available data is when it comes to user behavior recorded on web sites, POS sales and systematic feedback from sales forces. MkIS provides the necessary information important for the development of a marketing management strategy. Development of strategies for: new products, positioning, marketing communications (advertising, public relations and sales promotion), pricing, personal sales, distribution, customer service and partnership and alliance. MkIS provides the basis for e-commerce that depends on the development of the information strategy system. MkIS provides support for product launches, facilitates the coordination of marketing strategies, and is an integral part of Sales Force Automation (SFA), Customer Relationship Management (CRM), and the implementation of customer service systems. MkIS enables decision-makers to more effectively manage sales forces as well as clients. Some USM software companies expand their CRM applications that include Partner Relationship Management (PRM) capabilities. This has become more and more important that many traders decide to apply in marketing and to form a strategic relationship, to solve new markets. MkIS enables the coordination of activities within the marketing department and between marketing management and other organizational functions such as engineering, manufacturing, product management, finance, production, logistics and services to customers who promote business and relationships in relation to consumers - companies.

#### **LITERATURE:**

1. Arnold, D. (2005). *Marketing Management: organization of food and beverages* 9th edn, Maidenhead: McGraw-Hill
2. Berry, M. J. A. and Linoff, G. (1997). *Data Mining Techniques for Marketing, Sales and Customer Support*, New York: Wiley
3. Bidgoli, H. (1997). *Modern Information Systems for Managers*, San Diego: Academic Press
4. Fugate, D.L. (2007), 'Neuromarketing; a layman's look at neuroscience and its potential application to marketing practice', *Journal of Consumer Marketing*, 24(7)
5. Galliers, R.D. and Sutherland, A.R. (2009), 'The evolving information systems strategy', in Galliers, R.D., Leidner, E.D. and Baker, B.S.H. (eds), *Strategic Information Management*, 2nd edn Hansen, W, (2000). *Internet Marketing*, Cincinnati, Ohio: SouthWestern Publishing
6. Gounaris, S.P., Panigayrakis, G.G. and Chatzipanagiotou. K.C. (2007), 'Measuring the effectiveness of marketing information systems: an empirically validated instrument', *Marketing Intelligence and Planning*
7. Kachur, R. (2000). *Data Warehouse Management Handbook*. Paramus, N.J.: Prentice Hall
8. Khandpur, N. and Wevers, J. (1998). *Sales Force Automation Using Web Technologies*. New York: Wiley
9. Kotler, P. and Keller, K. (2009), *Marketing Management*, 13th edn, London: PrenticeHall
10. Kotler, P. (1997). *Marketing Management: Analysis, Planning, Implementation, and Control*, 9th Edition. Upper Saddle River, N.J.: Prentice Hall
11. Kenning, P., Plassman, H. and Ahlert, D. (2007), 'Applications of functional magnetic resonance imaging for marketing research', *Qualitative Market Research: An International Journal*, 10(2)
12. Lancaster, G. and Massingham, L.C. (2002), *Essentials of Marketing*, 4th edn, Maidenhead: McGraw-Hill
13. Lancaster, G. (1993), 'Marketing and engineering: can there ever be synergy?', *Journal of Marketing Management*, 9
14. Mougayar, W. (1998). *Opening Digital Markets*. New York: McGraw-Hill
15. Shepard, D. (1998). *The New Direct Marketing*, New York: McGraw Hill

16. Senior, C., Smyth, H., Cooke, R., Shaw, R.L. and Peel, E. (2007), 'Mapping the mind for the modern market researcher', *Qualitative Market Research: An International Journal*, 10(2)
17. Shim, J. et al. (1999). *Information Systems Management Handbook*. Paramus, N.J.: Prentice Hall

# EMOTIONAL INTELLIGENCE: AN INTANGIBLE CAPITAL LINKED CLOSELY TO ORGANIZATIONAL PERFORMANCE AS A LIABILITY - CASE OF SAHAM COMPANY

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## **ABSTRACT**

*Our research attempts to identify a reality that is emerging: the effect of emotional intelligence on employees' behavior and organizational performance. Introduced in the early 1990s, the concept of emotional intelligence, which recognizes the importance of emotion discovery, communication, thoughtfulness and management, has since been seen as the solution to a wide range of social problems present in the business world. Emotional intelligence nowadays predicts professional success better than other factors such as technical skills, education or even social background. Emotional skills, or the capability to build and maintain positive connections, are replacing traditional or intellectual skills as a way to forecast the potential and continuing success of a career. Management is less and less considered as a managerial and exclusively rational exercise: some companies believe that emotions contribute to performance. But how to identify them, manage them? How does one analyze the growing interest of companies for emotional intelligence and more broadly for the question of emotions in management? What is the purpose of managing emotional skills in the world of work? And how can we introduce training in emotional intelligence while promoting its benefits for our immaterial capital? And what are its limits as well as its promises? It is the object of training, workshops, and coaching inspired by the now famous concept of emotional intelligence while linking its traits to organizational performance.*

**Keywords:** *emotional intelligence, emotional quotient, organizational behavior, organizational performance*

## **1. INTRODUCTION**

The underlying idea is that if emotions are taken into account at school or in the company, the world will become more cooperative and attentive to the human nature. There is a growing recognition that emotional intelligence, like any skill, can be used for good or for bad. A strategic use of emotional intelligence in organizations can thus make it a challenging weapon in the service of hateful or unacceptable behavior. On the one hand, controlling one's emotions can hide true intentions, and knowing how to recognize the emotions of others can help manipulate them in a way contrary to their interests. The objective of this paper is to show that we must stop associating systematically between emotional intelligence and moral qualities.



Whether or not associated with positive values, emotional intelligence is in any case perceived as an increasingly central skill in professional life. Emotional intelligence counts more than intellectual quotient in social and professional success, the reason why it is to be highly considered and should be taken into account. The problematic of this study is to present emotional intelligence as a capital closely linked to the knowledge of intangible capital, thus to organizational performance. The goal is to involve the organization's staff in a know-how of this discipline while promoting its promises. Are companies that operate and effectively manage their knowledge capital the ones with the best performance? Companies with more knowledge consistently achieve better results. Do people who manage their emotions well get the best paying jobs? In a world of globalization and acute competition, immaterial capital is certainly a very distinguished competitive force, the latter is not complete without being linked to emotional intelligence. Emotions are increasingly erupting in thinking about the leadership and skills of managers, breaking with a model exclusively based on a managerial and rationalist logic. The concept of Emotional Intelligence has been developed by American authors, who have come up with an operational model for the world of work, hence its success. Training, co-development, coaching, and even more practices aiming at involving employees for some businesses make management of emotions a factor in improving the quality of management, sometimes in a logic of quality of life at work and in the framework of a better management of its capital immaterial.

## **2. INTANGIBLE CAPITAL**

In a knowledge organization, the challenge is competitiveness linked to innovation. As a result, the book value of a company or organization is no longer meaningful at its true value. The intangible value values the future: it takes into account all the factors that allow an organization to solve problems quickly. There is currently no way to accurately measure and quantify the value of a company's intangible capital. Intangible capital is defined by the set of powers that exist in an organization and that come from different resources such as human and organizational capital.

### **2.1. Human capital**

On the Web site of "La documentation Française", it is possible to read that the basic idea of the theory of human capital, developed by BECKER, Nobel Prize 1992, is to consider that from the point of view of the individual, the education is an investment. The value of this depends directly on the monetary cost of education and the anticipated future gains from information. This represents a worthwhile investment if the net present value of the costs and benefits is positive. Investment in human capital is also a profitable investment from the point of view of society. In other words, education also provides social gains that outweigh private gains. This positive externality justifies for some the intervention of the State if not in the economy at least in the care of the education system. For the employer, the distinction between general education and specific training of the individual is of significant importance. Indeed, specific training increases the productivity of the individual only at his employer. The latter can therefore recover the fruit of the investment it constitutes. Human capital enters and leaves, morning and evening, through the door of the company, it, therefore represents a source of income for the company but it does not belong to it. In this case, the company does not own the individuals and their skills, it rents them for a salary. If we go further in this topic, we will find ourselves separating the human capital from the emotional consideration. Human capital is a debt of the company vis-à-vis its employees. It must therefore appear on the liabilities side (PRAX, 2003).

## **2.2. Organizational Capital**

Organizational capital is the ability of the company to combine its intangible factors in processes, (or products) to create value. Unlike human capital, organizational (or organizational) capital is an asset of the company. Such know-how can be formalized into a method or procedure that then becomes the property of the company. This capital is divided into two types, the first one is the internal corporate capital which is the company's ability to create value through its organization, management, innovation and research and development capacity, and this is closely linked to its human capital. The second one is the external capital structure that corresponds to the capacity to implement a value-creating relationship with external partners. Indeed, human capital comes in advance to promote the impact of effective communication to manage the internal structural capital.

## **3. EMOTIONAL INTELLIGENCE**

### **3.1. Managerial definitions**

Emotional intelligence is self-awareness, self-awareness, social sensitivity, empathy and the ability to communicate effectively with others. It is the intuition of what is socially appropriate and of the right moment, the courage to admit one's weaknesses, to express one's differences and to respect those of others. In other words, emotions are indicators that communicate feelings. Emotional Intelligence (IE) is the main determinant of job performance; it explains 90% of the variance associated with job success and performance and it is strongly correlated to cognitive skills. There exists a variety of definitions of IE, they are all capacity based approaches. Mayers, Caruso and Salovey, 1999 (revised from Salovey and Mayer, 1990) suggests that perceiving emotions effectively means identifying emotions from faces, music, and graphic illustrations. Using emotions to facilitate thinking is done via establishing a proper link between emotions and other basic sensations such as colors and textures and using emotions to change perspectives. Understanding emotions and their meanings, however, is done via analyzing and breaking down the emotional processes, understanding the likely transitions from one emotion to another, and understanding complex feelings in stories. Managing emotions is via managing one's own emotions and those of others. As of the mixed approach, Bar-On 1997 suggests five different approaches. He, first of all, emphasized intrapersonal skills as the awareness of one's own emotions, insurance, self-esteem, self-development, and independence. The second concept is interpersonal skills which encloses empathy, relational skills, and social responsibility. The third one is related to adaptability that could be achieved via problem solving, sense of realities, and flexibility. Stress management is also an important factor to consider. This latter is explained via tolerance to stress and impulse control. The last point is the individual's General mood that could be justified via joy and optimism.

### **3.2. Emotional Intelligence in business context**

Emotions are present in all man's activities including management activities. The notion of emotional intelligence is closely linked to the field of management, particularly management, leadership and human resources management. Emotions can both harm and serve a person in the workplace. This is a subject that is mostly taboo in business. Very often, we are in the illusion that we are rational beings and that we should control our emotions. Any untimely emotional event is considered unseemly, childish and ridiculous. It can be perceived as a sign of weakness, even of psychological fragility. On the other hand, the joy, euphoric and natural disinhibited, stimulates the production of hormones of pleasure and allows us to accomplish with enthusiasm all the tasks that fall to us. It is a magnet: it attracts others to us and opens us to sharing. However, having a good management of your emotions is unfortunately not given to everyone. In his recent book (*Cultivating Relational Intelligence*), American psychologist Daniel Goleman tells us that there are two categories of intelligences: emotional and relational.

As we know, we have two hemispheres in our brain. The right hemisphere manages our emotions and our senses, the left hemisphere manages our logic and our vocabulary. Daniel Goleman tells us that an individual's success depends more on his IE than on his IQ. Supporting evidence, he pointed out that, in the professional world, the winners are not necessarily the over-graduates, but those who are humanly appreciated, able to recognize, analyze, and manage their emotions and those of others. When they ask for help with a problem, they get it right away. Thus, many researches show that in the long term, emotional intelligence plays a more important role than mental intelligence in communications, relationships, and leadership. Moreover, the majority of authors consider that emotional intelligence can be developed and trained. Finally, Goleman's claims that EI could predict academic and professional success better than IQ can reduce the prevalence of IQ testing. So, it is imperative to develop one's emotional intelligence in order to succeed in one's interpersonal relationships. In fact, more than 80% of the people who are thanked for their jobs are because of their lack of interpersonal skills. The latest research in psychology and neurobiology proves that we are all capable of improving our emotional intelligence. Daniel Goleman explained five essential skills while defining EI which are: self-awareness as being always aware of one's feelings and using instinctive inclinations to guide decisions. Self-control as managing emotions so that they facilitate their work instead of interfering with it. Conscientiousness and knowing how to defer a reward in the pursuit of a goal are crucial factors in EI at a workplace. Motivation is using one's deepest desires as a compass that guides one's goals, helping one to take initiatives, maximizing one's effectiveness and persevering despite disappointments and frustrations. Empathy is to be in harmony with others' feelings, to be able to adopt their point of view and maintain a harmonious relationship with a wide variety of people. Human skills are about controlling one's own emotions in relationships with others, and deciphering human situations and networks with acuteness, react with tact, and using skills to persuade, guide, negotiate and resolve disputes, to cooperate and lead teams.

### **3.3. Emotional intelligence traits and behaviors**

When we are involved in a discussion of emotional intelligence, there exist numerous variables that help describe the state of EI. They are also used as basis for analyzing the state of mind, the level of performance joined to the type of motivation. The EI variables are: self-awareness, self-management, social awareness and relationship management, and all together are used to assess the overall job performance. Concerning self-awareness, it is a measure that involves being aware of different aspects existing within us such as behaviors and feelings. It could also relate to people who are and would like to become the focus of attention. It is also the number one element to consider while assessing organizational performance. It is totally central to the individual, to the point that it becomes part of the individual inner focus and that can spread over the situation which, in this case, is the organization and its performance. The second measure is self-management, it relates to the degree to which an employee controls or redirects internal states, impulses and resources. Self-management is the ability to control and reorient destructive urges and moods. All this is achieved by think about the reliability, integrity and relaxed acceptance of change. It's also about not letting one's emotions paralyze his or her environment, and instead exploit one's positive emotions and align emotions with passions. The third measure is social awareness, also known as empathy, is mainly about having understanding and sensitivity to the feelings, thoughts and situations of others. It's about thinking about other people's emotions, especially when making decisions. At work, empathy translates into expertise in recruiting and retaining top talent, the ability to develop other people, and the sensitivity needed to bridge cultural gaps. The fourth one is about relationship management. It refers to managing other people's emotions. It enables the deciphering of human situations and networks with acuteness.

It is about reacting with tact and using them to persuade, guide, negotiate and resolve disputes, to cooperate and lead teams. It is one of the most crucial elements of emotional intelligence that affects job performance. Job performance is the employee's overall contribution and achievement in the job task. It relates to the efficiency and effectiveness of his job output. Although it is an element of EI, it acts as the results of the above four elements of EI. Job performance is directly affected by the elements of EI. There are five behaviors to adopt to help develop EI:

- Approach life by adopting new points of view to enrich understanding;
- Adopt a language with selected and precise words. Speak with righteous words by being able to understand the other and to put oneself in place;
- Become aware of the importance of good communication, based on the quality of presence of being, understanding and empathy and be able to clarify misunderstandings to remove conflicts;
- Have a sufficient self-esteem while maintaining one's integrity in any circumstance;
- Adapt instantly to new situations and responding with the heart and intuitions.

Managers, in a context where the productivity and well-being of employees are essential conditions for the performance of a company, must be able to adjust and modify their behavior to find the right balance between productivity and its constraints using the concept of perceived organizational support considering the well-being of employees as a mandatory concept forming the foundation of organizational behavior. This is where emotional intelligence, as a characteristic of charisma, becomes important as it acts as a human motivation factor. This can lead to excellence in leadership and thus contribute to the rapid improvement of employee performance. If leadership and charisma are recognized as the main levers of engagement, knowing how to operate the right emotional behavior at specific times may be more effective in many situations. A leader must be able to control his emotions by placing himself in specific "emotional modes", such as trust, adaptability, creativity or intuitiveness. These emotional modes are themselves conditioned by other emotions such as self-esteem, pessimism, empathy, and desire. The goal is to know how to use each of these emotions to promote the entry into an emotional mode at a given moment. The right emotional frequency, deployed at a precise moment, will thus result in an always adequate behavior. If, for example, many doubts assail the spirit of a team, reassuring words will not be enough, the shift in a trustworthy way to ensure motivation for the entire team would be another option to consider. In other words, the control of emotions can greatly influence those of others. In the world of work and especially for managers, this ability can generate greater commitment and greater employee motivation: ultimately, the overall performance of the company is improved.

#### **4. EI AND ORGANIZATION'S PERFORMANCE**

The general concept was first defined by Thronthike in 1920. The term EI was coined in 1966 by Leuner. Contemporary attention in EI started with Salovey and Mayer's (1990). Then, Goleman (1995) spread the term as a possible aspect in accepting and forecasting the performance of subordinates in their place of work. Goleman (1995) defined EI as the skill to comprehend ones' own feelings and those of others to motivate oneself and manage individual emotions and effective dealings with others. Varieties of concepts similar to EI have been proposed over the years (Ashkanasy & Daus, 2005). Currently EI is considered as an investment. It is referred to as Emotional Capital. It is considered as an advantage. Emotional Capital means the intangible organizational asset created by employee's growing emotional know-hows that provide them the ability to effectively communicate and develop social relationships. Emotional capital is increasingly being seen as a significant factor in company performance since it generates strong relationships that allow people to achieve effective shared

outcomes. The lack or nonexistence of emotional resources can lead to staff conflict, poor teamwork and poor employee relations. The considerable interest in emotions has not produced a critical reflection because the subject is important for human capital. In the contemporary business world, the phenomenon of globalization, intercultural relations, and competition, there is an incentive to make great efforts in the field of emotional intelligence. It is a concept that is articulated in the management of all the relations of the company. Management is less and less considered a management and exclusively rational exercise, some companies believe that emotions contribute to performance. Beginning with the know-how, the human and organizational capital, without the presence of effective emotional management, communication as well as negotiations, internal and external, will face the total failure of the company.

## 5. METHODOLOGY AND SURVEY RESULTS

A sample of 85 employees was drawn from an insurance company in Rabat. The survey was addressed to all employees regardless of their ranking, actual positions, work longevity, or salaries. The questionnaire was a self - assessment type. The EI questionnaire was divided into four clusters namely self – awareness, self – management, social awareness and relationship management. Overall job performance measures were provided by the participating organization. The survey tackles elements related to different ways of situations that are arousing from the four measures of EI and do or could have effects on job performance. It also focuses on specific behaviors that lead employees to act upon them while performing their jobs.

### 5.1. Respondents' profile

Attribute	Description	Frequency	%	Description	Frequency	%
<b>Gender</b>	Male	45	53%	Female	40	47%
<b>Age</b>	< 25	22	26%	35 - 45	20	23%
	25 - 35	35	41%	45 more	8	10%
<b>Marital Status</b>	Married	39	46%	Single	46	54%
<b>Income</b>	< 10K	35	41%	15K – 20K	19	22%
	10K – 15K	28	33%	20K more	3	4%
<b>Education</b>	Technicians	43	50%	Master	15	18%
	Bachelor	22	26%	Sp. Masters	5	6%
<b>Experience</b>	< 5 yrs	23	27%	10 - 20	8	9%
	5 - 10	36	43%	20 more	18	21%
<b>Department</b>	HR	9	10%	Sales	37	43%
	Finance	22	27%	Operations	17	20%

*Table 1: Respondents' profile*

### 5.2. Description of the survey results

The survey has revealed some crucial information about the relationship between emotional intelligence and job performance as IE can be a predictor of work performance. The analysis has measured correlation between variables of IE and job performance. It explains at most 5% of the performance at work which is low incremental validity of IE with respect to cognitive skills so IE does not predict work performance alone. At most, there exists a moderating effect of EI in certain organizational conditions whereas, there is no relationship between job performance and the nature of work, as we usually assume that the sales department is where there is high customer interaction and individuals face stress more heavily than in other departments and are put in situations in which it becomes more difficult to manage their own emotions.

The survey also reveals that there is low correlation of 0.15 between IE trait-based measures and contextual performance. Personality explains 34.2% of satisfaction with life and thus tends to reduce overall stress and emotions related to job where are well managed as employees look at the whole picture rather than details. Once personality control, IE measured accounts for 1.3% of satisfaction with life. In this case, effective personality control predicts 6% of job satisfaction and 3% of work performance. As per the first dimension which is self-awareness, the results have shown that an effective relationship exists between EI and self-awareness, emotionally strong employees face fear which appears when one needs, for example, to perform a speech in public or face management and that may result in the impossibility of pronouncing any word audibly. The other situation is danger that manifests itself when one feels threatened or obliged to do something and gives rise to a strong accumulation of energy that can explode in aggressiveness or brutality such as the illustration by one collaborator who will literally sweep all that is on his office with a back of the arm following a pressurization of his superior. Employees were able to explain such behaviors. Sadness is also a situation that arises after a disappointment, a painful event, when one integrates the said difficulty and that one seeks to set new benchmarks. It causes a general slowdown, a weariness sometimes going as far as extreme fatigue or period of discouragement following many lost clients, for example. Another situation is disgust that intervenes when one is faced with something in total contradiction with one's own values which is often encountered during a dismissal. Another feeling within this category is the feeling of surprise which results in an increased sensitivity of all the senses as well as a neuronal acceleration in order to prepare and welcome this change, it is the case during an innovative project in which employees were self-motivated and with their own output. Joy translates into an increase in energy and well-being. It is a real source of positivity which is at the origin of a tremendous upward spiral, a perfect illustration by a promotion or an increase. Overall, the correlation measures strongly between both variables.

## 6. CONCLUSION

Emotions are today recipes in the world of management. If we can interpret it as a return of affects in a world that has always kept them away, it remains that, as we have just seen, its translation into the "managerial" spheres in the form of Emotional intelligence is debatable in many ways. For the specialists of the springs of the affective life at work, which have a true culture on this subject, the vision that the lawyers expose of the emotional intelligence can appear limited, simplistic or naive. But the very great popularity of this concept in the circles of management overseas and, through influence, in those of other parts of the world, proves once again how much management is sensitive to practical answers. The only thing we can hope for is that this opening to the affective dimensions of human behavior will lead managers to other paths through which they will discover that psychic dynamics are at the heart of humanity and especially work activity. What most of them already know, but that, in many cases, their universe constantly tends to repress.

## LITERATURE:

1. BARUS-MICHEL J., ENRIQUEZ E., LEVY A., 2002, *Dictionnaire de psychosociologie*, Paris, Eres.
2. BION W., 1956, *Experience in Group*, Londres, Tavistock.
3. BRIEF A. P., WEISS H. M., 2002, « Organizational Behavior: Affect at Work », *Annual Review of Psychology*, 53 (1), pp. 279-307.
4. BRINER R., 1999, « Emotion at work », *A Special Issue of the European Journal of Work and Organizational Psychology*, september.
5. CHERNISS C., ADLER M., 2000, *Promoting Emotional Intelligence in Organizations*, Alexandria, Virginia, ASTD.

6. CHERNISS C., GOLEMAN D., 2002, *The Emotionally Intelligent Workplace : How to Select For, Measure, and Improve Emotional Intelligence in Individuals, Groups and Organizations*, San Francisco, Jossey-Bass.
7. DAMASIO A., 2002, *Corps, émotions et soi*, Paris, Odile Jacob.
8. DEJOURS C., 1993, *Travail et usure mentale*, Paris, Bayard.
9. FEIST G. J., BARRON F., 1996, « Emotional Intelligence and Academic Intelligence in Career and Life Success », paper presented at the Annual Convention of the American Psychological Society, San Francisco.
10. FINEMAN S., 1996, « Emotion and Organizing », in Clegg S., Hardy C., Nord W., *Handbook of Organization Studies*, Londres, Sage.
11. FINEMAN S., 2002, *Emotion in Organizations*, Londres, Sage, 1993, New Edition.
12. GOLEMAN D., 1995, *Emotional Intelligence*, New York, Bantam Books (Traduction française, 1997).
13. GOLEMAN D., 1998, *Working with Emotional Intelligence*, New York, Bantam Books.
14. LE BRETON D., 1996, *Anthropologie des émotions*, Paris, PUF.
15. LEVINSON H., 1987, « Psychanalytic Theory in Organizational Behavior », dans Lorsch J., *Handbook of Organizational Behavior*, Englewood Cliffs, Prentice-Hall.
16. PARK O. H., SIMS H., MOTOWILDO S. J., 1986, « Affect in Organizations: How Feelings and Emotions Influence Managerial Judgement » in Sims H. P., Goia D. A. and Associates, *The Thinking Organization*, San Francisco, Jossey-Bass.
17. PRAX J. - Y. (2003). LE MANUEL DU KNOWLEDGE MANAGEMENT, DUNOD
18. SALOVEY P., MAYER J., 1990, *Emotional Intelligence, Imagination, Cognition and Personality*, 9 (3), pp. 185-211.
19. THEVENET M., 1999, « Le travail : Que d'émotions ? », *Revue française de gestion*, 26, novembre-décembre.
20. THORNTON G. C. I., BYHAM W. C., 1982, *Assessment Centers and Managerial Performance*, New York, Academic Press.

# CULTURAL DETERMINANTS OF E-COMMERCE WEBSITE QUALITY ASSESSMENT

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## **ABSTRACT**

*The aim of this paper is to examine how B2C websites features differentiate on cultural grounds and to explore how companies can reach their local consumers through fulfillment requirements connected with perception of e-commerce website quality. E-consumers from different culture have different needs, expectations and requirements connected with perception of B2C website quality. Based on the literature review an alternative model of e-commerce website quality assessment has been proposed. It takes into consideration culture dimensions defined by Hofstede and Hall. The paper discusses the influence of different culture dimension on website quality perception and describes the adaptation of the specific cultural characteristics in B2C websites. In general, the contributions of this work can be summarized into the following two areas: the identification of e-commerce website quality factors, and application quality model in B2C context with consideration of cultural determinants that influence e-consumers requirements and quality perception. The results of this study may also help e-commerce companies, because they could use the insights analyzed in this research to modify their approaches, depending on the culture they are targeting.*

**Keywords:** *B2C, B2C website localization, culture, culture dependent consumer behaviors, culture dimensions, e-commerce, e-commerce website quality*

## **1. INTRODUCTION**

E-consumers from different culture have different needs, expectations and requirements connected with perception of B2C website quality, because the website features are culture dependent. The review of prior studies suggests that cultural elements are an important part of e-commerce website design and content, and specific consumers' expectations and requirements are reflected in B2C website. Therefore, culture has been recognized as an important influential factor for online consumer behavior and expectations (Moura et. al, 2016). With the growing cultural diversity of online consumers, the importance of understanding different preferences for online shopping and expectations connected with B2C website quality becomes even more important, because culture can affect the behaviour of online buyers. The research studies done on this topic show that cultural factors are influencing for online shopping experiences and assessment of e-commerce website quality. It is obvious that e-commerce website design and content need to consider the culture dependent consumers' expectations. This will allow the e-commerce website to reach out to the targeted consumer group and maximize online purchase satisfaction, because the suitable website appearances encourage buyer's online purchasing intentions and influence customers' requirements performance. E-commerce website characteristics have different influences on forming consumers' trust and online satisfaction. In particular, the development of effective B2C e-commerce websites must appeal to consumers from diverse cultures (Baack and Singh, 2007; Gevorgyan and Manucharova, 2009; Belkhamza and Wafa, 2014). Conducted research revealed that customers have a significantly more positive attitude towards sites that are highly culturally adapted to their culture and the customization of cultural markers leads to customers' greater attitude towards e-commerce website (Snelders et al. 2011). The investigation of cultural values was also conducted to evaluate the extent to which global companies adapt local websites to meet the values of target markets.



Studies have shown that culture is the important factor influencing both user perception and online experience, therefore the cultural profiles of target e-customers strong influence the development of online strategies of e-commerce ventures. Companies adapt their websites in order to reflect values of their target consumer group in country versions of their B2C website (Singh et al. 2006). Evaluation of culture influence on customers' online satisfaction is important for the success of business-to-consumer websites. With the increasing diversity of online consumers, the significance of understanding different preferences for online shopping and determinants of e-commerce website quality assessment across cultures becomes even more important. The aim of this paper is to examine how B2C websites features differentiate on cultural grounds and to explore how companies can reach their local consumers through fulfillment requirements connected with perception of e-commerce website quality. This study focuses on the correlation between e-commerce, culture, and website design, and the article begins with a literature review mostly related to these areas. At first the article introduces the literature review. Culture dimensions defined by Hofstede (2001) and Hall (1976) are analyzed in the context of the adaptation of the specific cultural characteristics in B2C websites. The paper discusses the influence of different cultural factors on website quality perception and describes the implementation possibilities of the particular culture dimensions in B2C websites. Based on the literature review an alternative model of e-commerce website quality assessment has been proposed. This model takes into consideration not only factors connected with functionality and reliability of website, but also culture dimensions that influence e-consumer behaviour and their expectations, requirements and quality perception. The paper concludes with discussion and implications from the results as well as the limitations and directions for future research.

## **2. E-CONSUMER EXPECTATIONS IN THE CONTEXT OF CULTURE DIMENSIONS**

The best known culture dimensions are proposed by Geert Hofstede (2001). He developed a model that helps to explain basic value differences between cultures and countries. This model distinguishes cultures according to five dimensions: Power Distance, Individualism-Collectivism, Masculinity-Femininity, Uncertainty Avoidance, and Long-Term Orientation. The proposed dimensions can be used to explain differences in people's needs, motives, behaviors and expectations. Hofstede's model is particularly useful for understanding consumer behaviour and has been widely accepted. Other approach presents Edward Hall (1976). Culture is seen here as a one-dimensional construct in which countries are grouped into high or low context category. Hall (1976) distinguished patterns of culture according to context, space, time and information flow. He considered cultures as high and low-context dimensions based on communication or messages. In high-context culture society's communication is fast with simple messages. In low-context culture society's communication is indirect comprised of detailed and comprehensive messages (Hall, 1976). Distinguished culture dimensions have their reflection in consumer purchase behavior and expectations regarding e-commerce website design and content. Culture is one of the most important factors determining B2C website quality requirements. For example, Tsikriktsis (2002) conducted a survey and concluded that culture does play a role in website quality expectations. Specifically, the dimensions of masculinity and long-term orientation were shown to impact most significantly on website quality expectation. He found that the scores of a country in masculinity and long-term orientation are associated with higher expectations of website quality. Cultures that are more short-term oriented may be more likely to value promotions and discounts on an e-commerce website. People may decrease online shopping in uncertainty avoidance culture, while consumers in high power distance cultures are less open to new ideas and products, however consumer acceptance of e-commerce in is higher in high power distance culture (Yoon, 2009).

Other study collected a total of 93 websites from different companies with different countries and found a significant relation between cultural content and Hofstede's cultural dimensions (Singh et al., 2009). Earlier study identified significant differences on all cultural dimensions between American and Chinese company websites. Chinese sites depicted significantly higher collectivism and uncertainty avoidance features, while American websites portrayed low context and masculinity elements (Singh et al., 2003). An investigation of the Russian and Turkish websites of multinational companies indicated that the companies adapted the cultural values on their local e-commerce websites (Yalcin et al., 2011). Similar results were found when comparing company websites from the USA and from the Arab countries (Chun et al., 2015). Analogous results were found in a analysis of 234 sites over fifty three countries. This research used a different framework and compared a much larger spectrum of countries. Significant differences in website design and content were found in all considered cultural dimensions: individualism, masculinity, uncertainty avoidance and power distance (Singer et al., 2007). Singh and Baak (2004) compared Mexican and United States e-commerce sites to examine whether they depicted cultural values differently. They found that Mexican websites in comparison to American websites showed more content related to collectivism, masculinity, and power distance. Robbins and Stylianou (2002) analyzed the frequency of occurrence of specific elements in commercial websites and found many elements that can be related to Hofstede's dimensions. They confirmed a relation between power distance and the frequency of organizational charts on websites. Consumers who are high on masculinity culture value emphasis more on web information designs. Consumers who are high on uncertainty avoidance culture value emphasis more on web navigation design to create trust. This means that e-commerce website should present information logically to customers from high masculine culture. While, in case of customers from high uncertainty avoidance cultures, the attention should be paid on navigation features of e-commerce website (Ganguly et al., 2010). Callahan (2006) also suggests that uncertainty avoidance is correlated with the use of animation and graphical art, and a greater ease of use of the site. High uncertainty avoidance and high context cultures tend to have greater use of animation and easier navigability on the sites (Khanum et al., 2012). Collectivist consumers are more likely to share their information within the group and be less expressive and explicit when providing an opinion about another. This is very different to the individualist consumer, who would easily give negative ratings and comments for poor performance. A collectivist consumer would be more lenient towards a bad experience and would rather discuss this experience within the group than make a public statement. Concerning social networking with online buyers in e-commerce environment company can create trust and positive influence in certain cultures (Bregman and Karimov, 2012). The long-term study on this topic was conducted by Robbins and Stylianou (2010). The authors compared the exposure of cultural values in ninety company websites from twenty-two countries in 1998 with similar companies in 2008. This study is able to indicate the direction of possible cultural changes. The results point to a slight movement towards the homogenization of some values across cultures. Results on individualism-collectivism, uncertainty avoidance and long-short term orientation showed a reduction of their significance levels, possibly indicating a movement towards homogenization. However, the differences amongst countries regarding power distance and uncertainty avoidance became even more significant after ten years, suggesting an enhancement of cultural differences in these dimensions (Robbins and Stylianou, 2010). According to Würtz (2006) e-commerce takes place in the context of web-based communication. This communication channel consists of images, multimedia and interactive features, hence greatly enhancing the internet's appeal to people from high-context cultures. Additionally the Internet is increasingly becoming an interpersonal communications and socialization channel. This tendency has its reflection in social media development and increasing number of chat rooms, blogs and social network sites.

Therefore contemporary e-commerce websites with such features have greater acceptance level in high-context cultures and the differences in communication styles between high-context and low-context cultures do occur on B2C websites (Würtz, 2006). Concerning Hall's (1976) cultural dimension it is suggested that high context websites show soft sell approach using politeness and are aesthetic with emphasize animation, colour and images. While low context websites suggests hard sell approach such as emphasize on discount and promotions (Sinkovics et al., 2007). According to Sohaib and Kang (2014) collectivistic B2C websites contain such tools as: chat, online help, and group discussion through social networking services. In contrast individualistic customers prefer website personalization, newsletters and company blogs. Customers from high uncertainty avoidance cultures need more customer service including "FAQs", online help and information about local stores. They put also attention to transaction security. Customers from high power distance cultures expect: information about company hierarchy, information about ranks of employees, pictures of employees, high frequency of organizational charts on website, presence of company vision and mission statement. Customers from low power distance cultures expect promotions and discounts on e-commerce website. Additionally, customers from high context cultures put more emphasis on the website aesthetic than customers from low context cultures (Sohaib and Kang, 2014). According to Würtz websites of high-context cultures implement more animations that assimilate human presence on the website and are more likely to use images that reflect values characteristic of such cultures to convey information, especially related to navigation elements. For the presentation of product-related information, websites of high-context culture tend to picture the product together with an individual, thus giving the consumer a central place of attention but never the product only. It would be necessary and beneficial to incorporate such features when targeting consumers of high-context cultures. On the other hand, when targeting people from low-context cultures, for example, products should be depicted separately since their attention tends to be very focused and page layout and colour schemes should be consistent to allow for an easy and quick decoding of the information (Würtz, 2006). The e-commerce website is an important source of information. Customers from high-context cultures seek information from personal social networks. As such, it is argued that the social aspect of the Internet may be of greater value to customers of high-context cultures, as compared to B2C website users from low-context cultures. Therefore, it is necessary to look for innovative ways to draw consumers online socially. Strategies such as building and maintaining chat rooms, sending out regular e-newsletters or special deal e-mails, developing company blogs or advertising on social network websites should help enhance e- customers' satisfaction. In contrast, when seeking to appeal to online users of low-context cultures, emphasis may be placed on the content offered to increase the perceived utility in the eyes of these consumers (Gong, 2009). Customers from different cultures have different requirements connected with their expectations regarding e-commerce website design and functionality. Consumers' behavior, needs and online shopping preferences are created in cultural context. Their expectations are related with specific culture dimensions and should be considered in e-commerce website design, especially in the context of fulfillment quality requirements. Companies should reduce the negative impact of cross cultural differences through elaboration of common frameworks for consumers from different cultures or adaptation e-commerce website features to specific requirements.

### **3. CULTURAL DETERMINANTS OF B2C WEBSITE QUALITY ASSESSMENT**

E-commerce websites are becoming increasingly complex. The number of features offered to consumers is constantly increasing in order to improve customer satisfaction and enhance quality assessment connected with the information gathering process and the online shopping experience. Customer satisfaction is the level of the customers' expectations met by the product or services when customers experience these.

Customer satisfaction from an online shopping website involves the reactions or feelings of customers during their experience on the particular e-commerce website (Molla and Licker, 2011). Website quality is difficult to define and capture in an operational way, because this notion represents multidimensional construct ( Hasan, 2016). Fulfillment or surpassing customer expectations is the essential element of quality providing. The dominant factors which influence consumer perceptions of online purchasing are the website characteristics, because they create and realize customer expectations. Therefore a high quality e-commerce site can attract more customers with positive first impression and enhance their online shopping satisfaction, especially experiences connected with culture dependent expectations. Adaptation to the local market environment and specific customers' needs is necessary, because consumer behavior and fulfillment of customers' expectations is influenced by the cultural background. Crucial features in a successful website design are: aesthetic appearance, easy navigation, well-organized content display, usability, information quality, ease of use, availability, customization, responsiveness, fulfillment, appropriate content, accessibility, design and presentation, personalization, ease of use, usefulness of content, adequacy of information, privacy and security, interaction, reliability and efficiency (Xiao, 2016). Online shopping websites with their innovative features are significantly important, because of rapid e-commerce development. Therefore, e-commerce companies must develop high quality websites that provide a better online experience to attract and retain their customers in the virtual marketplace. Based on the literature review an alternative model of e-commerce website quality assessment has been proposed. The factors for e-customer satisfaction have been selected from prior literature studies. Culture dimensions, defined by Hofstede (2010) and Hall (1976), have been taken into consideration. Culture dependent e-commerce website features, that influence e-consumer behaviour, expectations, requirements and quality perception, have been presented in table 1.

*Table following on the next page*

*Table 1: E-commerce website quality assessment in culture dependent context  
(own elaboration)*

<b>Culture dimension</b>	<b>Expected e-commerce website quality determinants</b>
Collectivism	<ul style="list-style-type: none"> <li>- possibilities of information sharing with other consumers,</li> <li>- social networking features such as: forum, chat,</li> <li>- presence of social networking services, e.g. Facebook, twitter, etc.,</li> <li>- online chat with staff,</li> <li>- online newsletter subscription,</li> <li>- company blog,</li> <li>- group discussion through social networking services,</li> <li>- online help.</li> </ul>
Individualism	<ul style="list-style-type: none"> <li>- product unique and differentiation features,</li> <li>- presence of privacy policy,</li> <li>- privacy concern related to unauthorized sharing of personal information,</li> <li>- transaction security,</li> <li>- individual greetings,</li> <li>- website personalization,</li> <li>- possibilities of product personalization,</li> <li>- newsletter and company blog,</li> <li>- ease of use and easy navigation.</li> </ul>
Uncertainty avoidance	<ul style="list-style-type: none"> <li>- more customer service,</li> <li>- online help,</li> <li>- contact data,</li> <li>- contact information about local store and dealers,</li> <li>- presence of FAQs,</li> <li>- navigation features - well displayed navigation links,</li> <li>- presence of site maps,</li> <li>- website reputation,</li> <li>- presence of other consumers opinions,</li> <li>- social networking features (forum, discussion group, chat, presence of social networking services),</li> <li>- transactions security,</li> <li>- personal data security,</li> <li>- privacy policy on website,</li> <li>- use of animation and graphical elements,</li> <li>- website functionality and aesthetic,</li> <li>- greater ease of use and easier navigability on the website,</li> <li>- reliability,</li> <li>- availability,</li> <li>- more information about product,</li> <li>- more information about guarantee and product delivery conditions.</li> </ul>
High power distance	<ul style="list-style-type: none"> <li>- information about company hierarchy,</li> <li>- information about ranks of employees,</li> <li>- pictures of employees,</li> <li>- high frequency of organizational charts on website,</li> <li>- presence of company vision and mission statement.</li> </ul>
Low power distance	<ul style="list-style-type: none"> <li>- website design and aesthetic,</li> <li>- user-friendly navigation features of website,</li> <li>- promotions and discounts on e-commerce website.</li> </ul>
Masculinity	<ul style="list-style-type: none"> <li>- high expectation of website quality,</li> <li>- website reliability and accessibility,</li> <li>- short response time,</li> <li>- website functionality,</li> <li>- easy navigation design,</li> <li>- logically presentation of information on website.</li> </ul>
Femininity	<ul style="list-style-type: none"> <li>- website aesthetic,</li> <li>- user-friendly website features,</li> <li>- ease of use,</li> <li>- easy navigation.</li> </ul>
Long term orientation	<ul style="list-style-type: none"> <li>- high expectation of website quality,</li> <li>- website reliability and accessibility,</li> <li>- functional navigation design.</li> </ul>
Short term orientation	<ul style="list-style-type: none"> <li>- value, promotions and discounts on e-commerce website,</li> <li>- short response time.</li> </ul>
Low context	<ul style="list-style-type: none"> <li>- focus on discounts, promotions, and product comparison,</li> <li>- lower use of animation, images and colours,</li> <li>- use of superlative words and sentences,</li> <li>- consistent and precise information about product,</li> <li>- consistent page layout,</li> <li>- easy and quick access to information,</li> <li>- easy navigation.</li> </ul>
High Context	<ul style="list-style-type: none"> <li>- context information about purchased products,</li> <li>- more pictures of product,</li> <li>- presentation of more product-related information,</li> <li>- website aesthetic,</li> <li>- use of different colours and images,</li> <li>- greater use of images, multimedia, animated graphics and sounds,</li> <li>- interactive features,</li> <li>- social networking features (forum, discussion group, chat, presence of social networking services),</li> <li>- company blog,</li> <li>- user-friendly website features,</li> <li>- easy navigation design.</li> </ul>

E-consumers from different culture have different needs, expectations and requirements connected with perception of B2C website quality. The use of appropriate cultural elements increases the usability of e-commerce websites and positive influence quality assessment, because members of different cultural groups prefer different features and elements of e-commerce website. Cultural values of different countries and consumers group are naturally reflected on e-commerce websites. The most of B2C websites contain specific elements that reflect determinants of website quality assessment in the particular culture. Customer preferences are created in cultural context, therefore influence of different culture dimensions should be taken into consideration during implementation e-commerce strategy and B2C website design. There are correlations between distinguished culture dimensions, defined by Hofstede and Hall, e-commerce website design, and determinants of e-commerce website quality assessment, because the local cultures influence consumer online behavior and expected B2C website quality characteristics. Understanding of culture influence on e-commerce website perception and its quality assessment can help enhance adoption suitable B2C website, which is culturally adapted and meets the needs of customers. E-commerce companies should adapt their e-commerce websites to requirements of local consumers and better fulfill expectation customers from different cultures. Effective localization involves individual approaches to different users group, their needs and requirements. Companies should change the features of their websites and adopt cultural values depicted in their e-commerce website to sell products online successfully. The content, imagery, presented values and functionality of website should correspondent with requirements of different consumers group. Evaluation of culture influence on e-commerce website perception is important to the success of B2C website design and its appropriate adaptation to specific consumers' requirements connected with particular culture dimensions.

#### **4. CONSLUSION**

Knowledge about culture influence on consumer online purchasing behavior and expectations regarding e-commerce website quality can facilitate better fulfillment customers' requirements and implementation optimal development strategy of e-commerce venture in cultural differentiated online environment. This paper presents a literature review on website design with regard to consumers' culture dependent expectations in order to propose the e-commerce website quality assessment model. This quality assessment model takes into consideration factors connected with culture dimensions defined by Hall and Hofstede. The proposed quality determinants related to the particular culture dimensions can improve the quality of e-commerce website design, enhance customers' satisfaction form online purchase and better fulfill customers' quality requirements related to different culture dimensions. The contributions of this work can be summarized into the following two areas: the identification of e-commerce website quality factors, and application quality model in B2C context with consideration of cultural determinants that influence e-consumers requirements and quality perception. The results of this study may be helpful for e-commerce companies, because they could use the insights analyzed in this research to modify their strategy, depending on the culture they are targeting, improve their B2C websites design, enhance their customers satisfaction and better fulfill customers' requirements regarding e-commerce website quality. Advancement in e-commerce development has created a critical challenge for companies, specifically for retailing and relations with customers in online environment. The findings of this study suggest that companies should consider culture dimensions of each country, when they decide to formulate strategies about online retailing and e-commerce website design. E-commerce companies should use these insights to develop culturally adapted B2C websites, improve e-customers satisfaction from online purchase and website quality perception, or analyze their existing strategy to measure the degree of adaptation e-commerce websites targeted toward a particular

culture. The paper presents also a few limitations and various future research directions. In fact, future research of website cultural adaptation can be extended to new forms and interfaces of digital communications such as mobile interfaces or video games. Additionally, the results of this study may not be generalized due to consideration of the limited number of factors connected with B2C websites quality assessment. In addition to this, only culture dimensions defined by Hofstede and Hall have been taken into consideration. Thus, perhaps it may be useful for future researchers to assess the application of other culture dimensions to study website localization and determinants of quality assessment.

#### LITERATURE:

1. Baack, D., Singh, N. (2007). Culture and Web Communications. *Journal of Business Research*, 60(3), 181-188.
2. Belkhamza, Z., Wafa, S. (2014). The role of uncertainty avoidance on e-commerce acceptance across cultures. *International Business Research*, 7(5), 166-173.
3. Brengman, M., Karimow F. (2012). The effect of web communities on consumers' initial trust in B2C e-commerce websites. *Management Research Review*, 35, 791-817.
4. Callahan, E. (2006). Cultural Similarities and Differences in the Design of University Web Sites. *Journal of Computer Mediated Communication*, 11(1), 239-273.
5. Chun, W., Singh, N., Sobh, R., Benmamoun, M. (2015). A Comparative Analysis of Arab and US Cultural Values on the Web. *Journal of Global Marketing*, 28 (2), 99-112.
6. Ganguly, B., Dash, S., Cyr, D. (2010). The Effects of Website Design on Purchase Intention in Online Shopping: The Mediating Role of Trust and the Moderating Role of Culture. *International Journal of Electronic Business*, 8, 302-329.
7. Gevorgyan, G., Manucharova, N. (2009). Does Culturally Adapted Online Communication Work? A Study of American and Chinese Internet Users' Attitudes and Preferences Toward Culturally Customized Web Design Elements. *Journal of Computer-Mediated Communication*, 14(2), 393-413.
8. Gong, W. (2009). National culture and global diffusion of business-to-consumer e-commerce. *Cross Cultural Management: An International Journal*, 16(1), 83-101.
9. Hall, E. (1976). *Beyond Culture*. New York: Anchor Press.
10. Hasan, B. (2016). Perceived irritation in online shopping: the impact of website design characteristics. *Computers in Human Behavior*, 54, 224-230.
11. Hofstede, G. (2001). *Cultures and Organizations. Software of the Mind*. London: McGraw-Hill.
12. Khanum, M., Fatima, S., Chaurasia, M. (2012). Arabic Interface Analysis Based on Cultural Markers. *International Journal of Computer Science Issues*, 9(1), 255-262.
13. Molla, A., Licker, P. (2011). E-commerce systems success: an attempt to extend and specify the Delone and Maclean model of its success. *Journal of Electronic Commerce Research*, 2(4), 131-141.
14. Moura, F., Singh, N., Chun, W. (2016). The influence of culture in website design and users' perceptions: three systematic reviews. *Journal of Electronic Commerce Research*, 17 (4), 312-339.
15. Robbins, S., Stylianou, A. (2002). A study of cultural differences in global corporate websites. *Journal of Computer Information Systems*, 42, 3-9.
16. Robbins, S., Stylianou, A. (2010). A Longitudinal Study of Cultural Differences in Global Corporate Web Sites. *Journal of International Business and Cultural Studies*, 3, 1-17.
17. Singer, D., Baradwaj, B., Avery, A. (2007). Web Localization in International Online Banking. *Journal of Internet Business*, 4, 1-23.
18. Singh, N., Baak, D. (2004). Web site adaptation: A cross-cultural comparison of U.S. and Mexican web sites. *Journal of Computer-Mediated Communication*, 9(4), 137-153.

19. Singh, N., Fassott, G., Zhao, H., Boughton, P. (2006). A Cross-Cultural Analysis of German, Chinese and Indian Consumers' Perception of Web Site Adaptation. *Journal of Consumer Behaviour*, 5(1), 56-68.
20. Singh, N., Toy, D., Wright, L. (2009). A Diagnostic Framework for Measuring Web-site Localization. *Thunderbird International Business Review*, 51(3), 281-295.
21. Singh, N., Zhao, H., Hu, X. (2003). Cultural Adaptation on the Web: A Study of American Companies' Domestic and Chinese Websites. *Journal of Global Information Management*, 11(3), 63-80.
22. Sinkovics, R., Yamin, M., Hossinger, M. (2007). Cultural Adaptation in Cross Border E-Commerce: A Study of German Companies. *Journal of Electronic Commerce Research*, 8, 221-235.
23. Snelders, D., Morel, K., Havermans, P. (2011). The Cultural Adaptation of Web Design to Local Industry Styles: A Comparative Study. *Design Studies*, 32(5), 457-481.
24. Sohaib, O., Kang, K. (2014). Cultural aspects of business-to-consumer (B2C) e-commerce: a comparative analysis of Pakistan and Australia. *The Electronic Journal of Information Systems in Developing Countries*, 61(2), 1-18.
25. Tsikriktsis, N. (2002). Does Culture Influence Web Site Quality Expectations? An Empirical Study. *Journal of Service Research*, 5(2), 101-112.
26. Würtz, E. (2006). Intercultural communication on web sites: a cross-cultural analysis of web sites from high-context cultures and low-context cultures. *Journal of Computer-Mediated Communication*, 11, 274-299.
27. Xiao, Q. (2016). Managing E-commerce Platform Quality and its Performance Implication: Multiple-Group Structural Model Comparison. *Journal of Internet Commerce*, 15(2), 142-162.
28. Yalcin, S., Singh, N., Dwivedi, Y., Apil, A., Sayfullin, S. (2011). Culture and Localization on the Web: Evidence From Multinationals in Russia and Turkey. *Journal of Electronic Commerce Research*, 12 (1), 94-114.
29. Yoon, C. (2009). The Effects of National Culture Values on Consumer Acceptance of Ecommerce: Online Shoppers in China. *Information & Management*, 46 (5), 294-301.



# THE SIGNIFICANCE OF DERIVATIVES IN THE MANAGEMENT OF VALUE OF NON-FINANCIAL ENTERPRISES IN POLAND IN THE AGE OF FINANCIALIZATION

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## **ABSTRACT**

*The turn of the 21st century is a period of growing importance of finance in the global economy. The domination of the financial sphere in relation to the real sphere is defined as financialization. Inflation of financial instruments, derivatives in particular, is indicated among the symptoms of financialization. Financialization in relation to companies is associated with the growing importance of financial motives in the decision-making processes of enterprises. The growing pressure of financial markets and investors forces transformations in the value management process. Companies raising capital from share issues are evaluated by investors (shareholders). In turn, management is entrusted to hired managers whose evaluation depends on the current results. In order to meet the requirements of the owners (shareholders), they stop taking into account the long-term development of a given undertaking and focus on achieving the required rate of return in the short term. Therefore, they limit their operational activities, and in particular long-term investment activities, in favour of short-term financial activities. They use derivatives as one of the forms of short-term profit generation. Their use is characterised by a relatively high level of risk resulting from the use of leverage in their construction. It also results in potential profits (or losses) many times higher than the capital employed. The purpose of this paper is to examine whether non-financial enterprises operating in Poland use derivatives in value management. The research was based on the analysis of indicators identifying the role of derivatives in the enterprise and determining their impact on the ROE ratio as a measure of value for shareholders. For this purpose, the financial statements of non-financial enterprises published in Poland by the Central Statistical Office for the years 2010-2017 were used.*

**Keywords:** *company, derivatives, financialization, financial statement analysis*

## **1. INTRODUCTION**

Financialization is connected with the dominance of the financial sphere in relation to the real sphere. Inflation of financial instruments, derivatives in particular, is indicated among the symptoms of financialization [Ratajczak, 2012, p. 291]. Derivatives are financial assets whose prices depend on changes in the prices of underlying instruments (shares, bonds, stock indices, exchange rates, interest rates, etc.). Their original purpose was protection against risk, including FX risk. However, they quickly became a form of quick, profitable yet risky earning and in time became speculative instruments. In the era of financialization, as a result of increased demand and the development of speculation on the derivatives market, a dynamic growth of financial assets took place through the issue of new assets based on other assets. In addition to the quantitative increase in the value of derivatives, their development in terms of quality also took place. More and more financial instruments created by financial engineering have become more complicated and often illegible, especially for their buyers. Their multi-layered structure concerning revenue that depends on the price of another asset blurred the associated risk. This trend could be observed over the last quarter of a century, and it acquired exponential character in the years 2002-2008. The total nominal value of derivatives which were traded on the market in 1998 amounted to USD 72 billion, while in 2008 it was already USD 673 billion. In subsequent years, after the subprime crisis, their value fluctuated, exceeding USD 700 trillion

in 2011 and in 2013, while in 2018 it amounted to USD 544 trillion [BIS, [https://www.bis.org/statistics/about\\_derivatives\\_stats.htm?m=6%7C32%7C639](https://www.bis.org/statistics/about_derivatives_stats.htm?m=6%7C32%7C639)]. Finalization is a challenge for contemporary managers. Financialization, when applied to non-financial entities, means the increase of importance of financial motives in the decision-making processes of enterprises. As a result of the transformations of the system of economic incentives and developmental patterns both in the economy and among business entities, concentration on quick earnings, on creating shareholder value occurred [Stockhammer, 2004, pp. 719-741]. For this purpose, managers use financial instruments to generate short-term profit, limiting operational and investment activity [Krippner, 2005, pp. 173-208, Orhangazi, 2008, pp. 863-886]. Such a possibility is offered to them by derivatives, which allow to obtain profits (or losses) many times higher than the capital employed, thanks to the use of the financial leverage in their structure. The purpose of this paper is to examine whether non-financial enterprises operating in Poland use derivatives in building company value. The research was based on the analysis of indicators identifying the role of derivatives in the enterprise and determining their impact on the ROE ratio as a measure of value for shareholders. For this purpose, the financial statements of non-financial enterprises published in Poland by the Central Statistical Office for the years 2010-2017 were used.

## **2. COMPANY VALUE MANAGEMENT IN THE ERA OF FINANCIALIZATION AND DERIVATIVES**

Value management involves making strategic and operational decisions of an investment, organisational and financial nature that contribute to the growth of the company's value. According to the traditional approach, increase in (market) value of non-production companies is associated with generation of long-term profit (income) from operational and investment activities. That is because core activity for such enterprises is the manufacture of goods (rendering services) and trade in goods. They generate revenues by selling them, which off set with the incurred costs constitute profits. The generated profit is the source of revenues for the owners and can be used to fund the investments. The investments determine the development of enterprise and greater profits in the future. On the other hand, financial activity constitutes additional source of revenues for the purpose of financial investments when the enterprise has a surplus of non-allocated financial funds. The financialization processes connected with the growing significance of the financial sector in the economy have led to transformations in the sphere of management and ownership. The companies obtaining their capital from financial markets as listed companies are assessed from the investors' (shareholders) point of view. [Nawrocki, Szwajca, 2016, pp. 165-171.]. Owners-shareholders from the financial sphere treat their investments as one of periodical and alternative forms of funds allocation [Rydzewska, 2019, p. 282]. Their activities, especially the activities of institutional owners, are associated with the so-called impatient capital, which looks for the possibility to gain exceptional profits in a short period of time [Dore, 2002, pp. 115-121]. The company value management process is connected with the assessment of companies by the financial market. Company management is entrusted to managers whose position and remuneration depend on short-term results [Williams, 2000, pp.1-12]. One of the most frequently used indicators is the ROE indicator [Froud et al., 2000, pp. 80-110, Dembinski, 2011, p. 150 ]. Emphasis on the results well received by the financial markets means that managers move away from the stakeholder perspective and are guided towards the concept of management in the interest of the owners (the so-called shareholder perspective). [Palley 2007, Jonek-Kowalska, I., Zieliński, M., 2017, pp. 1294-130]. Taking into account the above phenomena associated with financialization, the management of company value is directed towards short-term financial result. Using the conditions of financialization, the companies look for sources that can ensure quick profits. Investments in financial instruments, derivatives in particular, are one of the options.

Derivatives perform two basic functions in business trading, i.e. they hedge the risk of changes in the prices of underlying instruments and create the opportunity to achieve speculative profits. The first function is related to the fact that the entity wishing to avoid the risk of losses associated with adverse price fluctuations of the financial instrument (currency, interest rate, shares, etc.) through the purchase of a hedging derivative (contract, options) creates an insurance mechanism against future price changes. The use of hedging transactions involving derivatives allows the entrepreneur to predict the volume of flows (prices, margins) that will be realized in the future. Skilful use of hedging transactions can also affect the sales volume. When calculating sales prices based on quoting forward transactions, there is no need to assume a buffer for possible volatility, and the prices offered may be more competitive in relation to other market participants. The hedging function of derivatives is mainly used in international trade. Thanks to the use of contracts or currency options, importers and exporters can insure themselves against FX fluctuations. The condition is a very thorough knowledge of functioning of the market on which the activity is conducted. Derivatives are also a tool for achieving short-term (speculative) profits. Their attractiveness in generating quick and high profits is related to the possibility of using financial leverage, i.e. the possibility of achieving disproportionately high profits in relation to the amount invested [Sopoćko, 2010, p. 134]. The capital invested in derivatives is usually a margin representing a small percentage of the nominal value of the purchased/sold instruments. However, it should be remembered that derivatives are high risk instruments. The lever works in both directions. It can contribute to high profits, but also losses. Most transactions on derivatives are in fact an obligation towards a financial institution that needs to be fulfilled. To examine the significance of derivatives in managing the value of an enterprise in the era of financialization, their function as a speculative instrument is taken into account.

### 3. RESEARCH METHODOLOGY

The research method adopted to examine whether financialization processes influenced the value management of non-financial enterprises in Poland was the analysis of indicators built on the basis of financial statements published by the Central Statistical Office for the years 2010-2017 [Financial instruments of non-financial enterprises, 2010-2017]. To assess the significance of derivative instruments in enterprises, indexes of derivatives' participation in the structure of assets / sources of financing were used. In accordance with the legal regulations regarding accounting records [IAS 32, IAS 39, Accounting Act, Ordinance of the Minister of Finance on specific recognition principles, valuation methods, scope of disclosure and presentation of financial instruments], derivatives are recognized in financial statements at fair value, which the market price is most often considered to be. It should be noted that depending on the type of instrument and its characteristics, its presentation in records and financial statements may differ. And so, contracts (forward, future) result in the simultaneous creation of financial assets and financial liabilities. As at the balance sheet date, their value is adjusted to their market value. In contrast, options, depending on the side of the transaction, are recorded in two ways. If options are purchased, they are recognized as financial assets, and if they are offered for trading - as financial liabilities. Swap contracts are only valued for reporting purposes. The estimation of fair value of the instrument may have a positive value (resulting in the recognition of a financial asset) or a negative one (resulting in the recognition of a financial liability) [Gmytrasiewicz, Karmańska, 2010, pp. 306-331]. Formula 1 shows the participation of derivatives in the balance sheet total.

$$D/BST = \frac{\text{derivatives(assets or liabilities)}}{\text{balance sheet total}} * 100\% \quad (1)$$

This ratio expresses the share of financial instruments in total assets or liabilities. The increase in the ratio indicates an increase in the significance of financial assets in the company's assets or as sources of financing, and thus a greater involvement of free funds in investments related to derivatives.

Another indicator determining the role of financial instruments in the functioning of non-financial enterprises is the ratio of participation of the result from operations on derivatives in the net financial result. This indicator is presented in Formula 2.

$$\text{RFOOD/NFR} = \frac{\text{result from operations on derivatives}}{\text{net financial result}} * 100\% \quad (2)$$

This indicator shows the share of profit (loss) generated as part of operations on financial instruments in the net profit of the enterprise. The growth of the indicator means an increase in the significance of income from operations related to derivatives in total income.

Due to time constraints of data on the result from operations on derivatives (until 2015), the ratio expressing the relation of the pre-tax financial result (gross) to the operating result (model 3) was adopted as a supplementary indicator.

$$\text{GFR/OR} = \frac{\text{gross financial result (before tax)}}{\text{operating result}} \quad (3)$$

This indicator shows the extent to which financial activities (including derivative transactions) affected the operating activity of the enterprise. The indicator greater than 1 means that the enterprise generates profit from financial activities, which increases the operating result. The indicator lower than 1 shows that the result on financial operations is negative and absorbs profits generated from operating activities.

In order to assess the value of the enterprise (for shareholders), the ROE ratio was used, in accordance with the trends observed in practice among investors-shareholders. Its formula is as presented in Formula 4.

$$\text{ROE} = \frac{\text{net financial result}}{\text{equity}} * 100\% \quad (4)$$

This indicator demonstrates the profitability of equity, i.e. how much net income each zloty (PLN) brings by engaging in equity of a given enterprise. In general, the higher the ratio, the higher the profit value for the owners (shareholders).

#### 4. EMPIRICAL ANALYSIS

Empirical analysis concerning the significance of derivatives in the value management of a company was carried out for the period 2010-2017. The indicators of the share of derivatives in the balance sheet total have been presented in two charts. Chart 1 presents the structure of active derivatives, while Chart 2 – the structure of passive derivatives.

*Chart following on the next page*

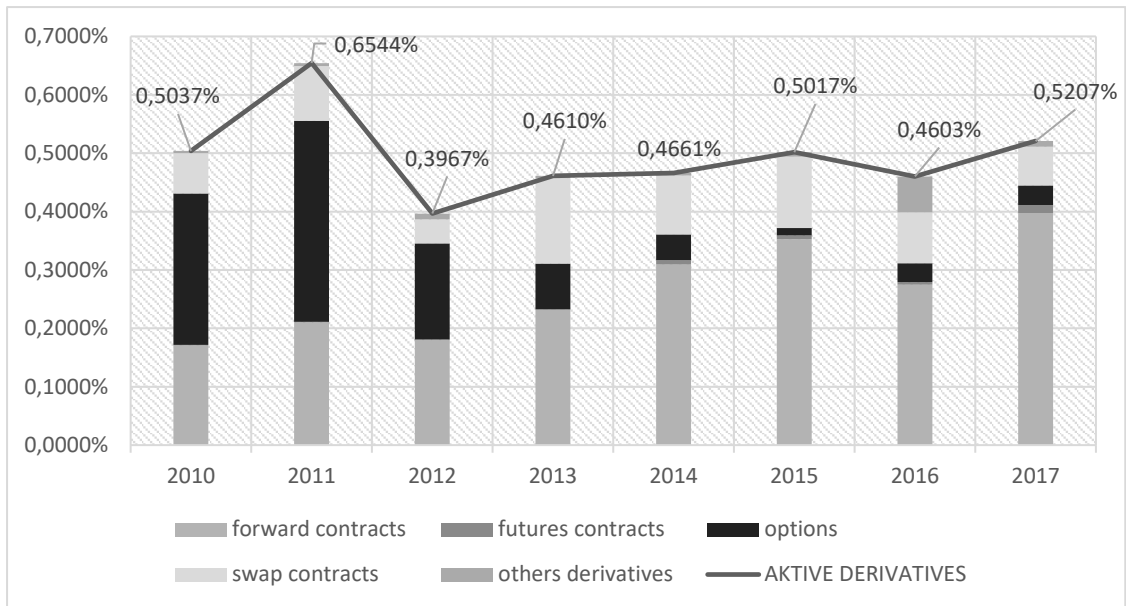


Chart 1: The structure of active derivatives of non-financial enterprises in Poland in the years 2010-2017 (own work based on: Financial instruments of non-financial enterprises, Central Statistical Office, Warsaw, 2010-2017)

Considering the structure of derivatives in the balance sheet total of the Polish non-financial enterprises, it can be concluded that the share of derivatives in total assets / liabilities is low – it does not exceed 1%. As far as active derivatives are concerned, their highest level was observed in 2011 and amounted to 0.65%. In the following years it decreased to approx. 0.5%. The share of passive derivatives exceeded 0.9% in the years 2010-2011. In subsequent years, it decreased, to 0.3% in 2013, and then it stalled at around 0.4%.

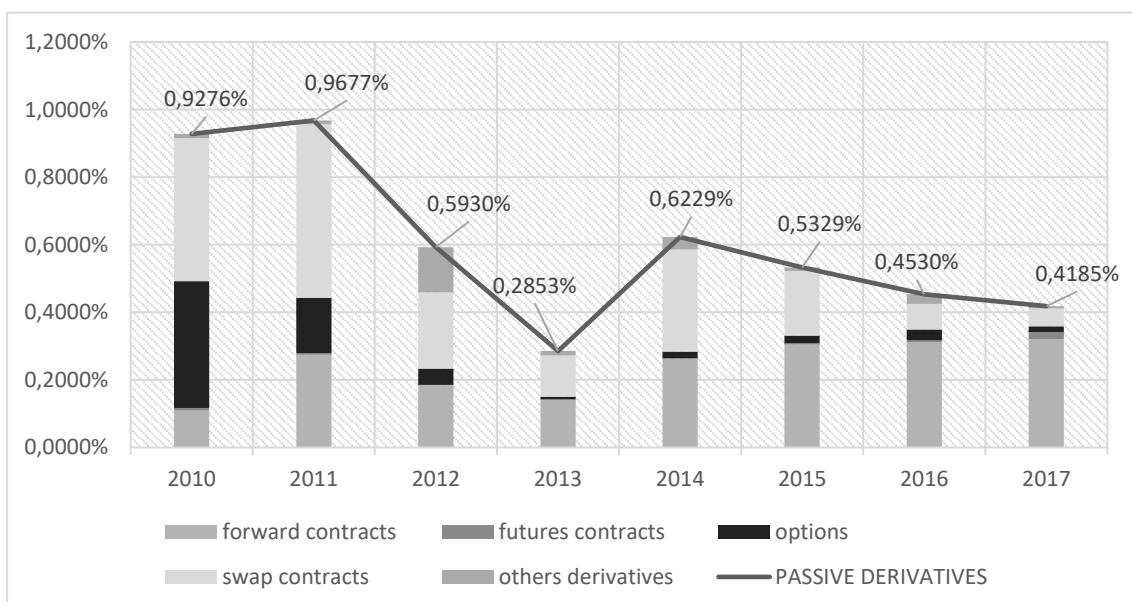


Chart 2: The structure of passive derivatives of non-financial enterprises in Poland in the years 2010-2017 (own work based on: Financial instruments of non-financial enterprises, Central Statistical Office, Warsaw, 2010-2017)

Analysing the types of derivative instruments, it can be observed that in 2011-2012 options were dominant group within the assets (0.26% in 2010, 0.34% in 2011).

Enterprises purchased options as a form of investment. On the passive side, their share in 2010 was 0.37%, and in 2011 it fell to 0.16%. Thus, a smaller group of enterprises issued options. On the other hand, in the initial period of analysis, swap contracts dominated within the liabilities (0.42% in 2010, 0.51% in 2011). This means that in the covered period swaps caused a negative valuation in a larger number of non-financial enterprises. After 2013, forward contracts were the most frequently used derivatives. Both on the side of assets and liabilities, their level approximated 0.3%. A slightly higher value was on the asset side, which was associated with the valuation as at the balance sheet date.

*Table 1: Indicators of the share of the result from operations on derivatives in the net financial result, the ratio gross result / operating result, ROE of non-financial enterprises in Poland in 2010-2017 (own work based on: Financial instruments of non-financial enterprises, Central Statistical Office, Warsaw, 2010-2017)*

	2010	2011	2012	2013	2014	2015	2016	2017
Result from operations on derivatives / net financial result *100%	-1.07%	1.18%	-0.26%	1.39%	1.07%	-0.19%	no data	no data
Gross result / operating result	0.92	0.89	0.84	0.59	0.75	0.52	0.85	0.95
ROE	10.16%	12.73%	7.60%	6.93%	5.91%	2.47%	7.46%	9.42%

Investigating the significance of derivatives in managing the value of an enterprise, the effects of investing in derivatives and the results achieved by the enterprise should be analysed. Evaluating the profitability of derivatives based on the ratio of the result from operations on derivatives to the net financial result, it can be seen that it was at a low level of around 1%. The highest value was observed in 2013 and amounted to 1.39%. In contrast, in 2010, 2012 and 2015 its value was negative, while ROE was positive. This means that operations on derivatives had a negative impact on the profitability of equity. Due to the limited data on results from operations on derivatives for the years before 2015, the ratio of the gross financial result (before tax) to the operating result was additionally used. This ratio was lower than 1 in all years of the analysis (2010-2015). This means that the result from all financial operations (including derivatives) was negative and absorbed profits generated from operating activity. Thus, it negatively affected the ROE ratio, which had positive values in the analogous period

## 5. CONCLUSIONS

The purpose of this paper was to examine whether non-financial enterprises operating in Poland use derivatives in value management. On the basis of the conducted research, it should be said that derivatives did not contribute to the creation of value of Polish enterprises (measured by ROE). The share of derivatives in the balance sheet total in 2010-2018 was at a low level and did not exceed 1%. What is more, the analysis of types of derivatives indicates that the forward contracts and foreign currency swaps are dominant. These are instruments with an individual character, and they perform mainly a hedging function, not a speculative one. However, the most important conclusions come from the analysis of profitability on derivatives. The ratio of the share of the result on financial operations in the net financial result was also low, not exceeding 1%. In the years 2010, 2012 and 2015 its value was negative, while ROE was positive.

The additionally analysed ratio of the gross financial result to the financial result from operating activity in the covered period was less than 1, which means that the result from operations on financial instruments (including derivatives) had a negative impact on the financial result and thus on the ROE ratio. The research carried out concerns the period of the past eight years. Financialization is a developing phenomenon, therefore, research into the discussed issues should be continued.

#### LITERATURE:

1. Accounting Act. [Ustawa o rachunkowości z 29 września 1994 r. (Dz.U. z 2001 r. nr 149, poz. 1674 ze zm.)]
2. BIS. Retrieved 15.05.2019 from: [https://www.bis.org/statistics/about\\_derivatives\\_stats.htm?m=6%7C32%7C639](https://www.bis.org/statistics/about_derivatives_stats.htm?m=6%7C32%7C639).
3. Dembiński P. H. (2011), *Finanse po zawale. Od euforii finansowej do gospodarczego ładu*, Studio Emka, Warszawa.
4. Dore R.(2002), Stock Market Capitalism and Its Diffusion, *New Political Economy*, 2002, 1 (7).
5. *Financial instruments of non-financial enterprises*, Central Statistical Office, Warsaw, 2010-2017. Retrieved 15.05.2019 from: <http://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiębiorstwa-niefinansowe/instrumenty-finansowe-przedsiębiorstw-niefinansowych,20,3.html>
6. Froud J., Haslam C, Johal S., Williams K. (2000), Shareholder value and financialistaion; consultancy promises, management moves, *Economy and Society*, 29 (1).
7. Gmytrasiewicz M., Karmańska A. (2010), *Rachunkowość finansowa*, Difin.
8. International Accounting Standards 32, Financial Instruments: Presentation.
9. International Accounting Standards 39, Financial Instruments: Recognition and Measurement.
10. Jonek-Kowalska, I., Zieliński, M. (2017), *CSR activities in the banking sector in Poland*, Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth.
11. Krippner G.R. (2005), The financialization of the American economy, *Socio-Economic Review*, 3 (2).
12. Nawrocki T. L., Szwajca D. (2016), *The Concept of Corporate Reputation Assessment Model – the Stock Market Investors Perspective*. [w:] Strategic Innovative Marketing, Kavoura A., Sakas D. P., Tomaras P. (eds.) Springer Proceedings in Business and Economics.
13. Ordinance of the Minister of Finance on specific recognition principles, valuation methods, scope of disclosure and presentation of financial instruments [Rozporządzenie ministra finansów z 12 grudnia 2001 r. w sprawie szczegółowych zasad uznawania, metod wyceny, zakresu ujawniania i sposobu prezentacji instrumentów finansowych (Dz.U. z 2001 r. nr 149, poz. 1674 ze zm.)]
14. Orhangazi O. (2008), Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973-2003, *Cambridge Journal Of Economics*, 32 (6).
15. Palley T.I. (2007), *Financialization: What It Is and Why it Matters*, The Levy Economics Institute and Economics for Democratic and Open Societies Washington, D.C, 2007, Working Paper Series, nr 525
16. Ratajczak M.(2012), Financialisation of the economy, *Ekonomista* (3).

17. Rydzewska A. (2019), *Financialization of Polish enterprises from the aspect of their size*, 6th International Multidisciplinary Scientific Conference on Social Science & Arts, SGEM 2019, Conference Proceedings, Vol. 6, Modern Science, Issue 6, Vienna, Austria.
18. Sopoćko A. (2010), *Rynkowe instrumenty finansowe*, PWN, Warszawa.
19. Stockhammer E. (2004), Financialisation and the Slodown of Accumulation, *Cambridge Journal of Economics*, 28 (5).
20. Williams K. (2000), From Shareholder Value to Present-day Capitalism, *Economy And Society*, 29 (1).



## QUALITY OF PRESENTATION AS A KEY COMPETENCE IN MODERN BUSINESS

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### ABSTRACT

*Knowledge and skills related to communication are of utmost importance for the effectiveness of presenting business ideas and as such present some of the key competences required for modern business management. This was used as a starting point for a research that compares and analyzes the influence of presentation slides that support a business speech or presentation of business ideas on the memory and perception of the audience in accordance with theoretical assumptions. The research presented in this paper is driven by the fact that properly designed slides increase the success of the presentation performance, while too much unstructured text reduces the interest in the presentation and makes memorizing the presented ideas or facts more difficult. The respondents were divided into two groups, each faced with one type of the same presentation. Both presentations contained the same number of slides and their content was equal but processed in a different way – the first presentation was designed in accordance with the theoretical assumptions of what makes a good presentation, and the second one contained all the elements considered to be unacceptable and inadvisable in theory. The differences were clearly visible in color, the amount of text, font, animation, and accompanying slideshows. The results reveal that most respondents prefer visual presentations that accompany business situations and use them on a daily basis. Moreover, a properly designed and formatted presentation has a better impact on the respondents' memory and keeps their attention longer. Each segment of a badly designed presentation shows significantly worse results at the memory test.*

**Keywords:** *accompanying presentation, communication competences, competences for modern business, PowerPoint, successful presentation*

### 1. INTRODUCTION

Presentations have become an inevitable business communication tool. Of the millions of presentations held daily in the world, only a small percentage of them produce the right and desirable results. The reason for this is the lack of education on visual communication using one of the most powerful communication tools. Shwom and Keller (2003) claim that the blame for an unsuccessful presentation should be placed on the author of the presentation, not on the application used, which is what many people do. The key notion of every presentation is persuasion by using rational means to influence the judgment, attitudes and beliefs of an individual or by directly influencing other people's behavior (encikopedija.hr). The aim of persuasion is to change attitudes or opinions of other people, and its purpose is to influence the behavior and opinion of other people without any coercion, threats or demonstrated authority.

Aristotle defined rhetoric as the ability to perceive the essential and primal means of persuasion which can be found within every subject or occurrence. In other words, the author has the task of identifying the primary elements that will be emphasized during the presentation. The difference in the rhetoric that was taught in ancient times and the one taught today is visible only in the advancement of technology – the technological, not emotional, advancement of mankind. People are still more emotional than rational beings. For example, in the 21st century, rhetoric is called presentation skills or art of presentation. Visual rhetoric looks at how rhetoricians use visual symbols to create the overall ‘image’ as a means of communication. Visual elements in rhetoric are also referred to classical rhetoric: ethos, pathos, and logos. Pathos is determined by influencing emotion in persuasion. Ethos is achieved by the credibility of a speaker or institution. Logos is associated with rational arguments, but it can also act through an image that can be a powerful argument (Kišiček, 2013). Mzoughi and Abdelhak (2012) have shown that visual figures have a better effect on emotion in advertising, while deviations from common perceptions affect emotions of consumers and stimulate greater interest.

## **2. PRESENTATION AS A COMMUNICATION TOOL**

The main task of an accompanying presentation is to visually support and follow the story shared by the presenter with their audience. The audience is in the focus of the presentation as a recipient of the message, and the presenter’s main goal is to convey the message in a clear and understandable way so as to contribute to memorizing the presented content. It is important not to burden the audience with unnecessary content and to feel its needs. Erdemir (2011) has tried to determine how lectures presented in PowerPoint format affect the success of physics teaching. The control group of the respondents was exposed to the traditional teaching method (lecture), while the experimental group was additionally given a presentation prepared using Microsoft PowerPoint. According to post-test results, the students who were exposed to PowerPoint lecture were more successful than those in traditional lectures. This result was accepted as proof that the presentation has a positive impact on learning and memory, and is supported by other studies as well. Compared to the lecture that uses only chalk to show and talk, the presentation offers more options to review images. Mayer and Moreno (2003) speak of the loads in multimedia learning – according to their research in the field of cognitive sciences, there are three assumptions: 1) the human information-processing system consists of two separate channels: an auditory/verbal channel which processes what is said, and the visual (pictorial) channel that also receives input signals and responds to them just like the auditory channel; 2) limited capacity, or cognitive processing, can take place in the verbal/auditory channel at a given time, and in the visual channel; 3) meaningful learning requires a significant amount of cognitive processing taking place in both channels. In order for active learning to be realized, it is necessary to have multiple processes, including paying attention to the presented material, mentally organizing the presented material into a coherent (consistent, without contradictions, etc.) structure, and integrating the presented material with one’s own existing knowledge. The capacity to physically present words and images is almost limitless, as is the capacity of long-term memory, while the capacity to retain and manipulate words and images in the human working-memory is limited (Mayer and Moreno, 2003). Pertaining this, the information presented must be carefully designed to avoid channel and cognitive processing overload. Weissman (2006) sees the main cause of bad presentations which do not achieve the primary goal in authors who do not differentiate between a presentation and a document. While business documentation is filled with text, charts, schematic overviews, and very detailed tables, a presentation asks for a different structure. When a slide is displayed, the audience begins with an analysis, which for the majority equals reading the text on the slide and automatically distracts them from the speaker who presents the idea.

By using fewer entries, the listener chooses in just a few seconds what interests him and further develops motivation for listening. In their research, Brock and Joglekar (2011) focused on the use of visual elements, the number and density of slides, and on other non-textual elements within the presentation. The number of slides did not affect the research, but there was a rule for shaping each slide – three bullets and 20 or fewer words. Lower textural density on the slide and added non-textual elements encouraged positive student feedback. Weissman (2006) argues that many slideshow charts are more often used to blur rather than shed the light on facts. The charts are intentionally designed to be full of text to divert public's attention away from the essential data. Such chart concepts are commonly present in corporate presentations where figures play an important role. The use of font should be consistent throughout the presentation. Recommended fonts for presentations are such as Arial or Verdana, because they are easily readable on a remote screen. If there are some additional fonts used in the presentation for the purpose of emphasizing, it is recommended to use up to three different fonts in one PowerPoint presentation (Brkić, Mehić and Kenjić, 2006). Font size is also important. If the font used is less than 24 point, the audience will find the content difficult to see and understand. Suggested slide font sizes vary between 24 and 32, depending on the size of the room where the presentation takes place. Moreover, the consistency of one font size throughout the presentation is important. Italic letters should be avoided because they are difficult to read, while bold are used only with the purpose of emphasis. Capital letters are used only when something needs to be emphasized; otherwise they are difficult to read because they seem tight (ibid.). The best combination of background and font colors is that they create a contrast. One of the possible graphic overview techniques is using icons. Icons are images and automatically meet the 'less is more' criterion. The right choice of icons is a great presentation tool (Weissman, 2006). Images as a visual means of communication enhance the quality and understanding of the slide content. Visualization is an important element for the accompanying presentation. The size of the image must not interfere with the text; there must be a balance between these two elements (Brkić, Mehić and Kenjić, 2006). Color psychology is part of psychology that studies reactions and emotions that an observer has with regard to a certain color or colors. It has been shown that particular colors evoke different moods, emotional states and behavior with various people. The research conducted by Duh and Kolar (2012) focused on the relationship between basic emotions and colors. The results showed that the participants associated positive emotions with warm colors and the negative ones with cool colors. Black proved to be very unpopular. The psychological effects of green and red are particularly interesting. Green has a great emotional connection with safety and represents stability and endurance and it is calming. Red is a symbol of fire and blood and is thus associated with war and dangers. It is emotionally intense and thus accelerates the rhythm of breathing, strengthens human metabolism, and raises blood pressure.

### 3. RESEARCH METHODOLOGY

The aim of the research was to determine the impact that an accompanying presentation during public speaking has on the memory and the interest of participants, and thus demonstrate that properly designed slides and their content contribute to better memorization and acceptance of an idea. The following hypotheses have been set:

- **H1:** Properly designed slides contribute to the listeners' memory.
- **H2:** Visual elements on the presentation have an impact on how pleasant it is to follow it.

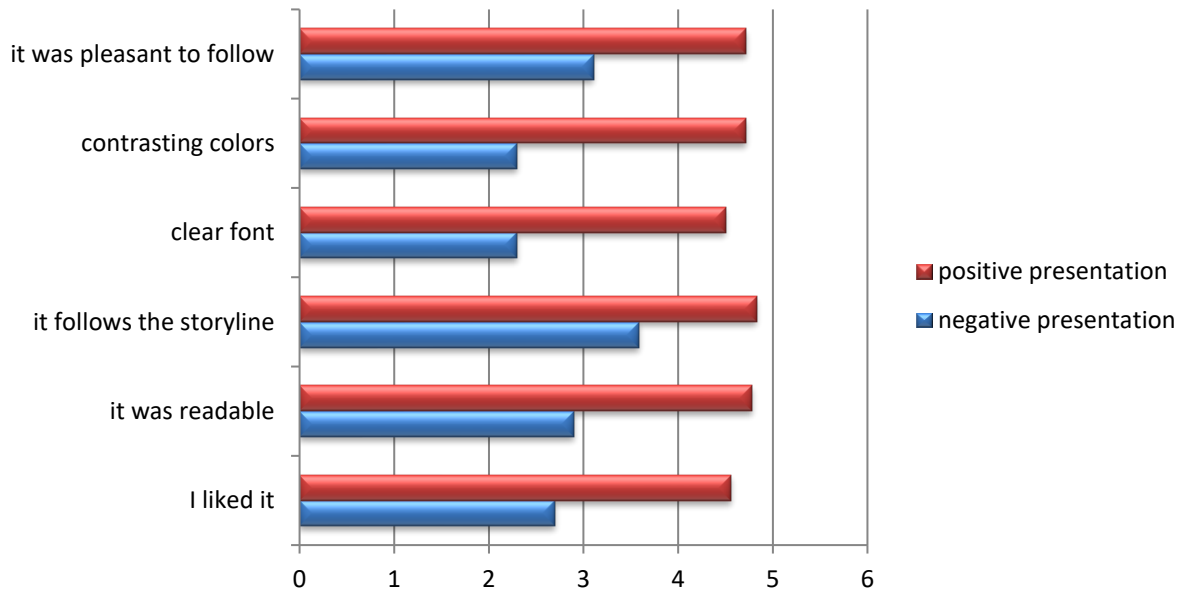
Using the Microsoft PowerPoint® application, version 2016, two presentations were created with universal text for both of them. The first presentation was designed according to the theory that follows the characteristics of a successful presentation, while for the second group of participants, identical content was prepared with a completely different presentation that did not follow the positive recommendations of the theory of visual communication.

After presenting it to different groups of participants, an identical memory test and a questionnaire on the perception of the lecture were given to them. Both presentations consisted of 11 slides, and the lecture lasted for 20 minutes. The study was conducted on a sample of 120 participants, of which 88 were women and 32 men. Both groups were of the same size: 60 participants listened to a positive and 60 a negative presentation. All the participants were students of different studies at University North.

#### 4. RESULTS

The participants responded that they mostly used presentations as support to their study or work and presentations made their act of presenting easier and gave them a sense of security. The tool they use to create their accompanying presentations is in almost all cases Microsoft PowerPoint (only one person uses Prezi). Since they use presentations at their studies or work, the participants also responded to the question of how important it was for their presentation to have a good layout. Statistical data show that none of the respondents think that the presentation layout is not important. 75% of respondents in both groups agree that it is very important that the presentation looks good, while the other either did not think about this or do not pay too much attention to it. Prior to the memory test, the respondents were asked to assess some of the statements referring to public appearance using the Likert scale. They expressed their attitudes and opinions with regard to the speaker and his characteristics, and to the attitude of following a lecture accompanied by a PowerPoint presentation. The difference between the two groups is minimal. The average grade for each of these statements is almost identical. The mean values for the statement that it is easier to follow the lecture with PowerPoint presentation were 4.10 and 4.25, indicating that respondents in both groups agree with this statement. The statement that a PowerPoint presentation increases the clarity of lectures resulted in almost identical values with both groups – 4.18 and 4.12. The participants assessed the statement that a good speaker must have a pleasant voice with somewhat lower ratings, but they still indicate an agreement with the statement. The groups still do not disagree – the average score of the first group here is 3.92 and of the second group 3.85. The last statement with regard to mean values states that a good speaker must have attractive appearance. Here the average score is almost at the border between I neither agree nor disagree, and I agree. One group's mean value was 3.5, and the other group's 3.57. With these results, the groups have shown almost identical assessment of the aforementioned statements. By comparing the results obtained using the Likert scale, clear differences in the respondents' opinion can be noted in six areas (Figure 1). The positive presentation had a better effect in each segment and was better perceived by the respondents. The greatest deviation is visible in the color segment, which was given a greater focus during the presentations' design. Positive presentation had clear contrasts and the colors were gentle and soothing according to psychology, while the negative presentation was full of colors that cause discomfort. In addition, the negative presentation did not have a clear and consistent font throughout the presentation and the letters were unreadable and in various colors. This relates to the result of how pleasant it was to follow the presentation itself. The participants in the positive presentation group were more comfortable than those in the negative one, which the research wanted to achieve. The storyline was identical in both presentations, but the negative presentation diminished the overall impression and probably caused confusion among the respondents, so they were no longer sure if the storyline was appropriate. The data on how much they liked each presentation was an indicator of a successfully conducted research.

*Figure following on the next page*



*Figure 1: Comparison of positive and negative presentations' results with regard to the presentation experience*

In the second part of the research, a memory test was administered. The questions were directly related to the theory presented in the presentation for both groups. The respondents who were exposed to a positive accompanying presentation were to a greater degree aware of the correct answer when compared to those who listened to the negative presentation. The answers were entered on an empty line or were chosen on a multiple choice principle. The students who attended the positive presentation had better results than those who participated in the negative presentation (see Table 1). Visual elements – the negative presentation was dominated by piled up text – led to reduced interest in following the presentation and resulted in a poorly solved test. Readability, complexity and precision of the information presented in the positive presentation have resulted in efficiency. More than 80% of respondents gave correct answers to all the questions but the third; however, even the third question was answered correctly by a high 72%. When compared to the participants following the negative presentation, the results are lower: there were less than 50% of the correct answers, except for the first question in which the percentage was 57%.

*Table following on the next page*

### An overview of correct answers obtained in the memory test

	Positive presentation		Negative presentation	
Number of participants	60 people		60 people	
1st question	48 correct answers	80%	34 correct answers	57%
2nd question	50 correct answers	83%	19 correct answers	32%
3rd question	43 correct answers	72%	27 correct answers	45%
4th question	50 correct answers	83%	12 correct answers	20%

*Table 1: Memory test results after following the positive and negative presentations*

## 5. DISCUSSION

Based on the memory test results for both groups of participants, statistically significant differences are visible with regard to memorizing the content after the presentation. The above suggests the possibility of confirming the first hypothesis that properly designed slides contribute to the listener's memory. Statistically significantly more respondents have shown positive agreement regarding all the statements about the positive experience of accompanying presentations referring to the pleasantness of the presentation and the graphic and visual elements used, and a statistically significant number of respondents expressed a positive correlation. With regard to the negative presentation, the percentage for all the statements is smaller than 50%, except in the statement that the presentation follows the storyline. Since the negative presentation followed the storyline, this result is in favor of confirming the second hypothesis and can therefore be concluded that the visual elements of the presentation have an impact on how pleasant it is to follow it. Based on the results, the research provides important guidelines for understanding the theory of visual communication and the effect of accompanying materials on the efficacy of presenting. However, the possible limitations are the relative shortness of the presentation while conducting the study and a relatively small number of participants.

## 6. CONCLUSION

The list of things that can be done today with the help of technology is almost infinite. Presenters have become aware of the benefits of the progress of technology and the use of accompanying presentations. Their everyday use in public performances increases the value of the public performance and establishes better communication between the speaker and their audience.

This has also led to the advancement of visual literacy. Images, sounds or videos are transmitted with the help of an accompanying presentation, which further places the focus on the subject of the presentation. Although it is important that the accompanying presentation is of high quality and that it contains only the most important facts – because the rest is the presenter's responsibility – it cannot have full impact on the audience if it is not presented adequately by the presenter. The technique and the art of presenting stimulate interest in listening, and a properly dosed display of emotions is just an extra spice for success. On the other hand, if all this is applied equally to every public appearance but the presentation is badly designed, it can result in failure. Too much text on slides, too small fonts, bright colors that do not have enough contrast are just some of the features that can irritate the audience and interfere with their following the presentation. In the accompanying presentation, the valid rule is that less is more. Most of the research conducted refers to the comparison of performance success of the presentation in a traditional way versus exposure to using PowerPoint presentations. The results have shown that PowerPoint lecture is more efficient and the information flow is faster because respondents have visualizations at their disposal and images have a stronger effect than the text itself. Properly designed and formatted accompanying presentation enhances the success of public performances, but it is still a background material and should in no way be in the focus. In the focus of the act of presenting is only the speaker and the visual presentation of the story itself.

#### LITERATURE:

1. Brock, S.; Joglekar, Y. (2011) *Empowering PowerPoint: Slides and Teaching Effectiveness*. Vol. 6. New York: Interdisciplinary Journal of Information, Knowledge, and Management.
2. Brkić, S.; Mehić, E.; Kenjić, V. (2006) *Uputstvo za pripremu prezentacije*. Sarajevo: Ekonomski fakultet u Sarajevu.
3. Duh, M.; Kolar, R. (2012) *Basic Emotions and Colours as Perceived by Fourth Grade Pupils*. Vol. 16. Zagreb: Croatian Journal of Education.
4. Erdemir, N. (2011) *The Effect of PowerPoint and Traditional Lectures on Students' Achievement in Physics*. Vol. 8. Turkish: Journal of Turkish Science Education.
5. Kišiček, G. (2013) *Vizualna retorika (Istraživanje retorike u 21. stoljeću)* Zagreb: Hrvatsko filološko društvo.
6. Mayer, R.E.; Moreno R. (2003) *Nine Ways to Reduce Cognitive Load in Multimedia Learning*. Lawrence Erlbaum Associates.
7. Mzoughi, N.; Abdelhak, S. (2012) *Visual and verbal rhetoric in advertising: impact on emotions and attitudes*. Tunisia: International Journal of Business and Management Studies.
8. Shwom, B. L.; Keller, K. P. (2003) *The great man has spoken. Now what do I do? A response to Edward R. Tufte's "The cognitive style of PowerPoint"*. Evanston: Communication Partners.
9. Weissman, J. (2006) *Prezentacijom do uspjeha: Umijeće predavljanja*. Zagreb: MATE d.o.o.

# ANALYSIS OF THE FREIGHT TRANSPORTATION USING HUCKEPACK TRANSPORT TECHNOLOGY ON THE EXAMPLE OF EUROPE

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## ABSTRACT

*Land transportation can be organized with different types of modern transport technologies at different terminals and can be managed with specialized technical-technological parameters and technological processes. Depending on the level of economy development, which is linked with the development of a different transport systems, the usage of transport technology in Europe is distributed into different shares. Road transportation is the most common mode for freight transportation and as shown in Eurostat statistic document for EU-28 the share is about 75%. Other modes of transportation in the EU are divided into a share which depends on the level of railway infrastructure development (at EU-28 level is 18%) and natural predispositions for inland waterways (EU-28 at 7%). It is also evident that road traffic produces the most CO<sub>2</sub> gases through the exhaust emissions which generally has a negative impact on the generation of GHG and it increases the global warming. The important role in reducing negative environmental impacts has the European Commission, which for many years has contributed to the development of guidelines through adopting documents with their aim and on the basis of defined measures, the development of sustainable mobility and more efficient transport system by shifting freight from road to rail. That is the reason why huckepack transport technology has a future in the freight transportation by rail because this mode of transportation contributes in increasing the modal split, consequently will be reduced the negative effect of greenhouse gas emissions and on the economical basis it will be reduced the external costs. The railway is more cost-effective mode of transportation compering to the road transportation per tons per kilometer (tkm) over long distances. In this paper, it will be analyzed the market in the road and railway mode of goods transportation in the European Union, which are reflected to importance of developing the economies of the member states and it will be analyzed the use of huckepack transport technology (intermodal transport) in freight transportation with the economic effects of Hupac Group's operators.*

**Keywords:** *Intermodal transport, transport technologies, land transport, freight transport analysis, economic parameters in transportation*

## 1. INTRODUCTION

Business organizations and business systems today operate on a very active capital market under the constant influence of turbulent development, and because of their existence in this market they must be prepared for everyday changes and adaptations. The worldwide present process of globalization imposed the conditions of a dynamic and rushing lifestyle, and constant progress in the development of new technologies, the progress and development of information-



communication technologies with computerization and automation of each process, created the preconditions for real-time action. Since market conditions are present at global level in a competitive environment of product and service offerings, with certainty it can be said that timely received, processed and submitted information between business logistic system entities favors choosing the optimal solution. Traffic and transportation, as important factors in the economy, due to the specific nature of the activity, require financial investments for their active and competitive business. This makes them the subject of economic analysis and questions of justification and profitability. To give an answer to these and many other issues, many experts work on various studies and projects for the purpose to optimize the costs and duration of the transport process. Specifically, they explore how to approach the organization and realization of the transportation process from the point of production to the place of consumption. In starting initiatives, setting guidelines for development, and preparing studies and projects, the European Commission [1,2,3] actively participates with important proposals for the development of intermodal transport, with an emphasis on the rail transport system and the inland waterway system. It wants to actively influence the reduction of the road transport sector in the total share of freight and goods transport by increasing modal split. For the organization of the logistics chain there are very important Just in time and Door to door type of transportation. They make technical-technological parameters and technological processes challenging in the organizational sense, acting in the direction of reducing the number of transshipment operations, reducing costs and time of transport from manufacturers to consumers and in the direction of reducing environmental pollution.

## **2. LITERATURE REVIEW**

The issues of this paper are based on the facts that arises from the data obtained from the research carried out in the area of transport organization using intermodal transport technologies. According to an article published in the journal "Our Sea", International Journal of Maritime & Technology, Vol. 63 No. 2, 2016 entitled "Analysis of Intermodal Transport Efficiency in the Central and Eastern Europe" [4] it stated that several factors are involved in the selection of certain intermodal transport technologies to achieve the effects of Door-to-door transportation, reducing or optimizing the cost of transport services. The main costs of transport services include: the costs generated by the carrier (internal transport costs), the state budget for public transport, the costs of the company (external transport costs). In the market economy, internal transport costs are fully included in the cost of transport services. External costs are subjects to outside entities which are not directly related to the transport service and which bear these costs without their consent. External transport costs, due to infrastructure constraints are unwanted side effects that are manifested in: excessive noise, congestion, accidents, air pollution. Given the specificity of the costs, the profitability of each mode of transport has a defined number of kilometers where is also for the railway and for the intramodality more than 500 km. According to an article published in the Hindawi Publishing Corporation The Scientific World Journal, Volume 2014 entitled "An Approach for Economic Analysis of Intermodal Transportation"[5], it provides an economic analysis of various intermodal transport systems where, among comparative analysis of the individual use of road and rail transport, intramodality of roads and railways, which argues that intramodality is worth at distances greater than 1200 km in relation to the road. The road is the most profitable mode of transport on short and medium distances and the rail is the most profitable on long distances. The analysis is based on a mathematical model for the presentation of costs in intermodal transport. The article published on a professional network for scientists and researchers from the "Research Gate" from 2018 "The Economics of intermodal freight transport" [6] refers to the role of terminal on intermodal network, business model and integration into the entire transport system, the application of 3PL logistic services, cost of transport depending on the distances, required

time of transportation and on the key economic parameters required for successful operations and the implementation of intermodal processes.

### **3. MODERN TRANSPORT TECHNOLOGIES**

Human history is filled with facts that point to a natural human need for trade in goods and resources, and it shows man's need for trading, for achieving profit and possession. The goods were swapped (a substitute for one type of goods for the other), later exchanged for various forms of coinage (money merchants, rulers, statesmen, made of various alloys), whereas today goods (product/service) has its own price defined by market law. The routes of transport were organized in a conventional way which means that the goods are transported using a different means of transportation. Integral transport (nowadays palletization) is designed to extend freight and goods transportation using two or more modes of transport in the transport process. In the 60s of the 20th century, containerization is being developed, and today the increasingly emphasized intermodal transport. There are several definitions of intermodal transport where according to the book *Integralni transportni sustavi i robni tokovi* the intermodal transport is defined as a technology that in transportation uses in the same time two modern and convenient mode of transport, whereby first vehicle with the cargo becomes a freight to another mode of transportation and the transport process are carried out at least between two states. [7] According to the book *Intermodalni transportni sustavi* it is stated that intermodal transport is a mode of transport where two or more modes of transportation with freight units are used in transportation as a part of a road vehicle without unloading or transshipment. Intermodal transport is a system that involves transporting goods from door to door with the use of at least two modes of transport and without changing transport modes such as containers, swap-bodies, or complete vehicles. [8] According to a document published by the Transportation Research Board, the Intermodal Freight Transport Committee there are also mention several definitions that defines Intermodal transportation, with multi-mode integration capabilities, provides a flexible response to changing supply chain management requirements at global markets and distribution systems, and explains that Integrated intermodal transport system is a significant and crucial factor in the successful implementation of supply chains, both domestic and international [9]. The development of transport technologies has enabled continuous movement, movement and flow of goods and resources from producers to consumer, minimizing negative effects on transport, optimizing travel costs and time, and rationalizing and harmonizing time and space inequalities. Each of the transport technologies has the purpose of optimizing, enhance and improving transport.

### **4. HUCKEPACK TRANSPORT TECHNOLOGY**

Huckepack transport technology is formed for horizontal or vertical loading and unloading trucks with trailer and semi-trailer, separate trailers, semi-trailers and swap-bodies or tanks off/on special railway wagons. In huckepack transport, transport routes are formed with the routes merging road and railway mode of transportation. Routes defined with road network are in huckepack technology represented less comparing with the railway which is one of the important goals of huckepack technology (unload road routes using the railways). In Europe, huckepack transport is organized and operated by specialized national societies or companies for the transport of road vehicles by rail. Examples are companies from SR Germany (Kombiverkehr A.G.), Sweden (S-Combi), France (Novatrans), Switzerland (Hupac), Austria (Ökombi) and other companies. The huckepack network is development towards other parts of the European continent (north and east) where is established and expanded transport network on the territory of Asia and the Far East (Russia, China). In the Republic of Croatia, the huckepack transport technology is operated by Crokombi Ltd with organization of transport containers and transport road vehicles (swap body truck, truck semi-trailers and trucks).

The use of huckepack's transportation technology in the world marks significant development especially in the US, Canada, and South American and Australian countries. Problems arise due to differences in the railway dimensions, harmonization of the timetables, lack of registered companies that would carry out huckepack's activities, the underdevelopment of the railway network, procedural barriers, etc.

*Figure 1: RMG (Rubber mounted gantry crane)*



*Source [10]*

## **5. HUCKEPACK TERMINALS**

The huckepack terminals are configured for pick-up/delivery of semi-trailers, swap-bodies, full trucks and containers. By its position and technical-technological parameters, the huckepack terminals are part of a group of land terminals with the characteristics of road-rail terminals, which implies connecting the road and rail transport sectors to the mutual cooperation of road and rail transport vehicles. In a functional way, huckepack terminals clearly represent goals of huckepack technology, which reduces the road traffic loads by using railways or rail trains to provide long-distance freight transport with reduction of road freight traffic, effectively linking road and rail transport with fast and secure switching to each other, all users and participants of the huckepack transport service provide access to information at every stage of transport through the information and communication system and provide quality service in compliance with standards and standards in operations with significant environmental impact.

### **5.1. Technological processes**

Terminal technological processes are divided as a functional unit into several segments or subsystems:

- Subsystem of receiving / dispatch zones
- Temporary storage subsystem
- Subsystem of the transceiver zones.

Since the processes are interlocked and there exist frequent cross-actions, it cannot be separated physically. Most of the overhauling operations are carried out in the area of railway and crossing tracks with RMG cranes, wagons, maneuvering locomotives and surfaces for temporary decommissioning of freight units. Mechanization as an important part of the huckepack terminal equipment can be divided into two groups:

- main and accompanying.

The main mechanization is:

- RMG crane (floating container crane) which carries out loading, unloading and transshipment of freight wagons

In accompanying entries:

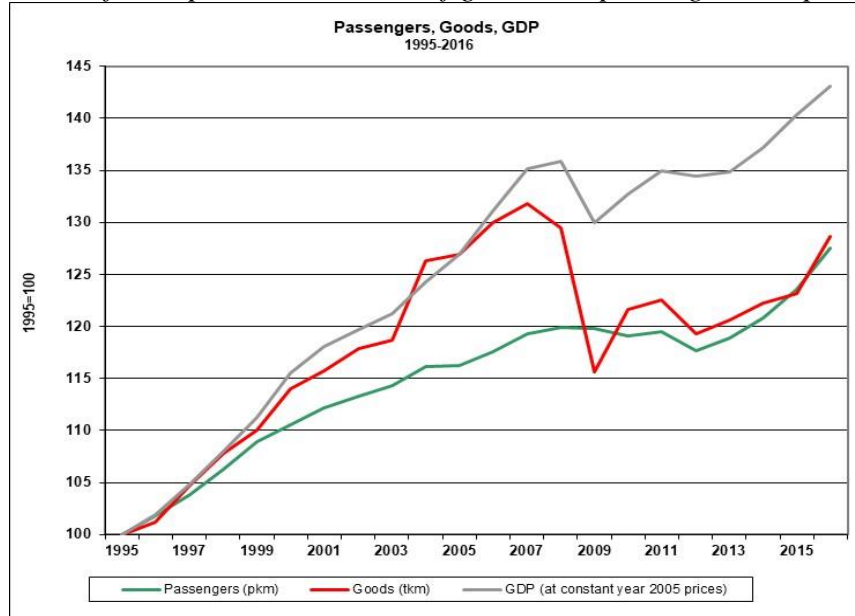
- RTG (Rail mounter gantry crane- floating container crane on wheels)
- Mobile transceiver / portable / warehouse / reach stacker
- Tractor terminal (tractor)
- Maneuvering locomotives for wagon retrieval and train formation

Wagons of different shapes and batches of production, wagons with pockets, low wagons, wagons for transporting containers to wagons for the transport of swap-bodies, tanks, trailers and semi-trailers are used to accommodate cargo units. The main means of operation is semi-trailers, in occasions the trailers, the swap-bodies and the low-profile railway wagons. Transverse operations are performed by means of a specialized grapppler arm, but more and more are used for loading units requiring application of the spreader of the capture device for the transfer. For the transshipment of removable class C swap-bodies from a vehicle on a vehicle, the horizontal technique grasping is used to draw cargo units by hanging.

## **6. ROLE OF ROAD AND RAIL FREIGHT TRANSPORT IN ECONOMIC DEVELOPMENT OF THE EU**

Transport plays an important role in the development of country economy. It creates a single market in which companies from different sectors operate. The transport market produces opportunities for opening new jobs positions that directly contributes to the definition of gross domestic product (GDP). Road transport generally makes a support of connecting economically active areas in land transport while rail transport is increasingly gaining importance because of the comparative advantages. Advantages are in the field of less traffic congestion, less environmental pollution, and lower transport prices at medium and farther distances. According to statistical reports and analyzes [19] carried out by the European Commission for EU state members, transport is in all modes of transportation comparable in total gross domestic product (GDP), gross value added (GVA) and through realization of turnover in trade of goods within the external and internal market. In the field of transportation, in total, according to the available data from the document entitled "Statistical Pocketbook 2018 EU Transport in Figures" [2016], the traffic system has achieved for the EU-28 state members a share of 5% turnover from the total GVA, the entire transport and storage system employs about 11.5 million employees, which represents about 5.2% of total EU workforce, there was achieved about 3,661 billion tkm in freight transport, where the share of road transport were about 49.3% of total turnover, railway 11.2%, inland waterways 4% and oil pipelines 3.1%. Maritime traffic within the EU-28 was the second most important aspect of transport of goods with a share of 32.3%, while air traffic was only in 0.1%. The trend of transportation services of goods and passengers compared to the GDP is shown in the graph [1] and table [1].

*Graph following on the next page*

*Graph 1: The trend of transportation services of goods and passengers compared to GDP*

Source: [19]

*Table 1: Annual growth rates in transport in EU-28*

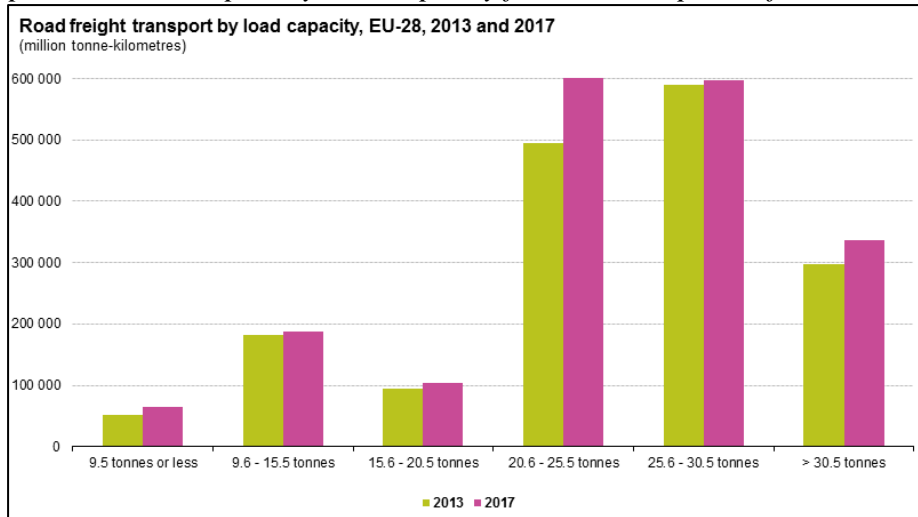
Annual Growth Rates EU- 28	1995-2016	2000-2016	2015-2016
GDP at year 2005 prices and exchange rates	1,7%	1,3%	1,9%
Passenger transport pkm	1,2%	0,9%	3,2%
Freight transport tkm	1,2%	0,8%	4,5%

Source: [19]

### 6.1. Road transportation in EU-28

In year 2015 there was about 3.07 million employees in road transport, which is a little more than 28% of employees from the total number in the transport sector. There are 571,046 companies registered for providing road transport services, the largest number of registered companies was recorded in Estonia with 101,113 companies while the largest number of employees was registered in Germany with 427,100 employees. About 22,100 employees and 5,478 companies were registered in the Republic of Croatia. In the total modal distribution (modal split) for land transport, road traffic share was 72.8%, which is equivalent to the transmitted tonne-kilometers (tkm) in the amount of 1.804 billion tkm. According to period from 2000 to 2016, there was an increase in tkm of 19.5%. There are 37,626,700 freight vehicles registered (2017 was newly registered for 2,377,705 freight vehicles, that shows increase of 3.1% compared to 2016), where are 1,173.6 billion tkm achieved in national transport (64, 1%), while in international transport 657.2 billion tkm (35.9%). The important role has also the shares of tkm-empty runs that are inevitable due to the nature of the transportation services. At the EU-28 level, there were 20% of empty runs and most member states recorded a 15% to 30% idle rate. In domestic transport it is 23.1% while in international transportation 12.2%. Due to domestic transport, the data indicates that it must act on a better organization of transportation in order to minimize their empty runs to the smallest possible level. Transport companies achieved 334,046 million euros annual turnover, which makes 22.41% of the total turnover, and represent a share in the total GDP of the EU-28 countries in the amount of 2.11%. Most of the freight was transported with vehicles with a capacity of 20.6t-25.5t, which makes 32.5%, while around 3.4% of the freights was transported with vehicles with a load below 9.5t. Compared to 2013, in both cases, this is an increase of around 25%.

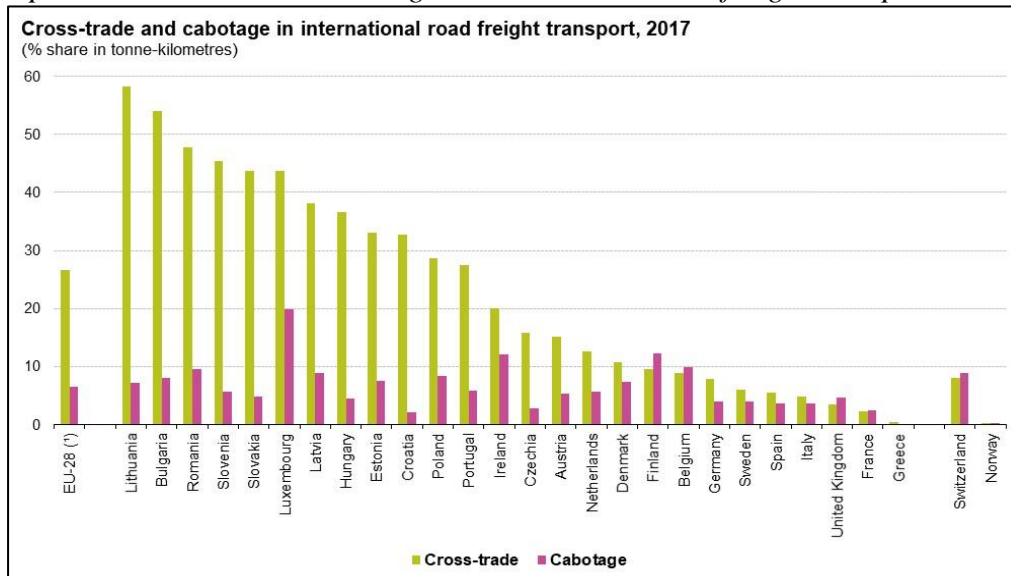
Graph 2: Road transport by load capacity for EU-28 in period from 2013-2017



Source:[19]

Cabotage is increasingly taking a percentage in total tons or tkm, but due to the still undefined liberalization of the market for cabotage, transport can be considered as part of the integration of the market. There is also a way of transporting goods called cross-trade, which involves the carriage of goods in international traffic between the two countries with a vehicle registered in a third country. In the cabotage, a total of 6.5% tkm was achieved, while in cross-trade transport, 26.7% tkm was achieved. Lithuania and Bulgaria are leading in cross-trade transport with around 56%, while Luxembourg and Finland took the highest place in cabotage with around 12%. Considering the geographical specificity of the territorial area, the freight traffic of the Alpine and Pyrenean area is particularly important, including traffic in the countries of Switzerland, Austria and France, where was recorded the traffic of 66.2 million tons of cargo.

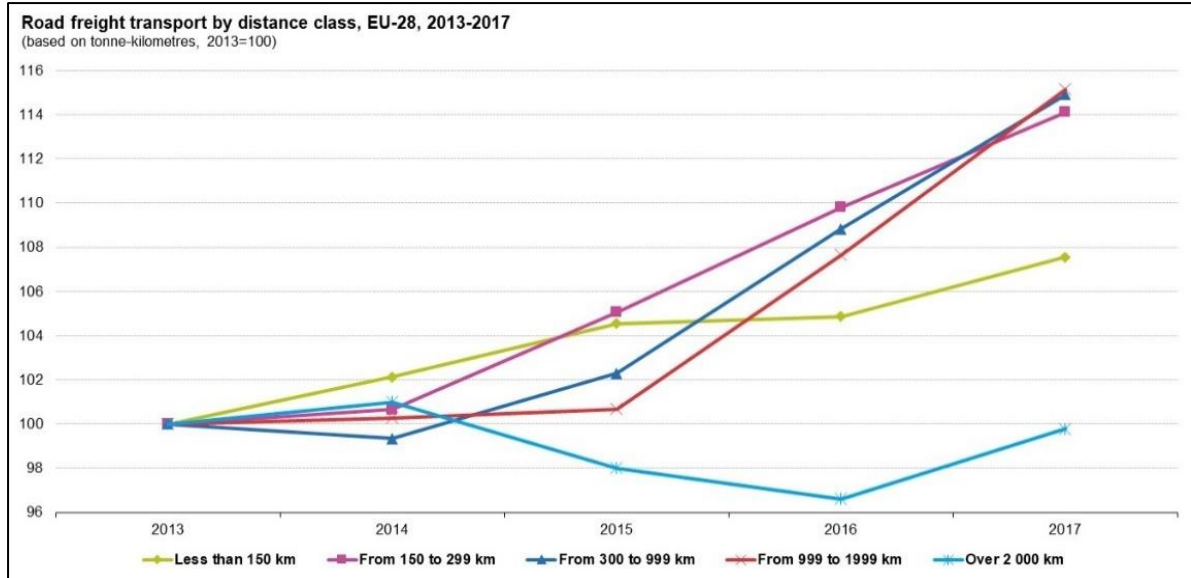
Graph 3: Cross-trade and cabotage in international road freight transport in 2017



Source: [19]

Due to the distance at which the load is transported, the highest rate of transportation is done at a distance of 300-999 km with a total share of 30% (increased by 752 520 million tkm) as comparing to the year 2013 an increase of 14.9%.

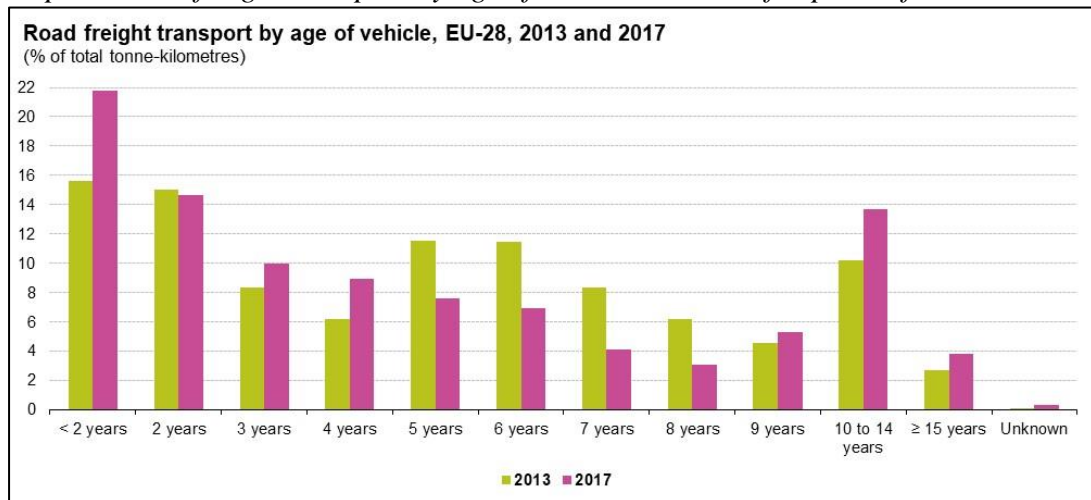
Graph 4: Road freight transport by distance class in EU-28 for period from 2013-2017



Source: [19]

The most common type of transport technology was palletization with a share of about 43% or approximately 764,999 million tkm, while in the containerization with different TEU units there was a share of about 6% or 108,704 million tkm. The age of the fleet is of great importance not only in terms of technical safety which affects the overall safety of transportation, but also because of the general costs that arises from the causes of traffic, equally internal and external costs. Given the high ecological standards accepted by the European Commission's decisions, the age of the fleet should be as small as possible, or on an average of 5-10 years. Also important is the CO<sub>2</sub> emission generated by the exhaust system and the generation of GHG emissions. The total number of freight vehicles in EU-28 area in 2016 was registered in amount of 6.3 million freight vehicles, where the average age of the lightweight vehicles was 10.5 years, while medium and heavy trucks 11.7 years. In 2017, the highest number of transported tkm was recorded for vehicles under 2 years, in amount of 417.073 million tkm or 21%. Regarding to the period from 2013 to 2017 this makes an increase of 56.1%, which gives the indication for the renewal of the fleet.

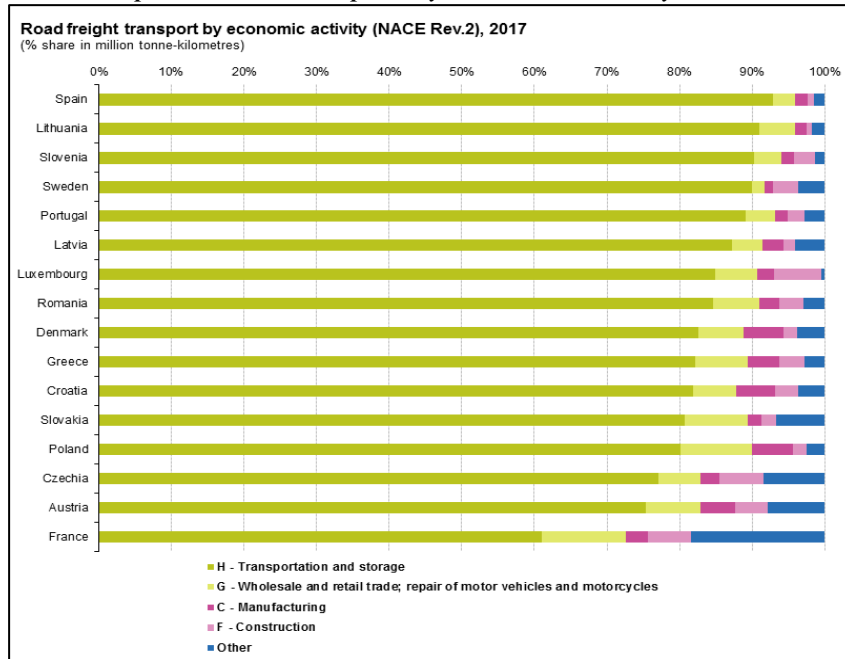
Graph 5: Road freight transport by age of vehicle in EU-28 for period from 2013-2017



Source: [19]

Economic activities in the transport of goods are divided into several categories: transportation and storage, wholesale, retail, repair of motor vehicles and motorcycles, manufacturing and construction, and other categories. The largest share of economic activities was achieved in the area of transport and storage.

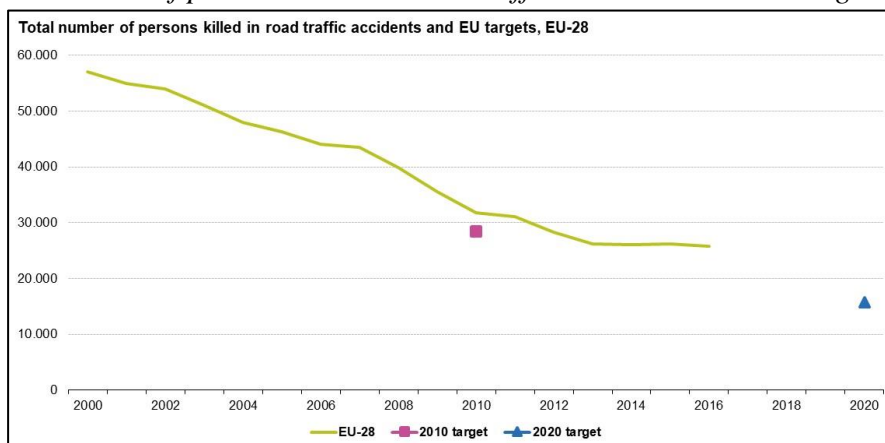
Graph 6: Road transport by economic activity in 2017



Source: [19]

In the year 2017, in EU-28 state members, there was built a total of 76.823 km of motorways, which makes for the period from 2000 to 2016 an increase of 28%. For the roads with different categories, there was built a road network with 4.911,789 km. Considering the diversity of the road transport network, considering the number and age of the registered vehicles in the freight transportation and the legal regulations on the prohibition of movement of freight vehicles, the inevitable fact is that accidents also occur in traffic, with different consequences. It is recorded for 2016 in the EU-28 total of 1.099,075 traffic accidents with injured persons, of which 25.651 people were killed. The goal is to 2020 reduce the number of killed persons by 39% to number of 15.750 killed.

Graph 7: Total number of persons killed in road traffic accidents and EU targets for EU-28

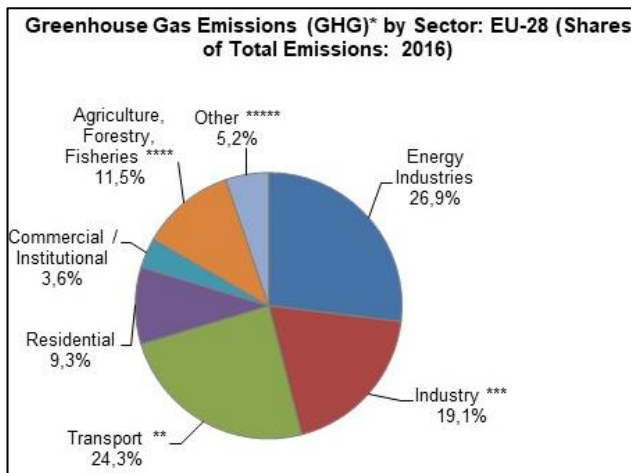


Source: [19]



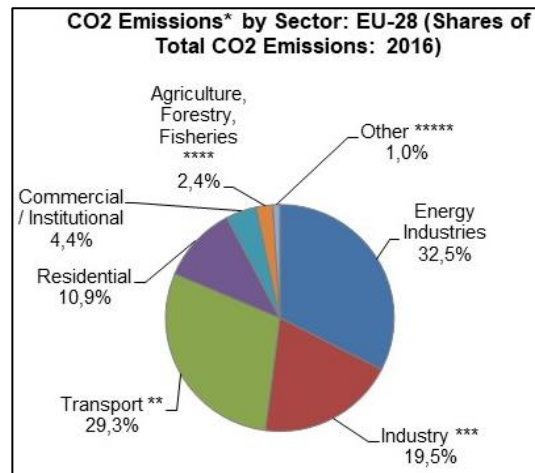
For the purposes of environmental protection, the reduction of GHG emissions, and especially the reduction of CO<sub>2</sub> emissions in transport and total reduction of energy consumption in daily life, the Paris Agreement and the Kyoto Protocol have defined the goals for reducing global warming and CO<sub>2</sub> emissions. Transport is one of the major producer of GHG emissions, which is also reported by the sectoral comparison in a share of 24.3%. Also comparing sectoral CO<sub>2</sub> emissions, transport is at the very top after energy production for the industry with a share of 29.3%. According to total energy consumption, transport share is 33.2% and is behind energy consumption in households and businesses, which share is 39.6%. If we comparing separately, road traffic in the total share of GHG and CO<sub>2</sub> emissions representing the share of 72%.

Graph 8: Total greenhouse gas emissions by sector in 2016 for EU-28



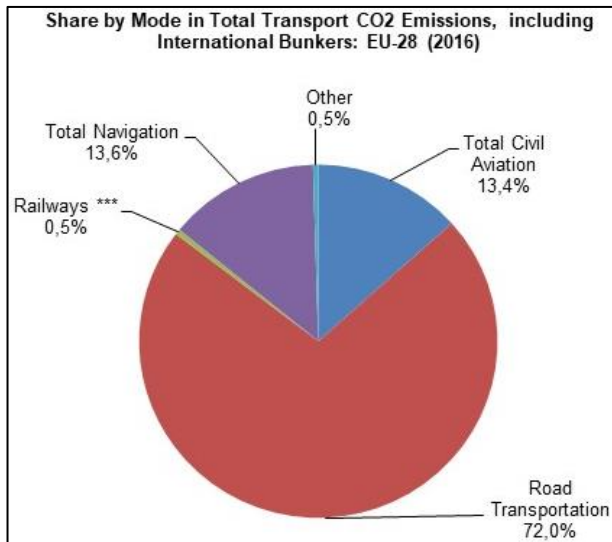
Source: [19]

Graph 9: Total CO<sub>2</sub> emissions by sector in 2016 for EU-28



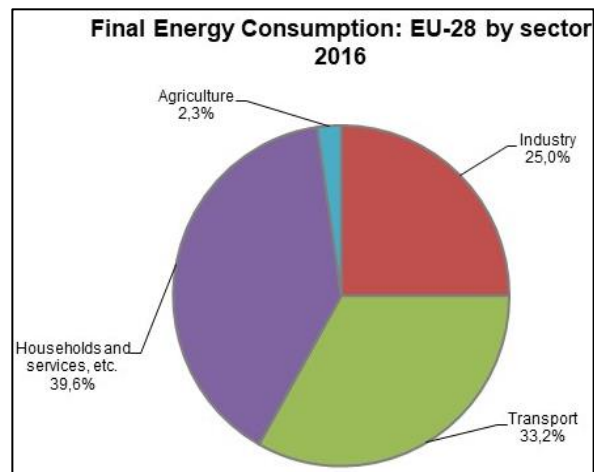
Source: [19]

Graph 10: Total transport CO<sub>2</sub> share by mode in 2016 for EU-28



Source: [19]

Graph 11: Final energy consumption by sector in 2016 for EU-28



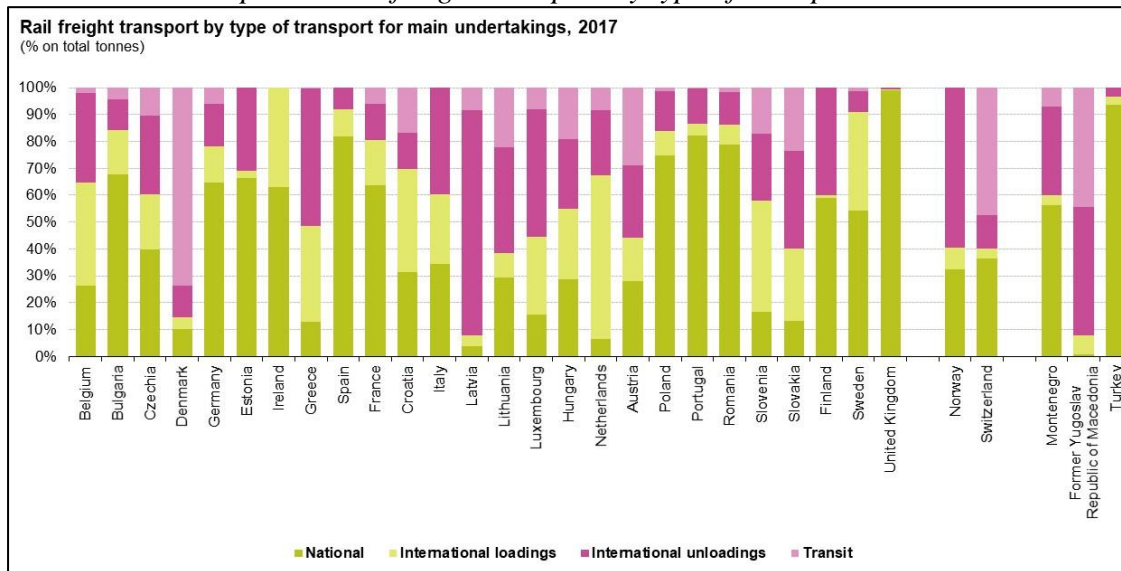
Source: [19]

## 6.2. Railway transportation in EU- 28

In the railway transportation there was in 2015 approximately 4,964.000 employees, which represents a share for about 4.6% of the employees in the transport sector. Rail transport is carried out by companies either in state or private ownership. There were 928 registered companies, where the largest number of companies and employees were in Poland (167-

498,000) and in Germany (158-470,000). In the total modal split for land traffic, rail transportation took a share of 16.6%, which is equivalent to overturned tons-kilometers (tkm) in the amount of 412 billion tkm. We should not analyze total rail transport from the position of the entire EU-28, because of the specific freight transportation, but the data for the 2017 shows that the share of international traffic was for almost 16%, international freight 22%, transit 12% and national 50%.

Graph 12: Rail freight transport by type of transport in 2017



Source: [19]

In the year of 2017, there was 65.567 locomotives and rail vehicles registered, which have achieved 414.8 million tkm and 18% of share in freight transportation. Cargo companies recorded 74.113 million euros turnover on an annual basis, which makes 4.97% of the total turnover. The participation in GDP on the level of the EU-28 was 0.47%. Transportation of freight in the Alpine and Pyrenean areas recorded a turnover of 42.5 million tons which on a comparative basis between 2000 and 2015 makes an increase of 0.8% and between 2015 and 2016 increase by 5.9%. Freight transportation under LaManche recorded 1.637,000 t transported tons on the principles of shuttle transportation. For the EU-28 area, in 2016 there were 217.081 km of railway lines, of which 116.593 km were electrified (53.7%). There are 8.434 km of railway on which the speed is above 250 km/h. At the moment, in the process of construction or reconstruction of high-speed railways is a total of 1.676 km. Despite the separation of the railway infrastructure from the road infrastructure, it is very dangerous to cross spots where the railway- road crossings are. No matter what these places are marked, protected and ensured, there is still a potential danger of accidents. In 2016, EU-28 reported a total of 1.787 railway accidents involving 964 deaths by train crash. It is also not possible to exclude data on the number of suicides in the number of 2.773 persons. Compared to 2010 the number of deaths in traffic accidents decreased by 24%. Regarding energy consumption and the share of GHG emission of gases and CO<sub>2</sub>, railway traffic in the total share of GHG emissions and CO<sub>2</sub> participates for only 0.5% which makes it the cleanest transport mode, with total energy consumption for only 2% of the total energy consumption in transport.

### 6.3. Analysis of freight transport using Huckepack transport technology

In Europe, the largest organization who represents huckepack transport technology is the Hupac Group organization. The group consists of 18 companies according to data from the end of 2017 and the companies are positioned in Switzerland, Italy, Germany, the Netherlands, Belgium,

Poland, Russia and China. The Society was founded in 1967 in Chiasso, today they have about 100 shareholders, the share of capital amounts to CHF 20 million, of which 72% belong to logistics and transport companies, 28% to railway companies which guaranteeing market closeness and independence from railway companies. Company employs 470 employees who works at the 8 terminals. Company offers service as:

- a wide range of intermodal transport services that meet different market demands
- the Shuttle Net unit manages a near intermodal transport network in Europe
- Hupac offers several departures each day on key routes
- customers benefit from flexibility and reliability
- the Intermodal Express Russia area is organizing intermodal transport to Russia and the CIS countries using its own rail transport facilities
- the Landbridge area of China provides links between China and Hupac's European network
- the Shuttle unit serves large customers who rent their own trains, thus providing capacity at attractive prices
- Maritime Logistics Unit is focused on offshore transportation, offering a full range of services including customs clearance, handling of empty containers and first and last transport [20]

According to the statistical data for 2017, there was a traffic volume of 763.101 road consignments (an increase compared to the year before by 3.5%), which contributed 436.9 million euros in turnover, with annual profit of 10 million euros, EBITDA of 43.2 million euros, while operating expenses accounted for 43.9 million euros. Economic indicators in the period from 2012 to 2017. are shown in the table [2].

*Table 2: Hupac Group economic development*

1000 of CHF/ Year	2017	2016	17/16%	2015	16/15%	2014	15/14%	2013	14/13%
Income from supplies and services	485,570	470,281	3,30%	427,540	10%	476,640	-10,3%	480,199	-0,7%
Other income	66,817	68,838	-2,90%	66,699	3,2%	74,818	-10,9%	69,216	8,1%
Cost of the services	447,262	433,816	3,10%	394,197	10,1%	447,014	-11,8%	448,601	-0,4%
Gross profit	105,125	105,303	-0,20%	100,042	5,3%	104,444	-4,2%	100,814	3,6%
Group's operating profit	11,127	10,752	3,50%	6,058	77,5%	7,544	-19,7%	6,563	15%
EBITDA	48,041	43,535	10,40%	41,306	29,3%	41,435	-0,3%	50,807	-18,5%
Millions of CHF/ Year	2017	2016	17/16%	2015	16/15%	2014	15/14%	2013	14/13%
Annual turnover	485,6	470,3	3,2%	427,5	10%	476,6	-10,3%	480,2	-0,74%

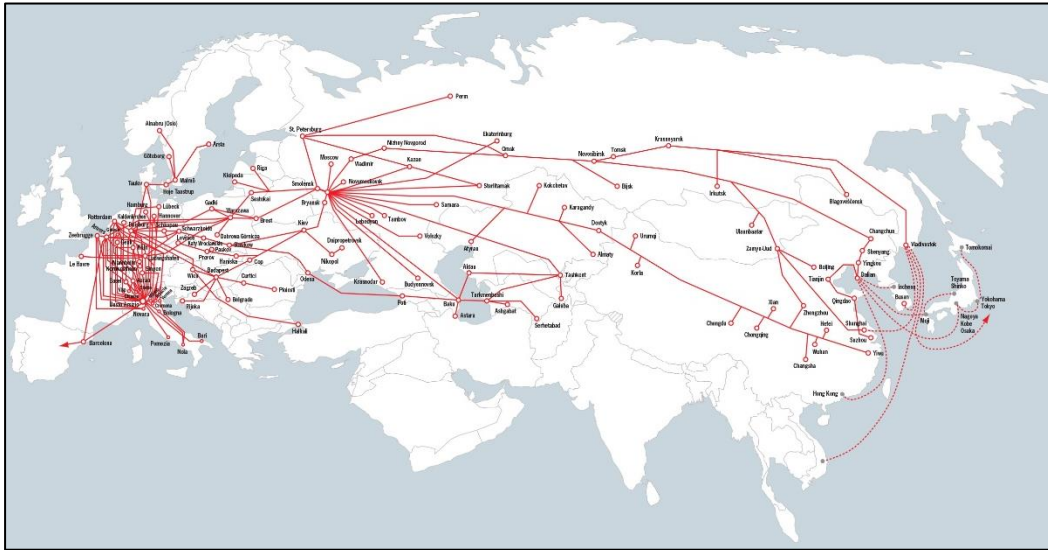
*Source: Made by authors from available data [21]*

The mode of transport is planned via:

1. Shuttle Net network- according to data from 2018 every day operate about 110 trains
2. Intermodality connecting Russia, Kazakhstan and other countries CIS. A total of 220 motor trains operate on a 1520 mm wide railway
3. Landbridge China is a rail freight option where it is co-operating with CRCT (China Railway Container Transport Co.) where the block trains and intermodal transport were organized between Japan, South Korea and domestic transport in China
4. The Company Shuttle- serves major customers who charter their own trains
5. Maritime Logistics ERS- connecting port to inland terminals

According to available data [20], the railway network includes the following directions shown in the picture [2].

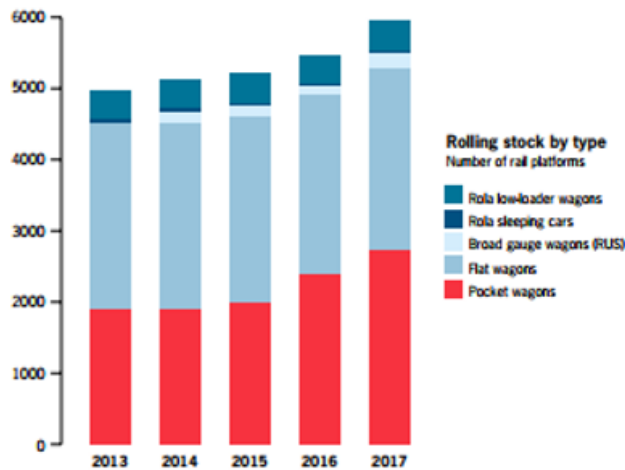
Figure 2: Hupac Group network



Source: [20]

There are 5.941 wagons and 10 main/maneuver locomotives registered for use. Graph [13] shows a continuous increase of usage of different types of towing and towed means of railway transportation.

Graph 13: Rolling stock by type



Source: [21]

Comparing huckepack transport technology with road freight transportation, the differences is in energy consumption where Hupac transportation consume 89% less energy to achieve the same level of freight transportation. This also means a smaller volume of CO2 emissions for 74%. According to the data from European Combined Transport [26] for the EU-28, it shows a continuous increase in the number of consignments using intermodal transport or huckepack transport technology. The data from 2016 and 2017 is showing increase for 5.48% in number of consignments transported by the UIRR members. In total there were 3.2 million shipments transported which represents 2.4% of the GDP of the European Union.

There is also an increase in cross-border transport for 8.83% and domestic transport in the EU-28 for 7.93%. EU-Asia-China transport services increased for 38% and traffic on the continent of Europe for 5%.

*Table 3: Summary of European combined transportation*

Type of transport	Cross-border			Domestic			Total		
	2016	2017	17/16%	2016	2017	17/16%	2016	2017	17/16%
Years									
Number of consignments	2.075.709	2.153.563	3,75%	949.151	1.037.008	9,26%	3.024.860	3.190.571	5,48%
Containers	1.559.213	1.651.506	5,92%	860.373	954.711	10,96%	2.419.586	2.606.217	7,71%
(Craneable) semi-trailers	391.389	372.826	-4,01%	79.146	73.453	-7,19%	470.535	446.279	-5,15%
Complete trucks (Ro-La)	125.107	129.231	3,30%	9.632	8.844	-8,18%	134.739	138.075	2,48%
Average distance	1.067	1.120	5,00%	491	492	0,20%	878	944	7,48%
Billion tkm	50,26	54,70	8,83%	8,70	9,39	7,93%	58,96	64,09	8,70%
Number of TEU	4.151.418	4.307.126	3,75%	1.898.301	2.074.015	9,26%	6.049.719	6.381.141	5,48%

*Source: Made by authors from available data [22]*

The main characteristics of huckepack transportation technology is the transshipment of swap-bodies and semitrailers. According to the analyzed data, there is also a continuous increase in the use of these type of technology with an increase in transport of goods for a five-year period for 26.15%, swap-bodies for 26.06%, for semi-trailers for 33.78%, and whole freight wagons for 7.72%. Competitiveness is above 900km, which shows a 50% increase in transport while the ratios of 300-600km and 600-900km are approximately equal to the transport share for each analyzed year. The increase was recorded in total tkm in the amount for 64%. [22].

*Table 4: Evolution of combined transportation (2012-2017)*

Combined Transport								
Years	2012	2013	2014	2015	2016	2017	17/16%	17/12%
Number of consignments	2.529.264	2.645.950	2.819.606	2.876.585	3.024.860	3.190.571	5,48%	26,15%
Swap bodies and containers	2.067.488	2.134.004	2.302.831	2.348.762	2.419.586	2.606.217	7,71%	26,06%
(Craneable) semi-trailers	333.597	375.432	362.654	382.250	470.535	446.279	-5,15%	33,78%
Complete trucks (Ro-La)	128.179	136.514	154.121	145.573	134.739	138.075	2,48%	7,72%
Total billion tkm	39,08	40,74	52,17	54,98	58,96	64,09	8,70%	64,00%
< 300 km	3%	2%	2%	1%	1%	1%	0,00%	-66,67%
300 km-600 km	12%	21%	17%	14%	12%	11%	-8,33%	-8,33%
600 km-900 km	47%	39%	36%	36%	34%	31%	-8,82%	-34,04%
> 900 km	38%	38%	45%	49%	53%	57%	7,55%	50,00%

*Source: Made by authors from available data [22]*

## 7. CONCLUSION

In everyday transport process, the operations of loading, transshipment and unloading of cargo, goods handling, warehousing and distribution are being carried out. Since freight and goods flows moves in different directions by connecting markets around the world, different types of transport technologies are in use. In addition to the container as a bulky unit, other types of cargo units such as trailers and semi-trailers are also used in the form of group of vehicles. For example, group of vehicles can be formed as a trailer with pedestal on wheels, trailer with refrigerated chamber, tarpaulin semi-trailers and swap-bodies. According to the year 2017, the road transport sector was the most frequent transport mode in land transportation in the share of 72.8%. The indicators for energy consumption in the transportation of equal load capacities is showing that the railway consume less energy than road per ton of freight (road transport over 100 km, while railway overhangs 330 km). This indicator represents an advantage of the railway comparing to the road transport sector and must be actively affected in the larger share of the railway transportation. Also, the share of external costs is very important, where

according to the data on the railway goes 7.9 € to 1000tkm while on the road 50.5 € to 1000tkm. All these indicators points to the many comparative advantages of railway in relation to road transportation, unfortunately the development of railway in some countries stagnates due to the still strong road-lobbies that impose business policy and impact on the economy for their benefit. The European Commission in the transport, energy and environmental sector issues important documents with the defined plans, goals and measures to increase the modal distribution (split) of cargo from road to rail, electrification of railway and use of electric and hybrid cargo vehicles, reduction of GHG and CO<sub>2</sub> gases within the different time frames and with long-term financial resources. The company Hupac Group promotes huckepack's transport technology in a positive way, where we can see continuous progress in the development of transportation semi-trailer, swap-bodies and generally in development of transportation technology where the market has expanded to Russia and China, which countries opened its capital market and are actively involved in trading with Europe. It also contributes to the inclusion of information and communication technology that is irreplaceable in today's management business environment. It also has an impact on vehicle tracking, database logging, a web-based platform for logistic operations, easier tracking and routing of wagons with a reduction in waiting time and remote monitoring of the status and position wagons, times of arrival and departure, and development of sensors for maintenance. Although the global politics has a daily impact on equalizing the balance between the world's strongest economies, technology and transport and trade exchanges must have its independence in order to keep the trend of economic progress, movement of people and goods smoothly.

#### LITERATURE:

1. EUROPEAN COMMISSION. WHITE PAPER. Roadmap to a Single European Transport Area –Towards a competitive and resource efficient transport system. Brussels. 2011.
2. EUROPEAN COMMISSION. GREEN PAPER. Towards a new culture for urban mobility. Brussels. 2007.
3. COMMISSION OF THE EUROPEAN COMMUNITIES. Action Plan on Urban Mobility. Brussels. 2009.
4. Dyrda A. Wiśnicki B. 2016. Analysis of Intermodal Transport Efficiency in the Central and Eastern Europe. *Naše More. International Journal of Maritime & Technology*. Vol. 63 No. 2. 2016.
5. Sahin B. Yilmaz T. Ust Y. Fuat Guneri A. Gulsun B. Turan E.. 2014. An Approach for Economic Analysis of Intermodal Transportation. *Hindawi. The Scientific World Journal*, Volume 2014.
6. Monios J. 2018. The Economics of intermodal freight transport. *ResearchGate*. January 2018.
7. Marković I. Integralni transportni sustavi i robni tokovi. *Fakultet prometnih znanosti*. Zagreb. 1990.
8. Brnjac, N. Intermodalni transportni sustavi. *Fakultet prometnih znanosti*. Zagreb. 2012.
9. Dewitt W. Clinger J. 2000. Intermodal freight transportation. *Transportation Research Bord. Transportation in the New Millennium*. 2000.
10. Knapen Trailers. [Internet]. Available from: <https://www.knapen-trailers.eu/trailers/fixed-side-walls>
11. Zelenika R. Jakomin L. Suvremeni transportni sustavi. *Ekonomski fakultet Rijeka. Tipograf d.d. Rijeka*. 1995.
12. Baričević H. Tehnologije kopnenog prometa. *Pomorski fakultet u Rijeci. Rijeka*. 2001.
13. Božičević D. Suvremene transportne tehnologije. *Fakultet prometnih znanosti. Zagreb*. 2002.
14. Malić A. Geoprometna obilježja svijeta. *Fakultet prometnih znanosti. Zagreb*. 1995.

15. Perišić R. Savremene strategije i tehnologije razvoja transporta- koridori X i VII. logistika i informatika. Institut tehničkih nauka SANU. Zavod za logistiku. projektovanje i inženjering TRANSLOG. Beograd. 2002.
16. Županović I. Tehnologija cestovnog prijevoza. Fakultet prometnih znanosti. Zagreb. 2002.
17. Dundović Č. Lučki terminali. Sveučilište u Rijeci. 2002.
18. Zelenika R. Prometni sustavi. Sveučilište u Rijeci. 2001.
19. EU Transport in figures. Statistical Pocketbook. 2018. Mobility and Transport. European Union. 2018.
20. Annual report 2017. Hupac Group. Available from: <http://www.hupac.com/EN/Annual-Report-f139ec00>
21. HUPAC. Hupac Group Network. Available from: <http://www.hupac.com/EN/Network-b9f5db00>
22. UIRR Report. 2017-18. European Road-Rail Combined Transport. UIRR s.c.r.l., Brussels, c/o Ākos Ērsek.
23. Energy, transport and environment indicators. 2018. Statistical Books. Eurostat. European Union. 2018.
24. Road Statistics. Yearbook 2017. ERF. European Union Road Federation. 2017
25. Vehicles in use Europe 2018. ACEA Report. European Automobile Manufacturers Association. 2018.
26. Mostert M. Limbourg S. External costs as competitiveness factors for freight transport – a state of the art. 2016. Available at <https://orbi.uliege.be/>
27. Van Essen H. Schrote A. Otten M. External Cost of transport in Europe. Update Study for 2008. Delft. 2011.
28. UIRR Report. 2017-18. European Road-Rail Combined Transport. UIRR s.c.r.l., Brussels, c/o Ākos Ērsek.
29. Review of maritime transport 2018. United nations conference on trade and development. United Nations. New York and Geneva. 2018.
30. Transport in the European Union. Current Trends and Issues. 2019. Mobility and Transport. European Commission. March 2019.
31. Brnjac N. Badanjak D. Dalić D. Impact of intermodal technologies on development of port system. časopis Promet- Traffic & Transportation. Vol. 18. 2006. No. 2. 95- 98. Fakultet prometnih znanosti. Portorož. Trieste. Zagreb. 2006.
32. Dujmović N. Rotim F. Die intermodale Kooperation Schiene- Straße- Schiff am Beispiel der Südosteuropäischen region. Suvremeni promet. god. 23. 2003. br. 3- 4 (229- 235).
33. Dvorski S. Vranešević T. Dobrić D. Prometni koridori i njihova uloga u međusobnom povezivanju. Suvremeni promet. god. 24. 2004. br 1- 2 (31- 36).
34. Twrdy E. Container traffic in European port. časopis Promet- Traffic- Traffico. Vol. 16. 2004. No. 2. 111- 115. Fakultet prometnih znanosti. Portorož. Trieste. Zagreb. 2004.

# THE DECISION TO USE PUBLIC INTERNET SERVICES TO ACCESS DIGITAL CONTENT IN THAILAND

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## ABSTRACT

*This study applies a multinomial discrete choice model and the generalized maximum entropy (GME) estimation method to examine factors for determining which free public Internet services that Thai people decide to use to access essential digital content. Thai government currently provides three free services to Thai citizen which are (i) free usage of some applications on mobile broadband, (ii) Internet centers provided by the Universal Service Obligation (USO) and (iii) free Wi-Fi on the street. The dataset utilised in this study consists of 6,537 observations which are collected from field surveys covering all regions of Thailand. Each observation contains the characteristics of potential users and their decisions toward choices of public Internet service. The results indicate that urban people with the age above 20 years and low income are more likely to choose the free applications on mobile broadband. Females are the target for the USO Internet center. However, the free Wi-Fi service is not a preferable choice for Internet users who are living in the city.*

**Keywords:** *Internet access, digital content, public Internet, decision, choice model*

## 1. INTRODUCTION

The government of Thailand promotes the free Internet access to people all over the country by the investment in optical fiber infrastructure to bring broadband Internet to all villages especially in the remote area. The investment uses huge amount of budget. This investment will be wasteful if the Thai people do not use the Internet. The free Internet access includes three options. First, the usage of some free applications on mobile broadband. For this option, the government subsidizes the usage by paying money to the telecommunications operators according to the amount of usage or the lump sum amount. Second, the establishment of Internet centers which are equipped by personal computers and fixed broadband. This choice is under operation according to the Universal Service Obligation (USO) provided by the National Broadcasting and Telecommunications Commission (NBTC). Third, local government provides free Wi-Fi on the street along the main highways to certain location in the remote area or tourism destinations. The internet, computer, and mobile phones usages of Thailand which was reported from the National statistical office of Thailand between 2014 to 2018. It showed the percentages of mobile usages were slightly increasing as well as the percentages of internet usages. However, the percentages of computer usages were decreasing during those years. The percentages of mobile usages were increasing by 77.2, 79.3, 81.4, 88.2, and 89.6 percent respectively. The percentages of internet usages were increasing by 34.9, 39.3, 47.5, 52.9, and 56.8 percent respectively. While, the percentages of computer usages were decreasing by 38.2, 34.9, 32.2, 30.8, and 28.3 percent respectively. In 2018, around 94.7 percent of the internet users go online via mobile phones far the exceeding rate from other devices. The rate of internet access via personal computers, laptops, and tablets were only 38.8, 16.6, and 6.9 percent



respectively (National statistical office of Thailand, 2019). Since the high growth of internet usage, the government of Thailand would encourage and provide a free internet access to people. This would certainly enhance the economy in terms of the efficient supports for all transactions and activities via devices such as mobile phones, tablets or computers, for an example, an increasing of any e-commerce. According to Electronic Transactions Development Agency of Thailand or ETDA, the value of Thai e-commerce in 2017 was 862 billion U.S. dollars or about 7.91 percent growth from the previous year (Value of e-Commerce Survey in Thailand, 2018, p. 37). Thailand's B2C, or business-to-consumer sector is one of the highest values in ASEAN that was about 23.30 billion U.S. dollars in 2017. The second-largest to the lowest e-Commerce values was Malaysia, Vietnam, Indonesia, Singapore, and Philippines that was 19.41, 8.21, 6.71, 4.61, and 1.84 billion U.S. dollars, respectively. The e-Commerce data of Thailand in 2017 also showed that the growth rate of the B2B (business-to-business) and the B2G (business-to-government) was growing from 2016 by -2.21 and 57.49 percent respectively. The highest shares of the total values of e-Commerce was the B2B with 54.59 percent of shares, the second was the B2C with 27.47 percent of shares, and the third was the B2G with 17.94 percent of shares. This high growth of e-Commerce markets have been consequenced by a rising on Internet access. For empirical works, Roy (2013) examined the difference between male and female teenagers' satisfaction on wireless internet services in Bangladesh using one-way ANOVA analysis. The results suggested that teenagers in Bangladesh had a highly significant of the difference satisfaction level of 24 hours customer care center. Brown et al. (2009) studied the factors influencing consumer choice of internet accesses in South Africa. They found the key factors that influencing the consumer choice are costs of access, support and services, advantages, compatibilities, ease of uses, and prior experiences. The studies about factors affecting the consumer choice of the free internet usage in Asia region such as Ida and Kuroda (2006) studied a demand for four internet access services including the narrow broadband (NB), ADSL, CATV internet, and FTTP in Japan using a discrete choice model. The results showed an income rarely influences consumer choice on the broadband services as the high income consumers would decide to use CATV and FTTP instead of ADSL. Although such other individual characteristics as age, gender, and income are not significant, then the study investigated the access speed. The results also presented that the broadband access services were preferred than nominal speed as their providing an effective speed. Despite an internet access providing, the government needs to find a proper providers who provide a free internet efficiently and satisfied the users' wants. This study investigates whether the Thai are willing to use these public Internet services. It also uses a quantitative method to quantify the factors influencing the decisions to use the services. The results from this study may inform the government to direct the public Internet services onto a more efficient way to attract people to use the services. Hopefully, suggestions from the study may make this huge investment of telecommunications networks fully utilized.

## **2. METHODOLOGY**

To analyze the choice of Internet users in this study, the generalized maximum entropy (GME) is applied. The GME formulation is shown in section 2.1.

### **2.1. Generalized Maximum Entropy (GME)**

The discrete choice models applied in economics studies for predicting an individual choices between two alternatives called binary discrete choice models or more than two alternatives called multinomial discrete choice models. The discrete alternatives are, for an example, a decision to make a choice for using or not using an internet services, or a decision on choosing among the internet providers via the different devices. This study applies the generalized maximum entropy (GME) for multinomial discrete choice model purposed by Golan et al.

)1996( to analyze the differences individuals' choices of free Internet uses among the differences individuals' characteristics and the purposes of Internet usages. Golan et al. (1996) showed the GME estimations be more efficient than the maximum likelihood estimations. GME has avoided the strong parametric assumptions and only the small sample is used for the estimations. Additionally, Soofi (1992) suggested the GME estimators permit the combination between nonsample information in the multinomial probabilities and the response parameters. The multinomial discrete choice models can predict the choices by the maximum likelihood estimation and the maximum entropy. The estimations from those approaches would be equivalent. By the principle of the utility maximization, the probability that the utility of individual  $i$  choosing the alternative  $j$  is related to

$$p_{ij} = \Pr\{y_{ij} = 1 | x_i, \beta_j\} = F(x_i' \beta_j) > 0 \text{ for all } i \text{ and } j \quad )1($$

where  $x_i'$  is a  $1 \times K$  vector containing the alternative attributes,  $\beta$  is a  $K \times 1$  vector of unknown parameters, and  $F(\cdot)$  is a function linking the probabilities  $p_{ij}$  with  $x_i' \beta_j$ , and  $j = 1, \dots, J$  are assumed to be random.  $y_{ij}$  is 1 when the utility of individual  $i$  choosing the alternative  $j$  or  $\sum_j F(x_i' \beta_j) = 1$ .

Following the specified in Golan, Judge, and Perloff (1996), the form for generalized maximum entropy is the estimation problem that maximizing the total entropy. The objective function in scalar form is

$$\max_{p,w} H(p, w) = \max_{p,w} \left( - \sum_{ij} p_{ij} \ln p_{ij} - \sum_{ijh} w_{ijh} \ln w_{ijh} \right) \quad )2($$

subject to the stochastic-moment and normalization constraints, where the condition is

$$\sum_i y_{ij} x_{ik} = \sum_i x_{ik} p_{ij} + \sum_{ih} x_{ik} v_h w_{ijh}, \quad )3($$

$$\forall k_j = 1, \dots, (k + j - 1)$$

and 
$$\sum_h p_{ij} = 1,$$

and 
$$\sum_h w_{ijh} = 1,$$

The first-order conditions are

$$\frac{\partial L}{\partial p_{ij}} = -\ln p_{ij} - 1 - \sum_k \lambda_{jk} x_{ik} - \mu_i = 0 \quad (4)$$

$$\frac{\partial L}{\partial w_{ijh}} = -\ln w_{ijh} - 1 - \sum_k \lambda_{jk} x_{ik} v_h - \rho_i = 0 \quad (5)$$

$$\frac{\partial L}{\partial \lambda_{jk}} = \sum_i y_{ik} x_{ik} - \sum_i x_{ik} p_{ij} - \sum_i x_{ik} v_h w_{ijh} = 0 \quad (6)$$

$$\frac{\partial L}{\partial \mu_i} = 1 - \sum_j p_{ij} = 0 \quad (7)$$

$$\frac{\partial L}{\partial \rho_i} = 1 - \sum_h w_{ijh} = 0 \quad (8)$$

The lagrange parameters are

$$\beta_{jk} = -\lambda_{jk} \quad (9)$$

$$p_{ij} = \exp\left(-1 - \mu_i - \sum_k \lambda_{jk} x_{ik}\right) \quad (10)$$

$$w_{ijh} = \exp\left(-1 - \rho_i - \sum_k \lambda_{jk} x_{ik} v_h\right) \quad (11)$$

For solving these conditions, the estimators are obtained as

$$\hat{p}_{ij} = \frac{\exp\left(-\sum_k \hat{\lambda}_{jk} x_{ik}\right)}{\sum_j \exp\left(-\sum_k \hat{\lambda}_{jk} x_{ik}\right)} = \frac{\exp\left(-\sum_k \hat{\lambda}_{jk} x_{ik}\right)}{1 + \sum_{j=2}^J \exp\left(-\sum_k \hat{\lambda}_{jk} x_{ik}\right)} \quad (12)$$

$$\hat{p}_{ij} \equiv \frac{\exp\left(-\sum_k \hat{\lambda}_{jk} x_{ik}\right)}{\Omega_i} \quad (13)$$

And

$$\hat{w}_{ijh} = \frac{\exp\left(-\sum_k x_{ik} \hat{\lambda}_{jk} v_h\right)}{\sum_h \exp\left(-\sum_k x_{ik} \hat{\lambda}_{jk} v_h\right)} \quad (14)$$

$$\hat{w}_{ijh} \equiv \frac{\exp\left(-\sum_k x_{ik} \hat{\lambda}_{jk} v_h\right)}{\psi_{ij}(\hat{\lambda})} \quad (15)$$

To interpret the result, the effect of a change in an individual's characteristics  $x_k$  is considered. This change is the marginal effects. For an individual who has a probability of an alternative  $j \in \Omega$ , purposed by Bartus (2005), the average marginal effect (AME) is

$$AME_k = \beta_k \frac{1}{T} \sum_{i=1}^T p_i (1 - p_i) \quad (16)$$

For  $x_k$ , a dummy variable, the AME is

$$AME_k = \frac{1}{T} \sum_{i=1}^T \left[ \left\{ x_{ki} p_i (1 - p_i) \right\}_{x_k=1} - \left\{ x_{ki} p_i (1 - p_i) \right\}_{x_k=0} \right] \quad (17)$$

## 2.2. Data

The dataset is from the survey of Internet users of all regions in Thailand. The data are collected in 2018. The sample contains 6,537 individuals. Each respondent would choose what telecom and Internet services by he or she prefer to be provided a free Internet on a smart phone or an Internet by the different providers as a dependent variable, namely, )1( the providers of mobile phone network e.g. AIS, DTAC, TRUE for some applications and websites on a smart phone, )2( Universal Service Obligation )USO( for all activities on an Internet, )3( ICT Free Wi-Fi for all activities on an Internet, and )4( None. The demographic data of an individual used as dummy variables include )1( Internet users who live in an urban area, )2( female, (3) age above 20 years old, )4( single, )5( high education, )6( low income )less than three hundred dollars per month(. The study will explore correlation between the user's choice and the purposes of free Internet usages. The purposes of Internet usages will be determined as explanatory variables in this study consisting with )1( to generate incomes, )2( to reach knowledge and information, )3( to publish the digital contents, )4( access to an entertainment and media e.g. music, movies, online televisions. The descriptions of variables used in this study are shown in Table 1.

*Table following on the next page*

*Table 1: The descriptions of variables.*

Variables	Name	Descriptions
y <sub>1</sub>	Choice of any Free	Users choose free Internet on mobile phone
y <sub>2</sub>	Internet users	Users choose free Internet provided by USO
y <sub>3</sub>		Users choose ICT free Wi-Fi
y <sub>4</sub>		Users do not choose any
<b>Individual characteristics</b>		
x <sub>1</sub>	Urbanization	1 if urban 0 if other
x <sub>2</sub>	Gender	1 if female 0 if other
x <sub>3</sub>	Age	1 if age (teenagers who are less than 20 years old) 0 if other
x <sub>4</sub>	Status	1 if single 0 if other
x <sub>5</sub>	Education	1 if high education 0 if other
x <sub>6</sub>	Income	1 if low income (< three hundred dollars per month) 0 if other
<b>Purposes of Internet usages</b>		
pur <sub>1</sub>	Purpose	to generate incomes Scale 0 – 10 (0 = very low and 10 = highly satisfied)
pur <sub>2</sub>	Purpose	to reach knowledge and information Scale 0 – 10 (0 = very low and 10 = highly satisfied)
pur <sub>3</sub>	Purpose	to publish the digital contents Scale 0 – 10 (0 = very low and 10 = highly satisfied)
pur <sub>4</sub>	Purpose	access to an entertainment and media Scale 0 – 10 (0 = very low and 10 = highly satisfied)

### 3. RESULTS

#### 3.1. The purposes of free Internet usage

The results from the survey data of Internet users are shown in Table 2. The statistics show the average scores for the importance of several purposes of free Internet uses. The Internet users in Thailand who are willing to be a free Internet provided want to use the Internet for reaching knowledges and information and the most. The second importance of the purposes of free Internets uses of respondents is to generate income. To public the digital contents is the last purposes of the free Internet users. The most importance purposes of free Internet used by males is to reach knowledges and information, while those of female is to access to an entertainment and media. Moreover, Table 2 also shows the average scores for the positive and negative effects of all Internet uses. The most positive impact for all Internet users is a broadly connectivity. Whereas, the most negative impact for those is the health problems e. g. digital eye strain and pain, stress, physical pains.

*Table following on the next page*

*Table 2: Average scores from the respondents who prefer a free Internet provided.*

<i>Internet users</i>	<i>Percentages</i>		
Male	38		
Female	62		
<i>Purposes</i>	<i>Average Scores</i>		
	Total	Male	Female
1. to generate income	5.77	5.73	5.80
2. to reach knowledges and information	7.91	7.90	7.92
3. to public the digital contents	4.59	4.45	4.68
4. access to an entertainment and media	7.87	7.76	7.94
<i>Positive effects of Internet usage</i>	<i>Average Scores</i>		
	Total	Male	Female
1. broadly connectivity	8.09	8.07	8.11
2. easily access to resources	7.46	7.48	7.44
3. effective improving languages	6.56	6.49	6.60
4. having greater advantages than non-Internet users	7.82	7.88	7.78
<i>Negative effects of Internet usage</i>	<i>Average Scores</i>		
	Total	Male	Female
1. be always online	2.99	2.80	3.11
2. be not close to a family	2.32	2.20	2.39
3. health problems from the Internet uses	3.88	3.55	4.08
4. an ineffectiveness of working	2.34	2.17	2.44

*Scores from the least importance to the most importance is 0 – 10*

### 3.2. The choices of free Internet providers

The multinomial discrete choice models using generalized maximum entropy )GME( provides the estimates of the parameters as shown in Table 3. Those estimates show that the significant Internet user's characteristics are female, high education, and incomes for  $y_1$ ; the users who will choose the free Internet on mobile phones. Female and incomes are significant for  $y_3$ ; the users who will choose ICT free Wi-Fi. The estimation in Table 3 shows the different individuals' choices of Internet uses. It is revealed as the different characteristics and purposes. As the results, Internet users who prefer the free Internet on mobile phones live in urban areas, age more than 20 years old, and are low-income populations. The implication is, for the example, users living in urban areas are more likely to increase to choose the free Internet on mobile phones with a probability of 0.022 or 2.2 percent. Internet users who are teenagers or less than 20 years old would decrease to choose the free Internet on mobile phones for some applications and websites with probability of 0.031 or 3.1 percent, and the users who are lower-income earners would increase to choose the free Internet on mobile phones with probability of 0.032 or 3.2 percent. Internet users who prefer the free Internet provided by USO most are females. Female Internet users are more likely to increase to choose the free Internet provided by USO with a probability of 0.001 or 1 percent. Internet users living in urban areas prefer the free Internet on mobile phones to ICT free Wi-Fi. Urban Internet users would decrease to choose ICT free Wi-Fi with probability of 0.025 or 2.5 percent.

*Table following on the next page*

Table 3: Estimated parameters

Variables	Generalized Maximum Entropy (Logit)		
	y <sub>1</sub>	y <sub>2</sub>	y <sub>3</sub>
Constant	-0.220*** (0.025)	-0.121*** (0.012)	0.011 (0.026)
x <sub>1</sub>	0.022* (0.012)	-0.005 (0.006)	-0.025** (0.012)
x <sub>2</sub>	-0.002 (0.012)	0.001** (0.006)	-0.001 (0.013)
x <sub>3</sub>	-0.031* (0.019)	0.029 (0.011)	0.014 (0.020)
x <sub>4</sub>	-0.003 (0.015)	-0.003 (0.008)	0.000 (0.015)
x <sub>5</sub>	0.015 (0.014)	-0.002 (0.007)	-0.017 (0.014)
x <sub>6</sub>	0.032** (0.015)	-0.002 (0.008)	-0.024 (0.015)
pur <sub>1</sub>	0.010*** (0.002)	-0.002** (0.001)	-0.002 (0.002)
pur <sub>2</sub>	-0.001 (0.003)	0.001 (0.001)	-0.001 (0.003)
pur <sub>3</sub>	0.003 (0.002)	0.003*** (0.001)	0.001 (0.002)
pur <sub>4</sub>	0.010*** (0.003)	0.007*** (0.001)	0.001 (0.003)

Partial effect for dummy is  $E[y/x, d=1] - E[y/x, d=0]$

Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Additionally, the results show the different purposes among the individuals' choices. Internet users use Internet for earning would prefer the free Internet on mobile phones to ICT free Wi-Fi. Those who use Internet for earning incomes would increase to choose the free Internet on mobile phones with probability of 0.010 or 1 percent. Those who use Internet to access entertainment and media would increase to choose the free Internet on mobile phone with probability of 0.010 or 1 percent.

#### 4. CONCLUSION

The results of the study indicate that Internet users' demographics that affect choices on the free Internet providers are urban people, high education, and low income. Users who are female, high education, and high income are more likely to choose the free Internet on mobile phones. Users who are female and high income also are more likely to choose ICT free WiFi but with lower probability than the free Internet on mobile phones. In addition, Internet users choose different free Internet providers for different purposes of usage. This indicating an each of the providers have a different purpose for generating income, getting knowledge and information, publishing the digital contents, or access to an entertainment and media. The results indicate that urban people with the age above 20 years and low income are more likely to choose the free applications on mobile broadband. Females are the target for the USO Internet center. However, the free Wi-Fi service is not a preferable choice for Internet users who are living in the city.

## LITERATURE:

1. Bartus, T. (2005). Estimation of marginal effects using margeff. *Stata Journal* (p. 309–329).
2. Brown, I., Letsididi, B., and Nazeer, M. (2009). Internet Access In South African Home: A preliminary Study on Factors Influencing Consumer Choice. *The Electronic Journal on Information Systems in Developing Countries* (p. 1-13).
3. Corral, P., Terbish, M. (2015). Generalized maximum entropy estimation of discrete choice models. *The Stata Journal* (p. 512 -522).
4. Golan, A., Judge, G., and Perloff, J. M. (1996). A maximum entropy approach to recovering information from multinomial response data. *Journal of the American Statistical Association* (p. 841-853).
5. Greene, William. (2003). *Econometric Analysis* (5th ed). New Jersey: Pearson Education.
6. Ida T., Kuroda T. (2006). Discrete choice analysis of demand for broadband in Japan. *Journal of Regulatory Economics* (p. 5–22).
7. Judge, George et al. (1988). *Introduction to the Theory and Practice of Econometrics* (2nd ed). New York: John Wiley & Sons.
8. National Broadcasting and Telecommunications Commission. (2018). *Value of e-Commerce Survey in Thailand 2018*, 1, 146 pages.
9. Roy, P. (2013). Wireless Internet Service and Customer Satisfaction: A Case Study on Young Generation in Bangladesh. *Asian Journal of Applied Science and Engineering* (p. 96-102).
10. Soofi, E.S. (1992). A Generalizable Formulation of Conditional Logit with Diagnostics. *Journal of the American Statistical Association* (p. 812-816).



# NATURALISED UNITED STATES CITIZENS AND PRESIDENCY – WHY NATURALISED CITIZENS SHOULD BE ALLOWED TO RUN FOR PRESIDENT

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## **ABSTRACT**

*The United States of America is currently undeniably the world's greatest economic and military superpower. This position allows US political leaders to fundamentally and decisively influence affairs the world over, as well as on the national level – because of the United States' presidential system, the person chosen for the position is responsible, by their leadership abilities, personality and determination, for the fates of millions of their compatriots. However, the Constitution allows the office of the President to be held by a given person for a maximum of two 4-year terms – and only by a so-called natural-born citizen. This bars a large portion of citizens access from this highest of offices, most notably first generation naturalised immigrants. The American people are intimately attached to the principles of democracy, which is considered one of the defining pillars of the American nation. For this reason, the viability of that particular constitutional record has been debated for many years, as it fundamentally limits the rights of some Americans.*

**Keywords:** *Constitution, democracy, immigrants, president, United States of America*

## **1. INTRODUCTION**

The United States constitution ensures the tripartite division of power. According to the founding document, the legislative branch is represented by the Congress, the executive – by the President, and the judicial – by the Supreme Court. However, the President is given the most power individually-in the remaining two branches power is more divided between people. Elected in the democratic process, the President appoints the members of his cabinet, the Vice President and secretaries. The latter control their respective departments, and by extension subdepartments, delegatures and various offices, which all constitute the federal administration. That federal administration is responsible, among others, for the economic and defense policies of the country – with the President at the helm. The President is also the Commander-in-Chief and a representative of the people equivalent to the Congress. He or she is also the leader and the initiator of foreign policies. Compared to the same office in the parliamentary system of most European countries, the President of the United States plays a larger and significantly more important role, which is why the American political system is also called the presidential system. As evidenced by the U.S. history, much depends on who currently resides in the Washington White House. One person's negotiating skills, general charisma, political acuity, decisiveness and involvement influence the fates of multiple generations of U.S. citizens. Importantly, America is a nation extremely attached to democracy, to the point when even an accidental or very minor violation of its rules is treated as a serious offence or indeed an outright crime. For these reasons, the issue of Article Two of the Constitution – which states that only a natural-born citizen may become the President of the United States – has long been raised in

political discussions. This particular record in the founding document, as currently interpreted, denies this right to naturalised citizens, i.e. in most cases first generation immigrants, and has for many years prompted the discussion over whether or not it is outdated and in conflict with the spirit of democracy.

## **2. LAND OF IMMIGRANTS**

America is literally the land of immigrants. Most citizens, except Native Americans, are descendants of people who came here from various countries across the globe. Immigration has been and continues to be a major source of population growth. The society of the United States is multicultural, and many people take pride in diversity that exists here. Undoubtedly, it was these various waves of immigration that shaped the country into what it is today and thousands of people are still choosing America as their new home and becoming citizens through the process of naturalization. By this, they become eligible to vote as well as to run for public offices or to apply for various government jobs – with the one notable exception. Article Two of the Constitution lists the requirements for eligibility to become the President of the United States – among them, being a natural-born citizen. The so-called natural-born-citizen clause makes it impossible for many skilled and loyal Americans to ever become president. This law was established back during the Constitutional Convention (which took place from May 25 to September 17, 1787) and does not reflect the needs of American society any more. It makes one group of citizens more privileged than others, merely on the basis of their place of birth. As Robert Post states in *What is the Constitution's worst provision?*, 'Under our Constitution, a naturalised citizen stands on an equal footing with the native citizen in all respects, save that of eligibility to the Presidency.' (Post R., 1995) This one difference can influence the overall situation of and attitude towards naturalised citizens, by putting emphasis on where they were born instead on what they do. The natural-born-citizen clause is outdated and should be changed to allow naturalised citizens to become president, as it would promote justice and equality for all.

## **3. THE REASON FOR ARTICLE TWO**

To understand why there was the need to include such requirement at the time when the Constitution was adapted, it is important to take into account the circumstances. It was not long after the American Revolutionary War (1775–1783). Americans desired to ensure their independence from Great Britain and all other European countries. At the time, democracy was not a concept as widespread across the globe as it is now; in Europe, for example, the most popular system of government was still monarchy. The Framers – the fifty-five representatives from the various states who took part in the drafting of the Constitution – intended to ensure that no wealthy foreign noble or royalty would buy his way into presidency, especially since the president is also Commander-in-Chief. By only allowing natural-born citizens to assume this office, the Framers made certain that the Head of State would be loyal to the United States alone. Nowadays, however, the prospect of a foreign prince buying his way into presidency is hardly a viable threat; conversely, a person who is a natural-born citizen might also be disloyal. Ultimately, it is the responsibility of the American voters to prevent disloyal candidates from attaining presidency, and the entire system would operate equally well if naturalised citizens were allowed to be candidates.

## **4. THE SELECTION OF PRESIDENTIAL CANDIDATES**

Naturally, changing this law would not automatically cause a random naturalised citizen to immediately become president. First of all, not every immigrant becomes a citizen; the road to American citizenship is not easy, and the further stage to indeed become president would be still more difficult.

In order to be elected, a candidate must complete several steps. With the way the elections are conducted in America, with its bipartisan system and the Electoral College, they would first have to be chosen as a candidate from one of the two major parties, the Republicans or the Democrats, in preliminary elections, since historically the probability of winning the presidential race as an independent or third-party candidate has been close to zero. Further, the candidate must win in popular elections and obtain enough electoral votes. The electors casting their votes is usually little more than a formality, but this step was also established as an additional safety policy to ensure that a proper candidate attains position, as well as to grant each individual state a voice, especially taking into account the less populous ones, which might not have gathered enough individual votes from the citizens themselves. Generally, members of minorities stand little chance of being elected, and an immigrant is still less likely to win. History proves this, with every president so far having been white and Protestant – with two recent exceptions: Barack Obama, an African American, and John F. Kennedy, who was Catholic. If a foreign-born person intended to become the president, he or she would have to dedicate their entire life to it, and put tremendous amount of efforts into this endeavor, and therefore, the power that comes with presidency would most likely be appreciated and used wisely. It is also important to note that every new citizen pledges allegiance to America at the end of the process of naturalization.

### **5. NATURAL-BORN CITIZEN – AN UNCLEAR TERM**

Another problem arises when one tries to determine who in fact counts as a natural-born citizen. It is relatively clear what a naturalised citizen is – in short, a person who obtained citizenship at a certain point in their life. Natural-born citizen, on the other hand, while it is a term used in the Constitution, it is never defined there. Most people interpret it as ‘a person who was a citizen at the time of birth’, meaning anyone born to at least one American parent or on U.S. soil, including American foreign territories, the latter being less popular as a standalone criterion. This approach means that a person born to American parents but abroad would not count as natural-born citizen and therefore would not be eligible to become the President of the United States. Debate over this arose several times, most recently in the 2016 elections, when an American politician, Ted Cruz (born December 22, 1970, to American parents in Canada), attempted to become the Republican candidate for president. A different, yet somewhat similar situation arose in 2008, before Barack Obama was selected. Again, it was the place of birth that was at the heart of the discussion instead of factors on which Obama could have had any real influence. While considering candidates, it is reasonable to assume that the focus ought to be on their behaviour, skills and qualifications instead of on their birthplace and on whether or not they fit the already ambiguous definition of a natural-born citizen. Importantly, naturalised citizens are allowed to take on many responsible positions in every branch of government, from Supreme Court justices, through state governors, to the Speaker of the House. Being from another country is by no means a disadvantage; indeed, it could lend an individual an even broader view, a deeper insight or a tendency to devise more innovative solutions, all skills which are not necessarily available to a limited view of an ‘insider’.

### **6. IMMIGRANT CHILDREN**

There is also a different type of immigrant – a person who came to the United States at a very young age and has only ever known America. Those might be children who immigrated with their parents or who were adopted from a foreign country. In such cases, they may not even remember their country of origin, nor speak its language, they may not even know their biological parents if they were adopted. They are Americans in everything but birth – and as such, denying them the chance at presidency seems baseless. Let us consider another hypothetical situation: a married couple moves to America with their baby son to work for a

major company. Eventually, they attain the status of permanent residents and even become naturalised citizens. Then, at some point, they have a second child, a daughter. Later on, the company delegates them to work as representatives in the country of their origin, so they move back there. At that point, their third child is born – another son, abroad, but to American parents, as they both attained American citizenship several of years before. In this hypothetical, all three of their children are raised together by the same family, and yet should it come to the matter of presidency, each of them is arbitrarily put in a different situation. The oldest son, as a naturalised citizen, may never be president, the second oldest – the daughter – is a natural-born citizen, so she does qualify. As for the youngest son, he may or may not qualify depending on the interpretation of the term ‘natural-born citizen’. It seems to defy logic to disqualify one sibling while allowing his sister to run for the office. While this is merely a hypothetical situation, ‘thousands of children born abroad and subsequently adopted by American citizens are barred from the presidency, despite their “automatic” citizenship by virtue of the Child Citizenship Act of 2000. Nor can naturalised citizens – like Henry Kissinger, Madeleine Albright, Arnold Schwarzenegger, and Jennifer Granholm – become President. There is even some question about whether the biological children of American citizens, born abroad, can become President and whether American Indians, born on U.S. soil, qualify as natural-born citizens’ (Seymore, 2005).

## **7. THE SPEAKER OF THE HOUSE TWIST**

The office of the Speaker of the House makes the situation all the more interesting. If the President of the United States of America passes away or is otherwise unable to carry out his or her duties, the authority is carried over to the Vice President. Should, however, a similar situation also befall the Vice President, the power is supposed to rest in the hands of the Speaker of the House. However, as mentioned before, this particular position can be held by a naturalised citizen. In such an event, if the Speaker were a naturalised citizen, the presidential power would belong to a non-natural-born citizen. While there has been no such precedent, it could well happen, and it is not clear how it would be handled; perhaps the Supreme Court would have to make a statement, or the Speaker would carry out the presidential duties until the following election, where he or she would not be allowed properly run for the office. There would be no such complication if the natural-born-citizen clause were not in force.

## **8. AN EXCEPTION IN THE CONSTITUTION**

The Framers themselves created an exception to their own rule, where a naturalised citizen born abroad could become president. It can be found in Article Two, Section 1, where it is stated, as quoted by Post, that ‘No person except a natural-born Citizen, or Citizen of the United States at the time of the Adoption of this Constitution, shall be eligible to the Office of President (...)’. This means that if someone was a citizen when the Constitution was being adapted, he could become president whether he was a naturalised or a natural-born citizen (Yinger J., Spalding M., 2005). Naturally, this exception no longer applies, but this statement in the constitution shows that even the Founding Fathers saw that under specific circumstances a naturalised citizen might make a good president, and deemed that fact worth mentioning in their statement. They also could also not have predicted the circumstances of today, so they allowed for the possibility of amending the Constitution to accustom it to the needs of the times.

## **9. ATTEMPTS TO CHANGE THE NATURAL-BORN-CLAUSE**

There have been several unsuccessful attempts to remove the natural-born-citizen clause. Two of the better-known ones were supposed to allow Henry Kissinger and Arnold Schwarzenegger to be presidential candidates. In an issue of Time Magazine from the 1970s one can read that ‘(...) it was no surprise when the most recent Gallup poll asking Americans to name the man

in the world they most admired came out with Kissinger in first place, beating out President Nixon, who had topped the list for the previous four years. But admiration can never be translated to elective eminence for Kissinger' (President Kissinger?, 2004) because he was born in Germany. If he was so widely admired, his supporters would have no reason to mind the fact he was born in Europe and vote for him if given the chance. There have also been attempts at proving that the Equal Protection Clause of the Fourteenth Amendment – which states that every citizen, naturalised or natural-born, is equally protected by the law – supersedes the natural-born citizen clause, as not allowing some citizens to become the president is a form of discrimination on the basis of national origin. Many who oppose allowing naturalised citizens the chance at presidency argue that it is disallowed in the Constitution – this is, of course, true, and amending the Constitution should never be taken lightly, as 'changing the natural-born requirement of Article II for inclusive reasons could be used by others, with less enlightened goals' (Miller D., 2018). While it is true that the law could be misapplied, amendments are allowed to change the law should such a need arise, and it has happened in the past – it required an amendment, to name but one example, to allow women and African Americans the vote (Ratcliffe D., 2013). With millions of naturalised citizens currently residing in America, the need to make them truly equal certainly exists, and an amendment could make this a reality. This issue could easily get overshadowed by the discussion over immigration, both legal and illegal, as naturalization is inevitably tied to immigration. However, this matter is not so much about immigration itself, but rather about equal opportunity among citizens. Immigrants and their stories are as diverse as all the countries from which they come, but once they legally become citizens of the United States, they all become tied together by the same motherland. Even the current First Lady and wife of President Donald Trump, who is known for his strict views on immigration, was born in Slovenia.

## 10. CONCLUSION

The natural-born citizen clause should be amended for many reasons. It restrains certain citizens by not granting them equal opportunity if they choose to pursue a career in politics. It also promotes a view of an inferior naturalised citizen, by the sole fact that they will never be 'good enough' to take on the responsibility of being the Head of State, no matter what their actions and accomplishments. Amending the Constitution always requires consideration, but it is important to change the laws to accommodate the times. Citizens should be judged by their actions, not by their country of origin; no person can decide where they are born, but they certainly can decide where their home is and where their loyalties lie. When it comes to the United States of America, it is the latter that ought to determine the eligibility to run for president.

## LITERATURE:

1. Miller D., (2018), *Comments on an Amendment to Repeal the Natural-Born Citizen Clause*, Inside Duke Journal of Constitutional Law & Public Policy, retr. 30.04.19, from <http://link.galegroup.com.ezproxy.csupueblo.edu/apps/doc/A574177309/AONE?u=usc&sid=AONE&xid=ee0e0636>
2. Post R., (1995), *What is the Constitution's worst provision?*, Inside Constitutional Commentary, pp. 191-193, retrieved 30 Apr. 2019. <http://link.galegroup.com.ezproxy.csupueblo.edu/apps/doc/A17155123/AONE?u=usc&sid=AONE&xid=17f0bb24>
3. Ratcliffe D., (2013), *The Right to Vote and the Rise of Democracy, 1781-1828* Journal of the Early Republic, vol. 33, no. 2, pp. 219-254. *EBSCOhost*, doi:10.1353/jer.2013.0033.

4. Seymore M., (2005), "*The Presidency and the Meaning of Citizenship.*" Brigham Young University Law Review, no. 4, pp. 927-997. *EBSCOhost*, [search.ebscohost.com/login.aspx?direct=true&db=aph&AN=19856923&site=ehost-live&scope=site](http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=19856923&site=ehost-live&scope=site).
5. Yinger J., Spalding M., (2005), *Should naturalised citizens be President? The constitution says that on 'natural-born' citizens can be President. Should we change that?*, New York Times Upfront, p. 28. *Academic OneFile*, <http://link.galegroup.com.ezproxy.csupueblo.edu/apps/doc/A128791199/AONE?u=usc&sid=AONE&xid=fbd7059c>. Accessed 30 Apr. 2019.
6. *President Kissinger?*, (2004), Time Magazine, vol.103, no.9, Mar. 1974, p.16. *EBSCOhost*, [search.ebscohost.com/login.aspx?direct=true&db=aph&AN=53816458&site=ehost-live&scope=site](http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=53816458&site=ehost-live&scope=site).

# THE IMPACT OF CSR ON CORPORATE COMMUNICATION: A STUDY OF CENTRAL DANONE, MAROC

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## **ABSTRACT**

*The purpose of this paper is to investigate the effectiveness of corporate communication in the light of the inter-relatedness of brand image, identity, reputation and social responsibility. Consistency in communicating with the different constituencies or stakeholders is of paramount importance if a company wants to build, enhance, and maintain its identity, image and reputation. When a company fails to have a fully coordinated communication strategy within the organization, its image and reputation are put at risk. Our case supports this affirmation through an analysis of a boycott crisis that targeted an international leader in dairy products in Morocco. It illustrates the role of social responsibility as a corporate strategy to maintain corporate reputation and brand image among consumers and how effective corporate communication supports paving the way for brand image to be re-established after such brand damage has been caused.*

**Keywords:** *Brand image, brand identity, corporate reputation, corporate communication and social responsibility*

## **1. INTRODUCTION**

Communication is the backbone of any organization. Through it, organizations operate and acquire all the necessary resources (primary and secondary)<sup>1</sup>. It is at the heart of corporate performance and constitutes a system that entails multiple strategies and tactics with the objective to communicate with stakeholders and diffuse messages through different channels such as marketing communications, public relations, employee communications, etc. Organizational communication also incorporates all types of institutional communications that a system makes to influence how matters are structured and managed as well as the public debate that results from it. Generally, corporate communication encompasses the ventures the company undertakes to enforce its adherence to the values “social responsibility” and “good citizenship”. In this regard, corporate communication is one of the pillars of any productive organization. Over recent years, companies have found themselves in a competitive environment where they no longer have the choice to just buy, sell or perish but to communicate in order to secure shares and develop their activities. However, in order to be effective, this communication must be the subject of in-depth reflection that should result in a strategy in the

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<sup>1</sup> Primary such as raw materials and secondary such as reputation etc.

form of an action plan that should enable the company to deploy an effective corporate communication strategy. As companies encounter various challenges, they become aware of the need to overcome fragmentation and minimize the degree of inconsistent communication. The process through which such a strategy is deployed is called “*integrated communication*”. The latter entails a systematic process that leads to a well-established, homogenous communication policy. The failure to build up an integrated communication strategy will immediately affect the organization’s image and put its reputation at risk. Overall, a strong corporate communication protects the organization’s brand, starting from its image to its reputation as detailed in section 1 below. In order to last in a competitive environment by sustaining corporate brand image, an organization is challenged to put in place a harmonious communication system. In addition, Goodman (2000) stresses that the main objective for strategic corporate communication is to communicate effectively. Thus, the organization should master how to integrate business-related activities such as: corporate brand image advertising, marketing, information systems, research and development and public relations, etc. (Harris & Jennings, 1986). Additionally, effective communication brings a number of benefits to the organization like consumers’ trust and global brand awareness. Generally, corporate communication is regarded as a positive contributor to a company’s performance and reputation. In the present paper we examine the importance of corporate communication in reflecting an organization’s identity and image and the vital role it plays in projecting the organization as a social actor (CSR) to sustain and improve its brand reputation. This study elucidates the case of Centrale DANONE Company and points out the flaws in its corporate communication referring to its recent crisis, which was mainly due to Centrale DANONE’s inadequate response.

## **2. CORPORATE COMMUNICATION**

Corporate Communication (henceforth, CC) is understood as a management instrument that coordinates all the different forms of internal and external communication of a company with its stakeholders (Van Riel, 1995). In order for companies to develop a solid genuine identity, they need to communicate their missions, services, products and functions properly to deliver accurate messages to all their stakeholders. Corporate communication is also perceived as the link that holds the company’s identity and image together and entails all the forms with which the company communicates with its different stakeholders (Melewar & Karaosmanoglu, 2006a). Furthermore, CC outlines various approaches companies adopt to communicate their identities. It generally entails anything the company does starting from the way phones and emails are answered to the participation and engagement of its employees in community matters. A company’s name, logo, vision, mission statement, events, etc. make up the components of the corporate communication. Van Riel (1992) elucidates the fact that corporate communication is of two types: controlled and uncontrolled communication. The first suggests that communication is planned and purposefully managed with the goal of enhancing the stakeholders’ relationships. It can be management communication, marketing communication and organizational communication. However, the second type entails unintentional conceptions and visions that affect stakeholders without the company’s intention. Communication, in all its various forms, is a necessary tool for companies to ensure that their identity is properly reflected and the image all stakeholder levels have is what they primarily project. Overall, no organization could evolve without establishing an image for itself that reflects its identity and allows it to sustain itself to face competition.

### **2.1. Brand image, identity and reputation**

Nowadays, establishing a corporate image and identity is viewed as one of the most challenging and essential missions for a company. According to Westberg (1994) creating and maintaining



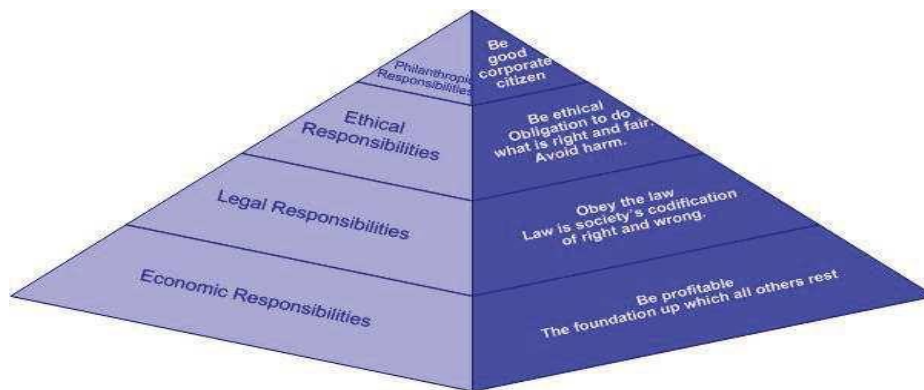
an appropriate image for an organization signifies a proper understanding of what image it will serve best and how to strengthen that targeted image. In fact, corporate image depends on the perception of the public. It is about how the public views the organization and the beliefs it holds about its customer base. Corporate identity, on the other hand, is also essential as it concerns a company's visual appearance such as the company logo, website, and reports, be they in print or in electronic format. Thus, corporate identity and corporate image are slightly different but interrelated and both are critical when establishing a company's brand name in the market. According to Roberts (2000), identity is who you genuinely are and the image is the level of people's understanding of this reality. Therefore, corporate image is "the cumulative effect of all visual elements that represent a company and leave and produce the very first impression" (Hook, 1999; p.281). Following Hook, Argenti (1998) argues that corporate image is a reflection of the company's reality and the way the general public perceives the company. Generally, public relations professionals watch over the corporate identity and promote it in order to develop a righteous image in people's mind. Consequently, we witness during the last decade that most companies start developing crisis communication plans to handle any sudden situation that may arise and that could eventually damage the image of the company in the market. Ignoring how to manage brand image and identity as key components of corporate communication results in damaging the brand reputation severely. This being the case, corporate reputation is an important intangible asset for organizations (Thiessen & Ingenhoff, 2011). It entails the stakeholders' attitudes and judgments towards the company, be they good or bad. A company endeavors to manage and protect its reputation. For example, an organism with a poor reputation could consider engaging in actions that will help enhance its reputation. Nevertheless, companies with good reputation get also involved in actions that are framed specifically to maintain and upgrade its reputational effect. "Companies engage in the explicit reputation-building activities such as advertising or public relations in order to improve their companies' reputation" (Fombrun, 1996). Respectively, brand image, identity and reputation are complementary and are the starting point for developing the corporate communication strategy. Besides, one of the recent corporate strategies that contribute to reputation building, aside from advertising and public relations, is Corporate Social Responsibility, which has become a crucial part in corporate communication.

## **2.2. Corporate Social Responsibility (CSR)**

Corporate communication and social responsibility are two main complementary components in an organization. CSR was first initiated by the Ford family of the Ford Motor company who affirmed that their company highly regarded all its stakeholders<sup>2</sup> interests and satisfaction including employees and shareholders. As stated in Meredith (1999), Ford Motor company declared that its primary objective is "...to find ingenious new ways to delight consumers, provide superior returns to shareholders and make the world a better place for us" (Meredith 1999, p. 157). Effectively, Ford Motor Company was the first corporation that has integrated CSR in its business practice. However, from a research perspective, a great number of researchers claim that CSR has been first introduced in the research field by Howard Bowen in his *Social Responsibility of the Businessman* publication in 1953 (Carroll 1979; Wartick and Cochran 1985). Bowen (1953) argues that CSR is a social obligation and insists on the imperative contribution of a company in strengthening the values of society and achieving its future objectives. Thus, a business practice is perceived as a social actor that is fully engaged in community service. Carroll (1979) further develops the social obligation of an organization by establishing CSR pyramid (see figure 1 below) that includes the four main stages of the CSR obligations. The first is with economic interest. Indeed, it has to do with the fact that companies are expected to provide goods and services that the society in which they are operating needs

<sup>2</sup> Stakeholders include consumers, employees, community, investors, suppliers etc.

and sells them at a profit. The second stage is of legal concern and entails that the company should adhere to societal laws and regulations. The third level of the CSR pyramid focuses on the ethical responsibility that can be portrayed as societal expectations of a business in addition to legal obligation. Last but not least, the philanthropic stage is viewed as the voluntary roles and the desires to engage in social actions that are not officially ordered nor are they demanded by law. Altogether, the CSR pyramid encompasses the four stages of social responsibility that society expects companies to perform. Carroll (ibid), however, asserts that the four mentioned categories are not restricted and are exclusively linked.



Carroll's CSR Pyramid

Figure 1: Carroll's Pyramid Model

Corporate communication is the voice of companies through which CSR is demonstrated. Nowadays, enterprises find themselves under the obligation of publishing more information on the social and environmental actions and activities they undertake to publicize their social engagement. CSR and corporate communication are knotted and both are strategic for organizations and should be aligned with the corporate strategy. CSR communication can influence the stakeholders' perception in different ways. Generally, affecting the stakeholders through CSR programs and actions depends on the company's ability to communicate with and get approval from them. Andriof and Waddock (2002) state that CSR communication should have the interaction and dialogue between consumers and the company as its focal point to prove that the company is concerned about its consumers' needs and that it is vigilant about their desires. Overall, we define CSR communication as a process adopted by companies to transfer transparent and true messages to the general public and stakeholders proving their societal and environmental engagements in compliance with their CSR policy. The delivery of such messages can be executed through different communication channels. For example, some companies might resort to their website to display the information; others might focus on press releases or social media platforms. Yet, there are many forms of communication channels that a company can opt for.

### 2.3. The link between corporate communication, CSR and corporate reputation

The foundation of a solid reputation occurs when a company's identity and image are aligned. Reputation is built over time and is not simply a perception at a given time, it is the product of both internal and external constituencies, and it represents a competitive factor for companies that helps them to be different from each other. Thus, corporate communication is a key element in shaping corporate reputation; communicating coherent and credible messages throughout all the corporate platforms is vital when establishing a solid corporate reputation and trust among stakeholders.

Besides advertising and public relations as a means to construct corporate reputation, CSR has proved itself to be the most efficient instrument in building up and maintaining a company's reputation. Indeed, setting up CSR projects supports an organization in cultivating an enhanced reputation among internal and external stakeholders. As a corporate communication practice, CSR brings great benefits for the business organizations. Activities such as environment-oriented responsibilities, community-oriented responsibilities, customers-related' activities and legal responsibilities pave the way for the organization to distinguish itself among its market competitors, strengthen the bond with its stakeholders, both its customers and employees. Thereby, organizations must communicate their CSR activities in order to take advantage of a strengthened corporate reputation. This, in fact, leads us to brand image and identity as being the pillars for corporate reputation. To summarize, any business organization that targets growth and profitability has to consider the representation of its brand image, identity and reputation as well as CSR in the interest of having an effective corporate communication.

### **3. CSR: THE CASE OF CENTRALE DANONE**

As the sections above investigated the literature of the study covering corporate image, identity, reputation and their relation to corporate communication. The below section will briefly introduce the case study which is about Centrale DANONE and how it approaches corporate communication and displays its social responsibility, brand image and identity.

#### **3.1. Brief overview of Centrale DANONE**

Centrale DANONE, formerly known as Centrale Laitiere is a Moroccan company, a leading producer of milk and dairy products in Morocco. With the acquisition of 90% of its shares, It has become a subsidiary of the French multinational DANONE since 2012. Centrale DANONE was part of ONA group which merged with SNI in 2010 and officially became Al Mada group in March 2018. It has a capital of 94,200,000 dirhams. Since its creation in 1940, it started its activity at the Casablanca factory, producing milk since 194, and its derivatives since 1957. It has developed over the years and was introduced into the stock market in 1974. Ut then expanded its activities to new products through its two subsidiaries Pingouin (first producer of ice cream in Morocco) and Fromageries des Dokkala (operator in processed cheese market). However, on April 20, 2018, the company had to face a public boycott campaign on social networks.

#### **3.2. Corporate Communication at Centrale DANONE: subsidiary vs headquarters**

Centrale DANONE is a global company operating in more than 120 countries across the five continents. Thus, corporate communication is a vital aspect for the company. As far as DANONE Morocco is concerned, unfortunately there is not much information about the corporate communication of the company within Morocco. The country's website does not display any organizational chart or a clear structure of the departments it consists of and their managing board; unlike the website of the headquarter company in France, which plainly displays its corporate communication chart and other functional divisions in the company. Nevertheless, after several research attempts, we found out that Centrale DANONE Company's structure in Morocco comprises a Corporate Affairs and Communication <sup>3</sup> department. It is important to mention that the publications, press releases and reports are available to the public under the Media section. As stated above, failure to find the organization's chart, it was hard to find out if the company has an SR department. Still, we found out that DANONE's headquarter in France does have a fully dedicated division of SR. In the financial report of Central DANONE France 2017, there is a whole section devoted to Social Responsibility within the organization. Centrale DANONE states that SR has always been in the heart of the company.

<sup>3</sup> [www.zonebourse.com](http://www.zonebourse.com)

Since 1972, Centrale DANONE has developed an economic and social model that goes in line with DANONE's strategy. Antoine Riboud, the founder of DANONE launched then a double economic and social project that has been maintained since and it is being developed by the current president of DANONE, Emmanuel Faber. The SR objectives of the mother company do also extend to its subsidiaries all over the world, as mentioned in the 2017 company report. Indeed, DANONE has set up an Executive board that oversees the organization's social responsibility and sustainability projects. The SR committee in DANONE has as a mission to attend the societal projects of the company. Its field of action is to encompass all the fields of social responsibility that are linked to the company's activities, particularly the social, environmental and ethical ones. This committee also focuses on examining the main risks and opportunities for DANONE in the environmental field and observes the internal control procedures implemented within DANONE in relation to its environmental risks. Furthermore, DANONE's SR strategy centralizes its efforts on publishing extra-financial information related to societal and environmental matters. Thus, the SR committee pays great attention to social objectives with respect to employees, partners, subcontractors, suppliers and customers. As far as its subsidiary in Morocco is concerned, Centrale DANONE has received a CSR prize in 2017 awarded by the CGEM (Confédération Générale des Entreprises du Maroc) for its engagement as a socially active corporation. In reference to the Moroccan media and press<sup>4</sup>, Centrale DANONE has a dedicated CSR department which reports to the general secretary of the company. Its mission is to lead on annual evaluations of CD's practices in terms of CSR and set in motion programs such as the integration of marginalized young people with the support of a number of partners. This department also keeps an eye on its employees' welfare and works constantly on maintaining good working conditions whether it is about safety, health care, management, and personnel trainings and development. It is worth noting that this information about Centrale DANONE and its CSR engagement in Morocco are not clearly displayed on their official country website nor are there any other reports about their CSR strategy available. All in all, referring back to all the above mentioned information about Centrale DANONE, the following section will provide an analysis of the recent boycott crisis that the company has encountered and its approach to remedy the damages it caused the company. The analysis will also demonstrate if Centrale DANONE in Morocco has effectively respected all the SR objectives, it has stated it in both its global strategy and local one and how it has sought to maintain its reputation.

#### **4. ANALYSIS OF CENTRAL DANONE'S COMMUNICATIONS IN TIME OF CRISIS**

On April 20<sup>th</sup>, 2018, a public boycott campaign was launched on social media to manifest its dissatisfaction with Centrale DANONE's decision to raise the price of dairy products, mainly milk. This boycott campaign targeted other leading consumer product companies in the country; however, our study focuses only on the case of Centrale DANONE. Centrale DANONE's milk was sold at 7 dirhams per liter, which was considered too expensive compared to its cost of production and quality. The soaring prices for dairy products enraged the Moroccan consumer, especially that this decision coincided with the holy month of Ramadan. The latter is characterized by a high consumption level of milk compared to other months in the year. The boycott advocates, who remained anonymous, resorted to social media such as Facebook to express their demands for the lowering the price of the milk products and quality improvement. What amplified the crisis was Centrale DANONE's unresponsiveness to all what was circulating on social media. On April 25, during SIAM (Salon international de l'agriculture du Maroc), Sales and Purchasing Director at Centrale DANONE Adil Benkirane happened to be present there as Centrale DANONE was about to launch the first aggregation program of the dairy sector "Fellah Bladi".

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<sup>4</sup> Le Matin, May 2017

When asked about the boycott by journalists, the Sales and Purchasing Director was carried away and treated the Moroccan consumer as “traitor to the nation” who attacks “national consumption”. He further asserted, “I know that these words are tough, but I take full responsibility”. His statements had only worsened the situation and provoked public opinion. On social networks, the reactions demonstrated by Moroccans were very bitter. They expressed a high degree of frustration and helplessness. Many viewed the claims of the Sales and Purchasing Director as offending and shocking, especially that the boycott is a peaceful instrument that expresses the profound dissatisfaction of consumers with DANONE’s decision. After all, the boycott is part of the consumers’ right and it is worldwide known means of protest. Consumers have the right to buy a product or not and nothing in the law prohibits this behavior. In addition to the comparison established by Moroccan consumers of Centrale DANONE’s products with its European equivalents, the local protesters declared that wages offered by Centrale DANONE were mediocre, which had unveiled the severity of the issue and increased the ferocity of the posts, denouncing Centrale DANONE on Facebook. All things considered, Centrale DANONE preferred to remain silent. The unresponsiveness of Centrale DANONE left a huge gap for the Moroccan consumer to develop arguments with regard to the issue, which means that when you ignore public opinion, the public has no choice but to stage even more resistance.



#### COMMUNIQUÉ DE PRESSE

### **CENTRALE DANONE DEMENT TOUTE AUGMENTATION DE PRIX ET REAGIT A L’APPEL AU BOYCOTT DE SA MARQUE DE LAIT « CENTRALE »**

*(Casablanca, le 2 mai 2018).* Centrale Danone fait l’objet depuis quelques jours d’un appel au boycott de sa marque de lait « Centrale » sur les réseaux sociaux.

Cet appel accompagné d’informations erronées sur une supposée augmentation de prix a surpris l’ensemble de nos collaborateurs et a été à l’origine de propos excessifs, tenus dans l’émotion, par des cadres de la société.

Centrale Danone présente ses excuses à tous les citoyens qui se sont sentis offensés par de tels propos, qui ne reflètent pas la position de l’entreprise.

Centrale Danone exprime son profond respect à tous les consommateurs marocains et tente de son mieux de les écouter et de les comprendre.

Face aux interrogations exprimées par les consommateurs, Centrale Danone souhaite apporter les précisions suivantes :

- Centrale Danone n’a pas augmenté le prix du lait. Consciente de la place du lait dans l’alimentation et ses bienfaits pour la santé, Centrale Danone a maintenu inchangé le prix du lait depuis juillet 2013, en dépit d’une hausse continue de ses coûts.
- Centrale Danone continuera d’agir fortement pour satisfaire ses consommateurs en desservant quotidiennement 78.000 points de vente et en animant un écosystème agricole composé de 120.000 éleveurs représentant 600.000 personnes dans le monde rural.

*Picture 1: Centrale DANONE 1<sup>st</sup> press release*



Précision de presse

### **Centrale Danone réagit aux Fake News sur la qualité de ses produits :**

**L'entreprise confirme que tous ses produits répondent aux meilleures normes de sécurité sanitaire des aliments**

**Centrale Danone invite les consommateurs à prendre contact en cas de questions**

Casablanca, le 23 mai 2018 - Depuis le lancement de l'offre « Zine Bladi », à l'occasion du mois sacré de Ramadan, des rumeurs et des fausses informations ont été publiées sur la toile et principalement sur Facebook. Ces informations erronées touchent à la qualité des produits de Centrale Danone et pourraient altérer la confiance des consommateurs envers les produits de l'entreprise.

Centrale Danone dément vigoureusement ces rumeurs et fausses informations quant à la qualité de ses produits et tient à rassurer ses consommateurs à travers les précisions suivantes :

- Notre lait, tout comme l'ensemble de nos produits, fait l'objet d'un suivi rigoureux pendant le processus de production : la fabrication du lait est soumise au respect le plus strict des standards internationaux de sécurité sanitaire des aliments. La production est également suivie et contrôlée par l'autorité de référence, l'ONSSA (office national de sécurité sanitaire des produits alimentaires).
- Les 5 usines de Centrale Danone sont certifiées FS5C22000 (référentiel international pour l'hygiène et sécurité sanitaire des aliments) en plus d'autres certifications qualité comme ISO 9001. Centrale Danone dispose également des reconnaissances HACCP (Hygiène et sécurité alimentaire) sur chaque référence produit.
- Les contrôles qualité sont systématiquement effectués à la fois au niveau des laboratoires internes - au sein des usines de l'entreprise - ainsi qu'au niveau de laboratoires externes accrédités.
- En plus des certifications conformes à la réglementation nationale, l'entreprise se conforme également au référentiel du groupe Danone en matière d'hygiène et de sécurité des aliments.
- Les usines de l'entreprise sont soumises à des audits inopinés de la part du Groupe Danone, opérés par un organisme tiers indépendant et les certifications qualité ont toujours été renouvelées, à la fois au niveau national et au niveau du Groupe.

L'ensemble de ces mesures rigoureuses garantit la mise sur le marché de produits aux meilleures normes de sécurité sanitaire des aliments.

Centrale Danone invite les internautes à ne pas partager les informations douteuses sans en avoir au préalable vérifié la véracité. A ce titre, [une page Facebook officielle](https://www.facebook.com/PorteParoleCentraleDanone) est dédiée à fournir des éléments de réponse pour les consommateurs. ([www.facebook.com/PorteParoleCentraleDanone](https://www.facebook.com/PorteParoleCentraleDanone))

Centrale Danone rappelle que le Service Consommateurs de l'entreprise est disponible pour répondre à toutes les éventuelles questions relatives aux produits de Centrale Danone 24h/24 au numéro gratuit

**080 009 20 20**, ainsi qu'une ligne dédiée aux médias : **06 61 93 25 73**.



**Contact presse :**

BackOffice PR - Houria Sedrati  
0661 932 573 – 0522 983 537  
sedrati.houria@gmail.com

### *Picture 2: Centrale DANONE 3<sup>rd</sup> Press Release*

It was until May 2<sup>nd</sup> that Centrale DANONE decided to publish its first press release with regard to the boycott on both the company's website and Facebook page. The press release was nothing but an informative document to apologize to the public opinion and correct the wrong information about the rise in the price of milk. This rather late reaction of Centrale DANONE was seen as a passive attitude that does not put forth any tangible measure. Further, the press release posted on Facebook was bombarded by adverse comments, which pushed Centrale DANONE to react by making the official spokesperson and vice-president of the company showed a video statement on an online news website. The vice president didn't add any new information apart from restating what had already been mentioned in the press release and pointing out that the declaration made by his colleague, the Sales and purchasing Director, related only to him and the company was not accountable for his statements. The Sales and Purchasing Director, in turn, posted a video where he officially apologized to Moroccans. On a regretful tone, he acknowledged to have made a mistake by giving such a statement, which deeply offended and hurt Moroccans. All in all, this series of events resulted in a substantial break between Moroccan consumers and Centrale DANONE, which has cost it the trust of its faithful consumers and the loss of the brand's image once well anchored in Moroccans' minds. On the May 23, Centrale DANONE published its third press release to deny the public opinions' claims about the quality of its products. Centrale DANONE declared that all its products meet the highest safety and health standards and that everything that was said about the quality of

the entire range of its dairy products was just fake news. They also invited internet users not to promote or share any suspicious information without verifying its truthfulness, especially that there is a Facebook page which is dedicated to answering consumers' questions. Less than three months after the launch of the boycott campaign that hit Centrale DANONE's activities in the kingdom of Morocco, the French leading dairy company tried, through a press conference, to contain the situation and the damage caused by welcoming Emmanuel Faber the CEO of the company in Casablanca. This move was an attempt to readjust DANONE's failing communication in Morocco since the start of the boycott campaign, which has severely influenced and altered the activities of the French company in the country. Emmanuel Faber attempted to break from the previous communication launched by the Moroccan subsidiary and respectively recognized the boycotters' wants. He expressed his willingness to open a dialogue with all the protagonists, including wholesalers, consumers as well as farmers. He insisted that it is about listening and understanding as well as forgetting the claims made by some of Centrale DANONE's staff.

**COMMUNIQUE DE PRESSE**

Casablanca, le 26 juin 2018

**Emmanuel Faber, PDG de Danone, s'engage à travailler avec tous les Marocains pour rendre le prix du lait frais pasteurisé plus abordable.**

Après avoir écouté notamment des consommateurs et consommatrices, des épiciers, des jeunes, des mamans, des représentants des salariés et des éleveurs, Emmanuel Faber, PDG de Danone, propose trois engagements majeurs pour répondre à leurs attentes.

Nous avons été interpellés, il y a maintenant plus de 2 mois, par un boycott avec une revendication de lutte contre la vie chère, qui a frappé notre marque de lait frais pasteurisé Centrale.

Nous avons été marqués par ce boycott, le prix du lait frais pasteurisé Centrale n'ayant pas augmenté depuis 5 ans alors qu'il s'agit d'un produit de qualité optimale, fourni à travers une filière de lait dans laquelle nous avons fortement investi.

Le 26 juin, Emmanuel Faber, Président-Directeur Général de Danone, est venu au Maroc pour écouter et mieux comprendre les raisons de ce boycott. Il a déclaré : « Je respecte totalement le choix de ceux qui ont choisi de ne plus acheter nos produits : ils font passer un message fort, même si cela a un impact très grave sur nos activités. En tant que chef d'entreprise, il est de mon devoir d'en tirer des conséquences. »

Emmanuel Faber a pu s'entretenir avec les équipes de Centrale Danone, des représentants des travailleurs, plusieurs épiciers, des producteurs de lait, des consommatrices et des jeunes. Ces échanges ont été l'occasion d'entendre les attentes profondes de la société marocaine, particulièrement dans un contexte de pression sur le pouvoir d'achat.

Suite aux différentes conversations, Emmanuel Faber a partagé le message suivant : « Ce que je retiens de mes rencontres, c'est que le pouvoir d'achat de beaucoup de consommateurs est sous pression et que vous attendez beaucoup plus des marques pour qu'elles puissent continuer à être choisies au quotidien. Il y a une attente dans la société marocaine, de plus de proximité, plus de transparence, plus d'équité. C'est d'ailleurs ce qu'attend toute une génération, autour du monde. Parce que le lait frais pasteurisé est un produit quotidien et de première nécessité pour les familles, pour les enfants, cette attente est importante et légitime. Je souhaite donc que le lait frais pasteurisé Centrale y réponde tout particulièrement. C'est donc ensemble que je souhaite que nous tissions à nouveau de fortes relations de confiance mutuelle et que nous construisions le futur. »

Le modèle du lait frais pasteurisé de Centrale Danone repose sur un écosystème très particulier. Un lait frais de qualité optimale est collecté quotidiennement chez 120.000 éleveurs dans 5 régions et distribué sur 75.000 points de vente à travers le pays.

Depuis que Danone a repris la gestion de l'entreprise et de la marque en 2013, nous avons toujours veillé à ce que le prix du lait frais soit équitable et nous n'avons pas augmenté ce prix depuis 5 ans. Nous ne réalisons quasiment pas de profit sur le lait frais et depuis le boycott, nous subissons des pertes significatives. Pour répondre aux attentes de la société marocaine, il nous faut changer de modèle.

Ce nouveau modèle pourrait être fondé sur trois engagements majeurs de notre part :



1. Nous sommes prêts à ne plus faire aucun profit sur le lait frais pasteurisé Centrale. Notre objectif est de rechercher l'équité pour la marque, d'assurer un prix du lait le moins cher possible pour les épiciers et les consommateurs tout en protégeant au maximum le prix payé à nos éleveurs partenaires. Pour cela, nous nous engageons à ce que le lait frais pasteurisé de la marque Centrale soit vendu à prix coûtant pour Centrale Danone, tout en respectant la Loi marocaine. Cette marque sera le symbole de l'accès quotidien des familles marocaines aux bienfaits d'un produit essentiel pour l'alimentation familiale et la croissance des enfants. Cet engagement "prix coûtant" sera cohérent avec la mission de Danone : apporter la santé par l'alimentation au plus grand nombre.
2. La marque Centrale continuera à offrir aux consommateurs un lait frais pasteurisé aux meilleurs standards de qualité. Un lait naturel, produit exclusivement à partir du lait issu de la passion et du travail de nos éleveurs partenaires marocains. Dans ce cadre, nous nous engageons à la transparence totale sur les coûts supportés par Centrale Danone pour la collecte, les tests qualité, la pasteurisation, l'emballage, le transport et les coûts de commercialisation du lait frais pasteurisé Centrale. Cette transparence sera vérifiable par tous, à tout moment.
3. Pour rendre le prix du lait plus abordable, de façon durable, nous allons faire confiance aux épiciers et consommateurs, parties prenantes de la filière du lait frais pasteurisé, pour qu'ils décident ensemble de ce que doit être son « juste prix », un prix qui soit à la portée de tous les ménages et qui soit équitable pour tous, y compris les producteurs de lait. Nous ne savons pas encore quelle forme pourra prendre cette gouvernance du juste prix, mais des expériences intéressantes existent dans d'autres pays, comme « C'est qui le Patron ? » en France, qui est un label de marque dont le prix sont fixés par le consommateur. Nous pourrions discuter ensemble de ces exemples et évaluer comment nous pourrions les adapter au Maroc.

Nous démarrons maintenant les travaux pour pouvoir conclure sur la viabilité économique de cette proposition au plus vite. Nous espérons qu'elle recevra un accueil favorable parmi les acteurs concernés.

Emmanuel Faber a conclu : « Le lait frais pasteurisé Centrale vivra si vous adhérez largement à cette idée et si demain, elle devient la vôtre. Son avenir, ainsi que celui d'un grand nombre d'éleveurs et de salariés dépendront de l'accueil que vous ferez à ce projet : gérer ensemble le lait frais pasteurisé Centrale pour le mettre au service des épiciers, consommateurs et agriculteurs marocains. Nous espérons que les orientations que nous avons indiquées aujourd'hui pourront jeter les bases d'une nouvelle relation autour de la marque Centrale. Il est en effet de notre responsabilité d'être à l'écoute et d'entendre l'appel de la société marocaine car l'équité et la transparence sont des valeurs que nous partageons avec elle. »

**A propos de Centrale Danone**

Centrale Danone est une société anonyme cotée à la Bourse de Casablanca, dont le capital est détenu à 99,68% par Danone. Depuis près de 50 ans, un double projet anime Danone : rechercher à la fois la croissance économique et le progrès social, en étant une entreprise inclusive, et à l'écoute. Centrale Danone a toujours œuvré et continuera d'œuvrer au bénéfice des consommateurs et de la société marocaine, en développant la filière laitière et en appliquant des normes de qualité et standards d'hygiène et de sécurité alimentaire de niveau international. Nous accompagnons des éleveurs dans des démarches pour améliorer leur productivité, protéger l'environnement et surtout pour fournir au quotidien aux familles marocaines un lait de qualité optimale. Nos produits répondent rigoureusement aux exigences de qualité mais également et surtout aux exigences de la foi musulmane, le Halal, et au principe d'équité dans le commerce. Avec nos produits de qualité, nous nous engageons pour l'alimentation et la santé de tous, en ligne avec la mission de Danone d'apporter la santé par l'alimentation au plus grand nombre.

Picture 3: Centrale DANONE's CEO Press release

The boycott campaign has shown the existence a huge gap in crisis management by Moroccan enterprises, in general, and by Centrale DANONE, in particular. Moroccan enterprises have to change in terms of how to communicate with their customers and behave in such times of crisis. The objective is to shift from the traditional approach of being a financial actor solely to a social actor, especially that society changes and is always in progress. If companies turn their back to these changes, this # leaves them disconnected from their social environment in which they operate. To claim that the company is a social enterprise entails it implements concrete actions which are publicized through solid corporate communication that involves all the key stakeholders (clients, media, government, community, employees, etc.). CD's reputation and image have been seriously affected mainly on social media. As it has been mentioned before, the boycott was sparked off through social media and the boycotters dragged down the image

of the company to the bottom of the dairy products market from being the number one milk producer to the second in line renouncing its throne in the market to Jouada, a local competitor. CD's identity as a trustworthy organization in the eyes of the Moroccan consumers has been shattered. Neither advertising nor public relations has helped in gaining it back. However, the strategic decision to rethink the prices of its products, especially for milk, has borne fruit and got CD a glimmer of hope to reposition itself in the market and win back the trust of the Moroccan consumer. CD has also learnt that denying statements and lack of communication between its suppliers and customers was also a contributing factor in deteriorating its image and identity among Moroccans. To remedy this, CD has reached for social media to save its reputation from drowning by developing an online platform and a Facebook page entitled "Ntwaslo w Nwaslo" (meaning let us communicate to move forward). This consultation campaign targeted all the parties involved in the boycott starting with the farmers, cooperatives, and consumers. It has also considered public opinion by meeting consumers and wholesalers to listen to their concerns and take into consideration their suggestions.

## 5. CONCLUSION AND RECOMMENDATIONS

If a crisis is unexpected by nature, it is not though unpredictable. It certainly should not be for a leading company such as CD, which, apparently, is not endowed with a Business Continuity Plan (BCP) ready to face a potential boycott crisis when it arises. Evidently, crisis communication cannot prevent the exposure of a company to the threats of looming crisis nor can good corporate communication limit the media coverage and its impact on the operations of the company. As previously mentioned, CD in Morocco is a subsidiary of the French company DANONE. The latter does have a department of corporate communication and CSR in full operation unlike its Moroccan subsidiary which claims to have such a department but which was not to be seen during the boycott crisis. What CD has forgotten is that a good crisis communication does not guarantee that the situation will not arise again; in fact, poor corporate communication only ensures that everything will go wrong. Among the basic rules of crisis communication is to react within a short period of time after the start of the crisis, which did not happen in the case of Centrale DANONE. The latter reacted only after one month of the boycott campaign as previously stated in the analysis section. It is worth noting that if the company does not react to the crisis, its reasons and consequences will become a free playground for others to raise their voices. This leads inevitably to the spread of false information, which in turn is extremely difficult to counter. The mismanagement of corporate communication can turn into an endless story. In order to avoid the dissemination of inaccurate information and rumors the company should be proactive, responsible and take action towards the situation it is facing, which fact should account for its leadership, accountability and ability to manage the crisis effectively. The first step CD should have considered is to appoint a spokesperson, who is well informed about the crisis and clear in his speech. The company's spokespersons are the only contact with the media and they must be ready and available to interact with them when necessary, contrary to what has been done by CD. The second step is that CD should have considered the boycotters as partners rather than enemies or 'traitors' as declared by the sales and purchasing director. Consumers are the main actors of a company. With such rapid socio-economic growth, Moroccan consumers have become increasingly demanding about CSR and knowledgeable about the products they consume. These key stakeholders are no longer hesitant to take punitive measures such as a boycott in case of dissatisfaction. On the other hand, CD has failed to make its CSR publicly known, thus failing to project its shared values, its partnerships with the farmers and its desire to reconcile itself with the demands of profitability and positive contribution to society. In fact, such an oversight has cost CD its credibility in the eyes of its customers and partners, there being no concordance between the company's set objectives and its undertaken actions.



The drop in CD's sales figures had an impact on the whole of its ecosystem through its supply chain causing the company to reduce its milk collection by 30% (120,000 local breeders) and dismissing more than 880 temporary workers. As the rate of unemployment is high in Morocco, an enterprise such as CD that started laying off its employees has only contributed to increasing the rate of unemployment. Thus, CD should have anticipated the impact of its decisions on the local economy. Generally, as influential economic actors, companies are increasingly assuming a societal and political role in solving their communities socio-economic patterns. The present paper has sought to show the importance of corporate communication and to contribute to organizations' awareness about the role of social responsibility and brand reputation for the growth of the enterprise. In building a social responsibility plan, an organization must take into account several factors that depend on the eco-system in which the organization is operating. The objectives that constitute the pillar of a CSR plan must revolve around the development and maintenance of social and economic equity. Respectively, Moroccan enterprises, operating nationally or internationally, must learn from CD's experience and review their corporate communication, bearing in mind that the Moroccan consumer behavior has changed over the past few years. Indeed, the average Moroccan consumer has become more diligent with everything happening in the market and has developed a critical eye that allows him/her to compare between what is made in his home country and what is available and produced abroad. Motivated by a number of social, political and economic factors, the Moroccan consumer is no longer afraid of voicing his opinion and showing his dissatisfaction with a service, a product, or a situation. Due to globalization and information technology, the Moroccan business environment is experiencing important and constant changes. The way companies adapt and modify their behavior, as displayed through their communications, will determine their success in this new context. Consumers are thus expecting more from the leading companies and have no concern boycotting those that fail to satisfy their needs and demands. On the one hand, we must recognize that corporate branding which involves image and identity is as important as the brand's product. On the other hand, corporate reputation projects trust and credibility in the minds of the consumers; and any misapprehension of the connection between brand image, identity, reputation and social responsibility will result in the implementation of an ineffective corporate communication. To conclude, corporate communication is a key component of any modern organization and its link to reputation and corporate social responsibility is skintight. Nowadays, most problems or crises are generated by not integrating responsible practices into the organization's strategy. The effect of such negligence is perceived in the costs and benefits of services and products, in the relationship with the surrounding community as well as in the relationship maintained with the key stakeholders. The CSR policy of a company and its reputation are always displayed by a good management of corporate communication. A company like CD could have minimized the negative impact of the crisis it faced if it had deployed its social responsibility initiatives prior to the crisis and had recognized the crucial role of corporate communication in partially controlling the public opinions' reactions. Moroccan enterprises are urged to change their perceptions of the business environment from being an economic actor only to being a social proactive one and adopt well-structured measures to manage any potential future crisis effectively. They should enhancing their brand image and identity by preserving their reputation. Indeed, these measures should be regularly reviewed and audited, given the fact that the eco-system in which the organization is operating changes rapidly and is in a constant progress.

#### **LITERATURE:**

1. Andriof, J., and Waddock, S. (2002). Unfolding stakeholder engagement. In J. Andriof, S. Waddock, B. Husted, and S. Sutherland Rahman (Eds.), *Unfolding Stakeholder Thinking: Theory, Responsibility and Engagement*. Sheffield: Greenleaf Publishing.

2. Argenti, P. (1998). *Managing Image, Identity, and Reputation*. Managing Corporate Advertising. Corporate Communication.
3. Bowen, H. (1953). *Social responsibilities of the businessman*. N.Y.
4. Carroll, A.B. (1979), A three-dimensional conceptual model of corporate performance, *Academy of Management Review*,4, 497-505.
5. Fombrun, J. C. (1996). *Reputation: Realizing value from the corporate image*. Boston, MA: Harvard Business School Press.
6. Goodman, M. B. (2000). *Corporate communication: the American picture*. *Corporate Communications: An International Journal*, 5(2), 69-74.
7. Harris, T. E. & Jennings, B. (1986). *The corporate communication manager*. *The Journal of Business Communication*, 23(3), 19.
8. Hook, I. (1999). *Image and identification creation*. *Corporate Image and Identity* [On-line], Available: [www.hookdesign.com/idcreation.html](http://www.hookdesign.com/idcreation.html).
9. Melewar, T.C., Basset, K. & Simoes, C. (2006a). *The role of communication and visual identity in modern organizations*. *Corporate Communications: An International Journal*.
10. Meredith, R. (1999). *The Newest Ford Generation Takes the Company Spotlight*.
11. Roberts, K. (2000). *The Three "Cs" - Clarity, cohesiveness and control*. *Managing Image in a Dynamic Corporate Environment* [On-line]. Available on: [www.lippincottmargulies.com/sense/articles/articles3.html](http://www.lippincottmargulies.com/sense/articles/articles3.html)
12. Thiessen, A., & Ingenhoff, D. (2011). *Safeguarding reputation through strategic, integrated and situational crisis management: development of the integrative model of crisis communication*. *Corporate Communication: An International Journal*, 16(1), 8–26.
13. Van Riel, C. 1995. *Principles of Corporate Communication*, Prentice Hall: New York.
14. Van Riel, C. B. M. & Fombrun, C. J. (2007). *Essentials of corporate communication*. Routledge.
15. Wartick L. & Cochran P.L. (1985), *the evolution of the corporate social performance model*, *Academy of Management Review*, 10, 758-769.
16. Westberg, S. (1995). *Understanding corporate image: Implications for communication strategy*. London, England: Haymarket Publishing LTD.

# AN ANALYSIS OF ROMANIAN CAPITAL, FOREX AND MONETARY MARKETS: VOLATILITIES AND CONTAGION

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## **ABSTRACT**

*This paper focuses on stability relations for the Romanian main financial markets: capital, ForEx and monetary markets, as well as the intensity of the link between them and how they are interconnected, because this represents the best indicator of the situation of an economy, which is seen as a complex, adaptive and dynamic system, that is continuously changing. This analysis examines their deviation from the state of equilibrium, and what are the factors that modify this state. The study incorporates the markets evolution, their estimated volatilities, it shows that the most sensitive to the impact of a financial shock are the currency and the stock market. All the obtained results are correlated with events, news and market information from those particular moments to find explanations and understand the behavior of investors and how their decisions affected the market. Because of instability on some markets, investors started moving their finances to other markets, where they had more confidence, causing imbalances. Behavior of investors, as they react to the emergence of a shock, is decisive and extremely important in anticipating the effects that such a financial shock can produce. The values of the estimated volatilities were embedded into a volatility table to be easier to track their evolution over the period under review (2007 – 2018). Besides the financial crisis, there have been other events that have translated into a higher degree of volatility: raising the minimum wage, the Brexit, protests against corruption, the raise of salaries for the public workers which has created instability in the monetary market. The analysis continues with an estimate of a spillover index that only confirms the significant vulnerability period in the markets: 2010-2012, period during which the phenomenon of contagion may have occurred.*

**Keywords:** *capital market, contagion, foreign exchange market, GARCH, spillover index*

## **1. INTRODUCTION**

Volatility is inevitable. There are multiple factors that can lead to uncertainty in the markets: political events, such as strikes, changes in legislations, presidential elections, or major financial or social events like financial crises, wars or conflicts. As countries and economies are becoming more and more interconnected nowadays it also happens that events in one country could impact the markets in another country, through trading links, for example. The behaviour of investors, whether it is rational or irrational, allows shocks to take place from one country to another. Investors can follow irrational strategies according to their own preferences or the behaviour of other investors. For investors the safest option is to not react and not take decisions based on impulse in these situations of unpredictability. They should follow their risk appetite, respect their long-term plan and investment strategy and use diversification in order to reduce exposure to risk. It is considered that the gap between financial risk tolerance and emotional risk tolerance is the widest in such turbulent periods. An example of a factor that can generate turbulence on the stock market can come from the labour market. In their study on the impact of unemployment news on the stock market, Boyd, Hu and Jagannathan (2005), use the fact that this type of news has 3 information embedded: about future interest rates (information that dominates in expansion periods), about equity risk premium and information on corporate earnings and dividends (which dominates during economic contractions). They show that during expansions average stock prices and bond prices increase on bad news regarding

unemployment, while during contractions stock prices decrease, but for the bond prices the response is not significant. This is due to the information “contained” in the unemployment rate, the 3 factors mentioned above that react differently depending on the state of the economy, the business cycle phase. A study on contagion carried out in 2013 by Beirne J. and Fratzscher M. examines this phenomenon over the period 1999-2011, covering a large number of countries, namely 31, distinguishing three types of contagion: a contagion related to quantitative and qualitative information contributing to the well-being of an economy - contagion due to a high sensitivity of financial markets, regional or spill-over contagion and herd contagion (considered pure contagion) - an effect generated by an exaggeration, a temporarily distorted reaction of financial markets, involving panic among investors; this makes the herd contagion extremely difficult to detect and measure. The study conducted by the European Central Bank analysts, Beirne J. and Fratzscher M., showed that the level of sovereign risk and its growth during the crisis is mainly explained by quantitative and qualitative information contributing to the welfare of the economy, while regional contagion does not explain the sovereign risk as strongly. Market volatility will continue to be discussed and studied in the desire to better understand the factors that generate it, how their effects can be foreseen, what are the investors’ behaviour in the moments of instability and how markets can be rebalanced. What follows in the remaining sections of the analysis is a presentation of the methodology used to derive the volatilities for the considered markets and to calculate the spill-over index, continuing with a description of the results and then summing up the conclusions.

## 2. METHODOLOGY

### 2.1. Estimating market volatility through GARCH models

To determine which was the most sensitive Romanian financial market and how it responded to the emergence of financial shocks, the following markets were compared: the capital market – represented here by the bond market (not: PTS) and the stock market (not: PC), the monetary market (not: PM) and the foreign exchange market (not: PV) for the period August 2007 - May 2018, considering that as of August 2007, volatility in many markets had started to grow. A modeling of volatilities on these markets was pursued. In order to be considered reasonable models and the estimation to provide clear information, the number of daily observations entered in the model should be over 1000, this condition being met in this analysis with even more than 2500 daily observations. For the sake of consistency, the same period (August 2007 - May 2018) was chosen for all four significant variables of the selected markets (Bucharest Exchange Trading BET index, Romanian Interbank Offer Rate ROBOR 3M, the yield on government securities 10y, and the EUR / RON exchange rate), starting with several observations and eliminating in the event that there were no transactions on that day on at least one of the markets. For the stock market and the foreign exchange market, the values were converted into returns by applying the formula:  $\ln \frac{x_t}{x_{t-1}}$ , while for the other two markets the difference  $x_{t+1} - x_t$  was applied. By analyzing the correlogram for each of the considered variables, there was autocorrelation at lag 1, so by applying the ARCH test for one lag, we can reject  $H_0$  (there is no autoregression, we have homoskedasticity) with a probability of 0%, and we accept  $H_1$  (there is autoregression), having heteroskedasticity. Thus, GARCH (q, p) models are chosen to estimate the volatility of the studied markets. In practice, GARCH is preferred over ARCH which needs several lags (according to Gujarati (2003), GARCH(q,p) is equivalent to ARCH(q+p)). The GARCH model was subsequently extended to relax some assumptions regarding the parameters of the variation equation, or to incorporate the asymmetry of the impact of the yield on the financial assets, or to break the volatility into trend and short-term volatility. This is how asymmetric ARCH models, which allow analysis of asymmetric response to shocks appeared, out of which the most commonly used are the Threshold ARCH (TARCH)

and GARCH Exponential (EGARCH) models. The generalized equation of the variance in a GARCH(p, q) model has the following form:

$$\sigma_t^2 = \alpha_0 + \sum_{i=1}^q \alpha_i \cdot u_{t-i}^2 + \sum_{j=1}^p \beta_j \cdot \sigma_{t-j}^2, \text{ where:}$$

$\alpha_0$  – the constant of the conditional variance equation

$\alpha$  – the ARCH parameter, shows the speed with which the volatility reacts to shocks in the market;

$u_{t-i}^2$  – shocks, offering information with regards to the volatility observed in the previous period;

$\beta$  – the GARCH parameter, shows the volatility persistence;

$\sigma_{t-j}^2$  – lagged variance.

In the case of the stock market, the model for which all the coefficients were statistically significant, the log likelihood was maximal, and the AIC was the smallest is a GARCH(1,1) model for which a Student's t-distribution was considered for the errors. A decrease in log likelihood leads to an increase in the AIC information criterion and thus deteriorates the model's ability to be used in forecasting. Another criterion that a GARCH(q, p) model has to fulfill is that the sum of the ARCH and GARCH coefficients has to be in the range (0,1), which means that the unconditional variance of the error term is constant, and the process is not an explosive one. For modeling the volatility for the ForEx market an EGARCH(1,1,2) model was used. The equation of the variance in an EGARCH model, for one lag, would be:

$$\log \sigma_t^2 = \alpha_0 + \alpha \cdot \left| \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right| + \beta \cdot \log \sigma_{t-1}^2 + \gamma \cdot \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}}$$

And for the particular case of this study:

$$\log \sigma_t^2 = c(3) + c(4) \cdot \left| \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right| + c(5) \cdot \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + c(6) \cdot \frac{\varepsilon_{t-2}}{\sqrt{\sigma_{t-2}^2}} + c(7) \cdot \log \sigma_{t-1}^2$$

For the bonds market, according to the correlogram, there was autocorrelation at the first 3 lags and giving the ARCH test there was also heteroskedasticity. To estimate the volatility an EGARCH(2,1,1) model was chosen. Generalized error distribution (with fixed shape parameter 3.5) was chosen to correct the variance equation, when errors are not normally distributed. The resulting equation is the following:

$$\log \sigma_t^2 = c(2) + c(3) \cdot \left| \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right| + c(4) \cdot \left| \frac{\varepsilon_{t-2}}{\sqrt{\sigma_{t-2}^2}} \right| + c(5) \cdot \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + c(6) \cdot \log \sigma_{t-1}^2$$

In addition to the previous models, in the case of the monetary market, in the mean equation the ROBOR 3M volatility (measured by log(variance)) was also introduced, its coefficient showing the effect of high-risk perception:

$$D\_PM_t = c(1) \cdot \log(\sigma_t^2) + c(2) + c(3) \cdot D\_PM_{t-1}$$

$$\log \sigma_t^2 = c(4) + c(5) \cdot \varepsilon_{t-1}^2 + c(6) \cdot \sigma_{t-1}^2$$

Using this model, certain conditions arise which in this case are fulfilled, namely: coefficients  $c(5)$  and  $c(6)$  must be positive and their sum should not exceed 1.

## 2.2. Computing the Spillover index

The spillover index was calculated using an autoregressive vector with ten-step ahead forecast according to the methodology presented by Diebold and Yilmaz (2008) in their paper "Measuring financial asset return and volatility spillovers, with application to global equity markets". The measurement of spillover consists of estimating VAR models, concentrating on the decomposition of the forecast error variance, ultimately determining what percentage of the forecast error variance for one market is due to shocks both from that market and from other markets. In general, the formula they proposed for a  $p^{\text{th}}$  order  $N$ -variable VAR with  $H$  step ahead forecasts is:

$$\text{Spillover Index} = \frac{\sum_{h=0}^{H-1} \sum_{i,j=1}^N a_{h,ij}^2}{\sum_{h=0}^{H-1} \text{trace}(A_h A_h')} \times 100$$

where:  $a_{h,ij}^2$  is showing how much a shock to one variable contributes to the forecast error variance of another variable and  $\text{trace}(A_h A_h')$  expresses the total forecast error variation.

## 3. RESULTS

The foreign exchange market was the first to be affected by the global liquidity shortage and as a result of the ECB's injection of EUR 335 billion on the market (2008) it was expected that, with more money (euros) in the economy, the currency would depreciate.

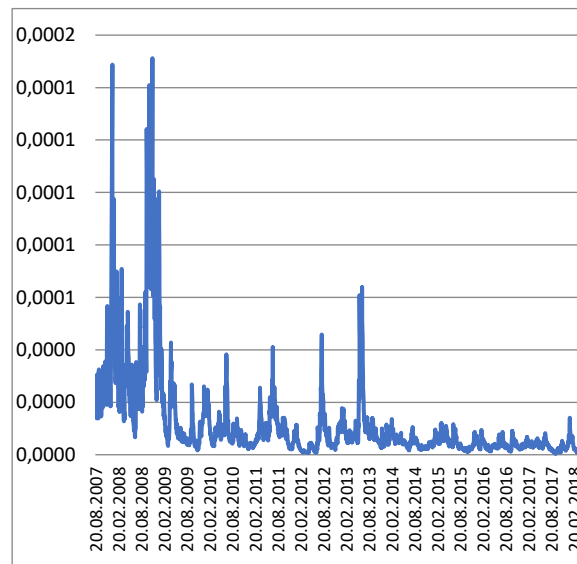


Chart 1: Conditional Variance EUR/RON,

Table following on the next page

Dependent Variable: D\_PV  
Method: ML - ARCH (Marquardt) - Normal distribution  
Sample (adjusted): 3 2693  
LOG(GARCH) = C(3) + C(4)\*ABS(RESID(-1))/@SQRT(GARCH(-1))) + C(5)  
\*RESID(-1)/@SQRT(GARCH(-1)) + C(6)\*RESID(-2)/@SQRT(GARCH(-2)) + C(7)\*LOG(GARCH(-1))

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	9.09E-05	3.21E-05	2.835488	0.004576
D_PV(-1)	0.06557336	0.01931	3.395765	0.000684
Variance Equation				
C(3)	-0.4234365	0.024308	-17.4198	5.84E-68
C(4)	0.24169883	0.010535	22.9426	1.75E-116
C(5)	0.07264055	0.019097	3.803772	0.000143
C(6)	-0.0737685	0.019216	-3.83884	0.000124
C(7)	0.97918236	0.001644	595.5542	0
R-squared	0.01541531	Mean dependent va		0.000137
Adjusted R-squared	0.01321431	S.D. dependent var		0.003468
S.E. of regression	0.00344521	Akaike info criterion		-9.10807
Sum squared resid	0.03185759	Schwarz criterion		-9.09272
Log likelihood	12261.9018	Hannan-Quinn critei		-9.10252
F-statistic	7.00374915	Durbin-Watson stat		1.815947
Prob(F-statistic)	2.0808E-07			

Table 1: EGARCH(1,1,2) – ForEx market volatility (author's computations in Eviews)

In the variance equation all the coefficients are statistically significant (as seen above), c(7) representing the coefficient of the exchange rate volatility and being positive means that when the volatility increases, the EUR / RON exchange rate will also increase, i.e. the RON is depreciating. According to the chart, the period with high volatility was January 2008 - November 2008 → period in which the euro's value grew, possibly due to the ECB's increase in crediting and deposit interest rates, but also the increase of the minimum required reserve ratio by 0.25pp (the higher the MRR rate, the lower the liquidities and the borrowing between banks becomes more expensive). The interest rate rise and the appreciation of the euro led to an increase in the rates on euro loans, as the interest rate on euro loans in Romania is calculated based on the EURIBOR. The next impacted market was the bond market, having the peak in November 2008, the only year since 2000 when rating agencies anticipated a negative outlook for Romania and lowered its rating. Apart from the years 2008 - 2010, when the effect of the financial crisis and the sovereign debt can be clearly noticed, the attention is also drawn to the period 2011 - 2012, almost one year with higher volatility. This is precisely the time when Romania obtained a higher amount than expected from the 10-year bond sale on the US market (as opposed to the European market, still marked by financial instability) due to a bond issue program started in the month of June 2011. In January, Romania sold a record number of RON-denominated bonds at low interest rates in order to protect itself against a possible worsening of the sovereign debt crisis, being the largest amount attracted by the Government since April 2005. Romania knew to sell bonds early, at a time when risk appetite had stabilized. Between March and April 2010, Greece's major problems start to appear (high deficits, public debt levels of around 120% of GDP, high unemployment rate), and tough austerity measures were needed, which led to frequent strikes. Standard & Poor's drops the rating for Greece, with bonds reaching junk bond status. The ratings in Portugal and Spain also drop 1-2 positions.

Chart following on the next page

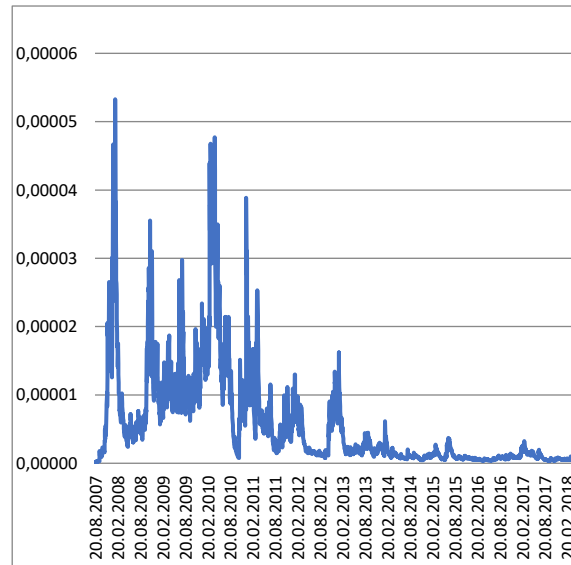


Chart 2: Conditional Variance 10y bond,

Dependent Variable: D\_PTS  
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)  
Sample (adjusted): 2 2693  
GED parameter fixed at 3.5  
 $\text{LOG}(\text{GARCH}) = \text{C}(2) + \text{C}(3) * \text{ABS}(\text{RESID}(-1) / \text{SQRT}(\text{GARCH}(-1))) + \text{C}(4) * \text{ABS}(\text{RESID}(-2) / \text{SQRT}(\text{GARCH}(-2))) + \text{C}(5) * \text{RESID}(-1) / \text{SQRT}(\text{GARCH}(-1)) + \text{C}(6) * \text{LOG}(\text{GARCH}(-1))$

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000333	7.83E-06	42.5506	0
Variance Equation				
C(2)	-0.245125	0.007968	-30.7633	0
C(3)	0.300174	0.016283	18.4343	0
C(4)	-0.113147	0.015406	-7.34427	0
C(5)	0.094847	0.005668	16.734	0
C(6)	0.988001	0.000718	1375.59	0
R-squared	-0.030021	Mean dependent va	-7.54E-06	
Adjusted R-squared	-0.031939	S.D. dependent var	0.001966	
S.E. of regression	0.001997	Akaike info criterior	-10.0535	
Sum squared resid	0.01071	Schwarz criterion	-10.0403	
Log likelihood	13537.95	Hannan-Quinn crite	-10.0487	
Durbin-Watson stat	2.730545			

Table 2: EGARCH(2,1,1) bond market volatility (author's computations in Eviews)

As far as the stock market is concerned, it is interesting that at the end of 2007 when the markets started to become unstable, the BET index registered its maximum (10,416.98), and by 2009 it collapsed to the value of 1,887.14. The Romanian stock market remains a frontier market, yet it does not reach the emerging market status. According to the FTSE Russell, we still do not have a well-developed stock market (due to the aggressive government intervention as a major or primary shareholder) and we do not meet the liquidity conditions. In order to move to an emerging market that would bring many more investors to Romania, there should be several significant privatizations and IPOs at the Bucharest Stock Exchange (e.g. Hidroelectrica), as well as a decrease of state holdings in companies such as OMV Petrom or Romgaz.

Chart following on the next page



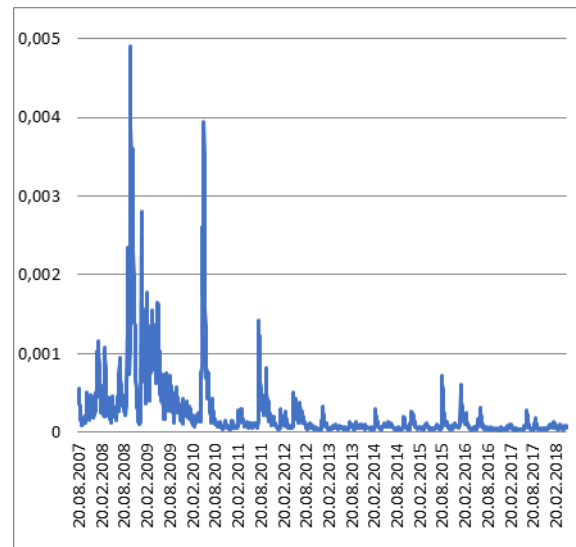


Chart 3: Conditional Variance BET index

Dependent Variable: D\_PC

Method: ML - ARCH (Marquardt) - Student's t distribution

Sample (adjusted): 2 2693

GARCH = C(2) + C(3)\*RESID(-1)^2 + C(4)\*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000426	0.000157	2.71205	0.006687
Variance Equation				
C	2.86E-06	6.30E-07	4.539337	5.64E-06
RESID(-1)^2	0.153905	0.018032	8.534974	1.40E-17
GARCH(-1)	0.840297	0.015557	54.01265	0
T-DIST. DOF	5.140405	0.534561	9.616119	6.84E-22
R-squared	-0.00053	Mean dependent va		7.76E-05
Adjusted R-squared	-0.00201	S.D. dependent var		0.015205
S.E. of regression	0.015221	Akaike info criterion		-6.2614
Sum squared resid	0.622494	Schwarz criterion		-6.25044
Log likelihood	8432.841	Hannan-Quinn crite		-6.25744
Durbin-Watson stat	1.871107			

Table 3: GARCH(1,1) stock market volatility (author's computations in Eviews)

The fact that the volatility of the index is significant is also shown in Chart 3, which illustrates high volatility during the period 2008 - 2010. Even if the minimum value was reached in February 2009, the financial crisis has made its presence felt on the Romanian stock market since September 2008, shortly after the announcement of Lehman Brothers bankruptcy. In the financial markets it was noticed that the agents perceive volatility differently, depending on the direction of the change in the value of the respective financial asset. For example, for stocks, a downward movement of the market is followed by a higher volatility as compared to an upward movement of the same amplitude (leverage effect). The monetary market responded to the financial crisis through an explosive root, the ROBOR 3M index increasing its value from around 15% to 50% within a few days, and also having a rapid recovery. Starting with 2015, the interest rate was maintained between 0.5% and 1.5% until the end of 2017, followed by a period of sudden growth.

Chart following on the next page

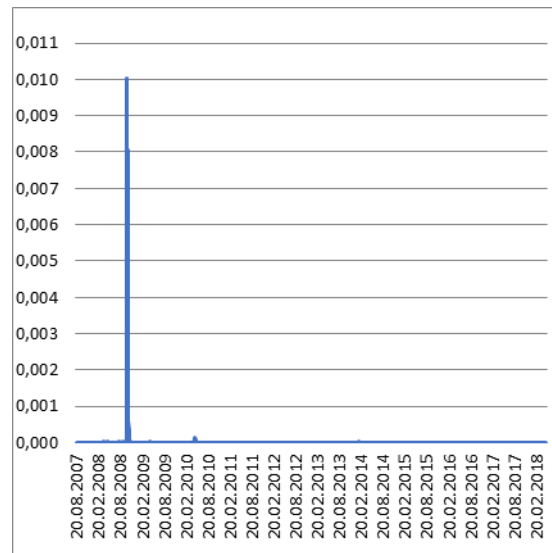


Chart 4: Conditional Variance ROBOR 3M,

Dependent Variable: D\_PM  
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)  
Sample (adjusted): 3 2693  
GARCH = C(4) + C(5)\*RESID(-1)^2 + C(6)\*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOG(GARCH)	-2.50E-05	6.44E-06	-3.88849	0.0001
C	-0.000434	0.000107	-4.042381	0.0001
D_PM(-1)	0.250059	0.018276	13.6825	0

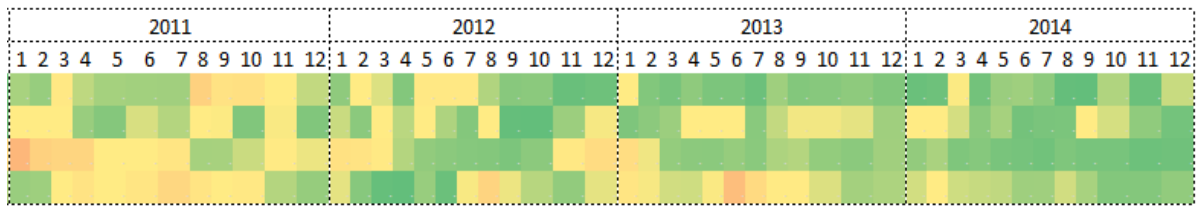
Variance Equation				
C	1.18E-08	7.12E-10	16.58446	0
RESID(-1)^2	0.390766	0.023605	16.55468	0
GARCH(-1)	0.566495	0.014631	38.718	0
GED PARAMETER	1.14707	0.007804	146.9843	0

R-squared	0.237641	Mean dependent var	-1.65E-05
Adjusted R-squared	0.235937	S.D. dependent var	0.005282
S.E. of regression	0.004617	Akaike info criterion	-12.6577
Sum squared resid	0.057207	Schwarz criterion	-12.6424
Log likelihood	17037.99	Hannan-Quinn criter.	-12.6522
F-statistic	139.4417	Durbin-Watson stat	1.028312
Prob(F-statistic)	0		

Table 4: GARCH(1,1) ARCH-M monetary market volatility (author's computations in Eviews)

What is interesting to note is that while the ROBOR's maximum value in the analysed period was on October 20<sup>th</sup>, 2008, the market volatility increased abruptly from even before that, from October 17<sup>th</sup>. Unfortunately, this explosive root is what makes the variable more difficult to model, that value being an outlier. Considering the descriptive statistics and the estimated volatilities, we could say that the foreign exchange market and the capital market were the worst affected, the recovery was slow, which is understandable, considering that until the calming of the markets, investors preferred to limit their investments or to focus on safer assets: such as gold, oil. Only after 2012 investors have begun to regain their confidence in the Romanian markets after Standard and Poor's, as well as other rating agencies. announced steady prospects for Romania with a BB + rating. From the above analysis, it can be said, comparatively, that the most volatile market is the stock market, followed by currency and then monetary and bond markets. Having these results, I proposed a dashboard of the financial markets' volatilities in order to easily capture their evolution over the period under review:



Legend:

Low volatility → High volatility



Chart 5: Volatility dashboard – financial and sovereign debt crisis period (author’s computations in Excel)

The period with significant volatility is represented by the years 2008-2009, with the peak in October 2008. The year 2010 is also marked by high volatility in the first 8 months, predominant in the bond market, due to the intensification of the sovereign debt crisis and a possible contagion effect coming from the more severe affected countries in Europe. In 2011 the volatility in the foreign exchange and bond markets continued, with all markets stabilizing by the end of 2014.

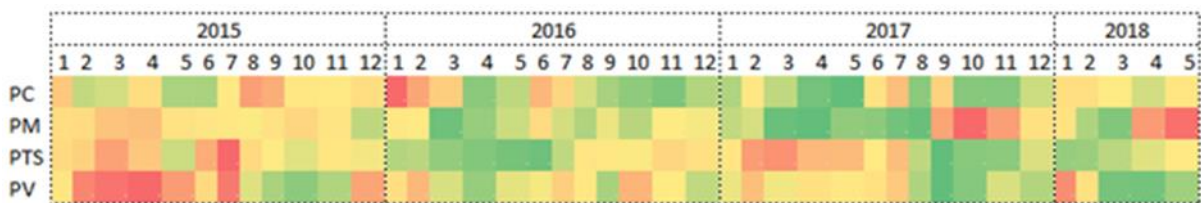


Chart 6: Volatility dashboard – post crisis period (author’s computations in Excel)

It is noteworthy that the volatility in the ForEx(PV) and capital markets(PC) is felt at moments of minimum wage increase (January and June). In June 2016, we can consider another possible cause of volatility for the capital market, namely the announcement of the referendum outcome by which British citizens voted for Britain's exit from the EU. January 18<sup>th</sup> - March 5<sup>th</sup>, 2017 was a period dominated by protests against political corruption as a result of the Romanian government's intention to amend the Criminal Code on amnesty. Volatility on the foreign exchange market is due to the depreciation of the RON due to the deepening of the trade deficit. In terms of the monetary market(PM), ROBOR 3M has a sudden growth in October 2017, then stabilizes at that new level, but from April-May 2018 the increase continues. This was generated by the wages increase for the public sector, and so more money in the economy contributed to increased consumption and thus inflation. Consequently, the demand for liquidity is higher and interbank lending becomes more expensive. Instead, if banks would raise deposit rates to attract liquidity from the market and not from interbank loans, it would limit this trend of ROBOR growth. Through this volatility panel, we can see once again that the most volatile markets are currency and stock markets. The topic of contagion on the financial markets in Romania is further on considered, in order to determine the most sensitive markets and to calculate a spillover index. This index is a way to measure to what extent the spillover effect is due to internal shocks and how much it is due to shocks from other markets. The index reflects the magnitude and persistence of the shocks, and the following chart shows the market's reaction to the sovereign debt crisis, which began in 2010, intensified in 2011 with the turmoil on the European markets, which led to a much wider fluctuation of the spillover index. Being such a major economic event, it explains why the shock has spread (“spilled”) and impacted all the

markets considered. What is notable is that the current value of the index reached the level it had in 2007/2008, in the economic boom period, before the global crisis started.



Chart 7: Spillover index (author's computations in Excel, based on results from Eviews)

#### 4. CONCLUSION

With regards to the financial markets considered in this study (stock market, bond market, monetary market, foreign exchange market), the article shows which are the most sensitive to the impact of the financial shock (being the ForEx and the stock market), over the period 2007 - 2018. The evolution over time is analyzed, their volatility is estimated using GARCH models, and all the results obtained are correlated with events, news and market information from those periods of instability. This is useful in order to better understand how these were translated into the behavior of investors and how their decisions were influenced. Because of uncertainty on some markets, investors are turning their resources to other markets, where they have more confidence or they consider safer for their investments, causing imbalances. The behavior of investors, as they react to the emergence of a shock, is decisive and extremely important in anticipating the effects that an unexpected event can produce. For an easier way of examining the markets' volatility, the values were included into a dashboard. Apart from the financial crisis, high volatility on the ForEx market could also be explained by a rise in crediting and deposit interest rates and by the increase of the minimum required reserve rate. The bond issue program thanks to which Romania managed to attract a large amount of money could have generated volatility on the bond market. Nevertheless, it is also possible that countries such as Greece, Portugal and Spain, which were facing severe austerity measures caused by the deepening of the crisis, to have had also an impact on the instability on the Romanian market. Furthermore, there have been other events that have translated into a higher degree of volatility: raising the minimum wage, the Brexit, protests against corruption, the raise of salaries for the public workers which has created instability in the monetary market. A spillover index is also computed, and it only confirms the significant vulnerability period (2010-2012) that affected all the markets, period during which the phenomenon of contagion could have occurred.

#### LITERATURE:

1. Beirne, J., Fratzscher, M. (2013). *The Pricing of Sovereign Risk and Contagion during the European Sovereign Debt Crisis*. Journal of International Money and Finance 34, 60–82
2. Boyd, J. H., Hu, J., Jagannathan, R. (2005). *The Stock Market's Reaction to Unemployment News: Why Bad News Is Usually Good for Stocks*. Journal of Finance, American Finance Association, vol. 60(2), pages 649-672, 04. Retrieved from <https://www.nber.org/papers/w8092.pdf>

3. Codirlaşu, A. CFA. (2007). *Econometrie aplicata utilizand EViews 5.1- Note de curs*. Programul de Master Specializat Managementul Sistemelor Bancare. Retrieved from <http://www.dofin.ase.ro/acodirlasu/lect/econmsbank/econometriemsbank2007.pdf>
4. Diebold, F., Yilmaz, K. (2008). *Measuring financial asset return and volatility spillovers, with application to global equity markets*. Research Department of Federal Reserve Bank of Philadelphia, Working Paper no. 08-16
5. Diebold, F., Yilmaz, K. (2010). *Better to Give than to Receive: Predictive Directional Measurement of Volatility Spillovers*. Forthcoming, International Journal of Forecasting.
6. Eurostat database: <http://ec.europa.eu/eurostat/data/database>
7. Gherguț I., Oancea B., Capatana C., (2013). *Modelarea volatilității indicelui BET-FI*, Revista de Statistica, Retrieved from [http://www.revistadestatistica.ro/Articole/2013/RRS\\_07\\_2013\\_a3ro.pdf](http://www.revistadestatistica.ro/Articole/2013/RRS_07_2013_a3ro.pdf)
8. Ionescu, A. (2017). *Crește costul finanțării deficitului bugetar: Titlurile de stat ale României, în topul celor mai mari creșteri de randament*. Retrieved from <http://cursdeguvernare.ro/creste-costul-finantarii-deficitului-bugetar-titlurile-de-stat-ale-romaniei-in-topul-celor-mai-mari-cresteri-de-randament.html>
9. Ionescu, A. (2017). *România a ratat promovarea la statutul de piață emergent*. Retrieved from <http://cursdeguvernare.ro/romania-a-ratat-promovarea-la-statutul-de-piata-emergenta.html>
10. NBR Financial Stability Reports (2015), (2016), (2017). Retrieved from <https://www.bnr.ro/PublicationDocuments.aspx?icid=6877>
11. NBR database: <http://www.bnro.ro/Baza-de-date-interactiva-604.aspx>
12. *România, pe primul loc în rândul Piețelor de Frontieră, cu randamente care depășesc 40% pe bursă. (25.07.2017). AGERPRES*. Retrieved from <https://www1.agerpres.ro/economie/2017/07/25/romania-pe-primul-loc-in-randul-pietelor-de-frontiera-cu-randamente-care-depasesc-40-pe-bursa-10-31-03>
13. *Sif-urile si Fondul Proprietatea / S.T.E.A.M. - planul de acțiuni pentru obținerea statutului de piață emergentă: BVB a eșuat în obținerea statutului de piață emergentă, și de la MCSI, și de la FTSE Russell. (31.01.2018). Ziarul Bursa*. Retrieved from [http://www.bursa.ro/sif-urile-si-fondul-proprietatea-steam-planul-de-actiuni-pentru-obtinerea-statutului-de-piata-eme...&s=print&sr=articol&id\\_articol=339736.html](http://www.bursa.ro/sif-urile-si-fondul-proprietatea-steam-planul-de-actiuni-pentru-obtinerea-statutului-de-piata-eme...&s=print&sr=articol&id_articol=339736.html)
14. Sonders, L.A. (2019). *Panic Is Not a Strategy—Nor Is Greed*. Retrieved from: <https://www.schwab.com/resource-center/insights/content/panic-is-not-a-strategy-nor-is-greed>
15. Stancu, S. (2012). *Efectele crizei datoriiilor suverane asupra echilibrului la nivel macroeconomic*, Revista Studii și cercetari de calcul economic și cibernetica economica a facultății de Cibernetica, Statistica și Informatica Economica din cadrul ASE București.
16. Steiner, S. (2012). *Timeline of European debt crisis*. Retrieved from <https://www.bankrate.com/banking/timeline-of-european-debt-crisis/>
17. Stobierski, T. (2018). *What Causes Volatility in the Markets?* Retrieved from <https://www.northwesternmutual.com/life-and-money/what-causes-volatility-in-the-markets/>
18. *Timeline: The unfolding eurozone crisis. (2012)*. Retrieved from <http://www.bbc.com/news/business-13856580>

# CORPORATION INNOVATIONS, TRANSACTION COSTS AND MOMENTUM PROFITS

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## **ABSTRACT**

*This paper discusses whether R&D costs have an impact on the value of the company. We consider the Taiwan stock market. First, we will calculate the cumulative return of all the stocks in Taiwan from the previous 6 months to the previous 1 month and we construct 10 groups according to past returns. For our momentum portfolio of buying the winner group and selling the loser group, we calculate the average monthly momentum profits during the holding period of 6 months, 12 months and 24 months. Our study finds that companies with R&D have significant momentum profits, especially the high R&D companies, and higher momentum profits during holding period of 6 month than 12 month are obtained.*

**Keywords:** *R&D, Momentum profits, Innovation*

## **1. INTRODUCTION**

With the development of the world, the relationship between innovation and the company is getting closer and closer. In recent years, various countries have developed policies for developing new industries, high-end technology manufacturing, accelerating industrial restructuring, encouraging company innovation, and supporting financial support. This reflects the importance of corporate innovation in the world. According to the National Science Council (2017) statistics, Taiwan's R&D and innovation investment has grown year by year. The proportion of total R&D expenditure to domestic gross domestic product (GDP) has reached 3.16% in 2016, much higher than 2.901% in 2010 and 1.72% in 1995, showing a year-on-year growth trend. Among them, the company's R&D investment reached 78.7% higher. It can be seen that Taiwan is also following the general trend of the world and gradually moving towards the policy development of technological innovation. The company's innovation activities are to bring the subsequent innovations through the company's R&D investment, thereby enhancing the company's intangible assets and making the company more competitive. Businesses are made up of tangible and intangible assets (Boulton, Libert, and Samek, 2000). With the advancement of the times, the importance of intangible assets is increasing, and the importance of intangible assets is gradually replacing tangible assets, which has become a major factor in increasing the value of enterprises (Lev, 2000). Innovation will be the theme of the future, which will enable the company to have a competitive edge in the industry, increase the possibility of cross-sector business, and be more competitive on the road of technology and internationalization. Taiwan's securities market is dominated by technology-based companies, which are the backbone of Taiwan's industry and are sought after by most investors. As the state and enterprises invest more in technology research and development, the impact of R&D expenditure on the value of the company has become a subject worthy of our research. Past research has had quite a lot of ink and discussion on R&D investment and company value. Early Schumpeter (1942) research found that small-scale companies in competitive markets have no resources to invest in technological innovation, Arrow (1962). The study also pointed out that large-scale companies with strong independence lack the motivation to invest in innovation activities.

Subsequent research turned to the relationship between financial constraints and company value, and pointed out that managers must understand when to invest in the company's limited resources to create the company's greatest value. (Wernerfelt, 1984; Grant, 1991; Luhe Shi, Yan Ruichang, and Huang Xuhui, 2000; Yang Zhaoxu, Huang Jie, 2004). Most recent studies have focused on R&D investment and corporate value. Lev (1999) believes that R&D innovation plays an important role in national economic growth and corporate wealth improvement. Most studies also support a strong relationship between R&D intensity and firm value (Green et al., 1996; Sougiannis, 1994; Chung et al., 1998; Chan et al., 2001; Chan et al., 2015). However, Yu and Hong (2016) pointed out that although R&D investment can explain the company's stock price changes, the number of patents has a better effect on explaining stock price behavior. One reason is that corporate policy and market uncertainty will negatively impact R&D investment (Czarnitzki and Toole, 2007; Wang, Wei, and Song, 2017), and second, R&D investment is still developing or investing, and there is no specific The results, while the patent rights have begun to take shape in the company's innovation activities, can be accounted for intangible assets, in order to benefit the company's added value (Yu and Hong, 2016). Taken together, the importance of the relationship between corporate innovation and corporate value for price sustainability remains to be confirmed. However, past research has been limited to analyzing the impact of R&D investment on the continued impact of prices, without considering the added value of the company's R&D innovation. In addition, many studies have shown that R&D investment is profitable through momentum energy, and has not yet been rationalized. Badreddine et al. (2012)'s study of stock market underlying stocks in the UK market shows that momentum energy profits, while considering transaction costs, will cause most of the kinetic energy gains to fade away. Moreover, the sharp increase in market volatility caused by R&D investment may force investment profitability to increase, and past research has not addressed relevant arguments. Chan et al. (2001) found that companies with a high ratio of R&D to stock market value are more likely to earn large excess returns, and found that R&D intensity and reward volatility are also positively correlated. Some studies have also pointed out that the risk of research and development risk is mainly from the product of mispricing (Chan et al., 2001; Eberhart et al., 2004; Lev et al., 2005; Hirshleifer et al., 2013). Finally, relevant research on price continuation effects continues the past research (Jegadeesh and Titman, 1993, 2001), The research method of constructing a portfolio for the previous period did not consider excluding the previous period to construct a portfolio earlier in the previous period (Goyal and Wahal, 2015). Reanalyze the impact of industry R&D intensity on price persistence. These important issues are still to be confirmed. This study explores the relationship between R&D innovation, transaction costs, and price sustainability in Taiwan's stock market for companies with R&D innovations, as well as for control sample companies and companies with no R&D innovations. In addition, this study examines market uncertainty, industry differences, financial crisis, boom cycle, January effect, R&D performance, and company-specific information for companies with R&D innovations, as well as control sample companies and companies with no R&D innovations. In the case of fluctuations, etc. It is necessary to explore whether the profit relationship between R&D innovation and momentum profits trading has changed. This study uses this to clarify whether the dynamism profit of R&D innovation will produce significant and conventional market anomaly characteristics.

## 2. LITERATURE DISCUSSION

The impact of R&D on company value is divided into two factions in academia. One group believes that R&D contributes to the company's value growth. High R&D ranking companies have higher average returns than low R&D ranking companies. The importance of R&D innovation in high-tech industries is higher than that of low-tech industries (Lin Yua et Al).

Another group believes that the increase in R&D due to the benefits of R&D spillovers and the growth of companies from high growth to low growth will not add value to the company, but will reduce the value of the company (Konan Chan et al, 2015). To some extent, R&D spillovers have generally increased productivity (Jaffe, 1986), and the reduction in R&D will increase the company's profitability. The R&D spillover effect suggests that a company's R&D can make other companies more productive (Bernstein and Nadiri, 1988; Jaffe, 1986; Megna and Klock, 1993). Managers may cut R&D spending to gain R&D spillovers (Arrow, 1962; Jones and Williams, 1998). As the company experiences a life cycle change, company growth will slow and profitability will be stable (DeAngelo et al., 2006, 2010; Mueller, 1972). In the transition to a low-growth phase, companies may face over-investment problems because they have been profitable but now produce negative NPV. To alleviate this problem, companies can reduce their research and development costs to eliminate unprofitable projects (Grullon and Michaely, 2004; Jensen, 1986, 1993). Jensen and Meckling (1976) based on conflicts of interest between managers and shareholders, they believe that R&D investment does not contribute to the increase in shareholder value. Grabowski and Muller (1978) conducted research on US companies' R&D spending, intangible assets, and company profitability. They found that highly research-intensive small businesses can achieve about 20% profit. Chan et al. (1990) found that 95 announcements in which stock price response R&D spending increased, on average, had a significant positive correlation, and even had a similar result in the face of a decline in corporate income. They also found that high-tech companies announced an increase in R&D spending, which would generate positive excess returns, while low-tech companies reported negative excess returns. This argument was also confirmed by Doukas and Switzer (1992), who found that after the company had a difference in the company's compensation for R&D expenditures, the two did have significant abnormal returns. In other words, when R&D spending increases in R&D-intensive companies, stock excess returns increase and the development of low-intensity companies does have the opposite result. Recent related research has directly and indirectly echoed the argument that companies can increase or unexpectedly increase their investment in R&D from the past (Sougiannis, 1994; Green et al., 1996; Chung et al., 1998; Chan et al 2001, Hana and Manry, 2004; Eberhart et al., 2004; Chan et al., 2015). Past research has turned to the relationship between R&D investment and price sustainability. In the past, research has also put forward many reasonable opinions. Some studies suggest that it may be limited by the misinterpretation of the model, with overvaluation or undervaluation. Some studies suggest that R&D may be a systemic risk and can compensate investors. Chan et al. (1990), Doukas and Switzer (1992) point out the impact of R&D investment on the company's market capitalization and price sustainability. Lev and Sougiannis (1996) pointed out that there is a significant relationship between R&D investment and price sustainability, which may come from mispricing of R&D-intensive companies or compensation for risk factors related to R&D. Han and Manry (2004) found that R&D and stock prices are positively correlated, mainly due to the fact that R&D expenses can be capitalized and not expensed. Therefore, investors agree that R&D capitalization can increase future economic value. Hirshleifer and Jiang (2010) found that false pricing premiums can improve model interpretation but do not affect significant abnormal returns. They argue that mispricing is consistent with behavioral financial models (Daniel, Hirshleifer, and Subrahmanyam, 2001; Barberis and Shleifer, 2003). Recently, Hirshleifer et al. (2013) put forward different views. They support investors' lack of response to the content of innovation efficiency, mainly because patents and patent citation assessments are more difficult. If so, companies with more efficient innovations will be undervalued, and they expect innovation efficiency to be positively related to future returns and operational performance. However, empirical factor models, such as the Carhart four-factor and three-factor models, cannot explain the relationship between innovation efficiency and rate of return.



However, Blundell et al. (1999) and Toivanen et al. (2002) have influenced the UK companies' research and development investment, and found that the greater the market share, the greater the R&D expenditure, but not related to compensation. Chiao and Hung (2006) found that there is widespread under-estimation of good R&D companies. They observe that investors seem to positively evaluate these R&D-intensive companies, but they are not enough to eliminate the undervaluation. In contrast to recent research, Hung et al. (2012) argue that companies with low R&D intensive are more likely to be underreacted. Chan et al. (2015) explored whether companies with more R&D spending can achieve higher returns when companies have better corporate governance. They found that when controlling the scale, the net market price ratio, the momentum profits factor, the asset growth rate, the accrual system, and the abnormal capital expenditure. And they found that if the R&D-intensive enterprises establish good corporate governance, these companies can indeed obtain higher returns. These results support good corporate governance that can prevent over-investment in potential R&D and can result in higher returns. Yu and Hong (2016) pointed out that although R&D investment can explain the company's stock price changes, the number of patents has a better effect on explaining stock price behavior. It is known from the above that the companies that develop and innovate mainly come from the understanding of seeking commercial potential and the development of their own proprietary knowledge. These companies generally show large growth rates and profits, but the relationship between R&D investment and price sustainability remains controversial. One reason is that corporate policy and market uncertainty will negatively impact R&D investment (Czarnitzki and Toole, 2007, 2011; Wang, Wei, and Song, 2017). The second is that R&D investment is still developing or investing, and there is no specific effect, and the patent right has begun to take shape in the company's innovation activities, which can be accounted for intangible assets to benefit the added value of the company (Yu and Hong, 2016). How to improve the effectiveness of R&D innovation and create added value is a really subject for Taiwan enterprises face the rise and fall of the future industry and transformation and it is also important for investors to form and execute kinetic energy trading strategies.

### 3. RESEARCH METHOD

This study uses Jegadeesh and Titman (1993), Badreddine et al. (2012), Novy-Marx (2012), and Goyal and Wahal (2015) kinetic energy trading strategy approach. We calculate the cumulative return rate of all stocks from the previous 6 months to the previous 1 month (recent horizon return portfolios, RR), which are arranged in small and large order, and divided into five kinetic energy portfolios. We use the top 20% of the highest paying period as the winner (winner, w), and the lowest 20% of the formation period is the loser (loser, l). In addition, this study uses K months as the holding period and skips one month during the formation period and holding period. We completed the construction of the momentum profits strategy by buying the formation winners during the holding period and selling the formation loser portfolio (w-l). After that, the average monthly rate of return of the momentum profits during the holding period is calculated. By analogy, by means of the overlapping period, the kinetic energy trading strategy at the subsequent time  $t + K$  is constructed. And calculate the average monthly rate of return during each subsequent period to increase the number of research samples and improve the verification power. This study explores the holding period (K) and 6,12,24 respectively. This study is based on the method of Badreddine et al. (2012), control sample of the company's underlying shares with R&D investment and four company-owned shares without R&D investment. Among them, the company's underlying shares with R&D investment are represented by code L. In addition, regarding the control sample selection criteria, the scores were obtained by logit regression with high market value, high turnover rate, low bid-ask spread rate, and the first three characteristics, as four control samples. The first control sample is the top n largest market value (MV) stocks, denoted by the code M.

The second control sample is the stock with the highest  $n$  turnover rate, denoted by the code T. The calculation of the turnover rate is based on the volume of transactions in the past month before the formation period divided by the number of shares issued. The third comparison sample is the first  $n$  lowest bid-ask spreads (BAPS), expressed by the code B. Among them, BAPS is the average daily bid-ask spread ratio of the sample company in the past month. The traditional transaction cost refers to the quote spread cost proposed by Stoll and Whaley (1983), while the direct effective spread estimate transaction cost is much lower than the quote spread estimate (Korajczyk and Sadka, 2004; Lesmond et al., 2004). Therefore, considering the transaction cost of the bid spread, considering the robustness of the momentum profit, if the momentum profit still exists, the transaction cost does not seem to explain the abnormal return. Finally, in order to control high market value, high turnover rate, low bid-ask spread ratio and other characteristics, this study uses the Logit model to calculate the scores of the first three characteristics, sorted by large and small and selects the first  $n$  high scores as the fourth control sample, and the code is represented by P. The relevant Logit model is as follows:

$$\ln\left(\frac{pb_i}{1-pb_i}\right) = \alpha_i + \beta_M M_i + \beta_T B_i + \varepsilon_i \quad (1)$$

Among them,  $pb_i$  is the probability that the company has R&D investment,  $1 - pb_i$  is the probability that the company has no R&D investment, And  $\ln\left(\frac{pb_i}{1-pb_i}\right)$  is the logarithmic ratio of the company's R&D investment and no R&D investment.  $\beta_M$ ,  $\beta_T$  and  $B_i$  are estimated parameter coefficients of three control factors of M, T and B, respectively. Propensity points for all company stocks do not include company samples with R&D investments and compare monthly cross-sectional data and  $n$  stocks with the highest propensity points, and form a portfolio P.

### 3.1. Fama–French three-factor model

This study uses the Fama and French three-factor model to test whether the momentum profit performance can be explained by the three factors of systemic risk, scale effect and book market value effect and get abnormal reward performance. The model is as follows:

$$R_i - R_f = \alpha + \beta(R_m - R_f) + \beta_2(R_S - R_B) + \beta_3(R_H - R_L) \quad (2)$$

$R_i$  is the average monthly rate of return for the momentum trading portfolio,  $R_m$  is the monthly market return,  $R_f$  is a risk-free rate remuneration, MP is  $(R_m - R_f)$ . And  $(R_S - R_B)$  is the average remuneration for small companies, which reduces the average remuneration of large companies, and the symbol is SP.  $(R_H - R_L)$  is the average net remuneration of the company with a high net-price market capitalization. The net market value is lower than the company's average remuneration, and the symbol is VP. This study expects MP, SP, and VP to interpret the monthly average rate of return for momentum and the associated estimates are subject to Newey and West (1987) revised statistics. If the alpha value is a significant positive (negative) value, that is, the momentum gain has a significant positive (negative) reward, indicating that a positive abnormal pay can be earned. If the rate of return during momentum profit is greater than  $\alpha$ , it indicates that the three-factor risk premium does not fully explain the random behavior of the momentum portfolio. Conversely, the three-factor risk premium can explain.

## 4. EMPIRICAL ANALYSIS

Divide the profitable effect of stocks with R&D into 10 equal parts. Buy the most profitable stock portfolio, sell the most unprofitable stock portfolio, analyze the momentum returns of the sample, compare the impact of low R&D investment, medium R&D investment and high R&D

investment on the company's stock price. Table 1 shows the average rate of return for the companies with low, medium, and high R&D investment in the six equal shares during the 6, 12, and 24 months holding period. We divide the top five yields into winners and combine the last five yields as a loser combination. P10 is the highest score for the winner combination, P9 is the second highest score for the winner combination, and so on. P1 is the worst score for the loser combination, P2 is the second worst score for the loser combination, and so on. Table 2 shows the rate of return after buying a winner combination short selling loser combination after using the momentum trading strategy. P10-P1 is the combination of buy the first winner and sell the first loser, and so on. P6-P5 is the combination of buy the last winner and sell the last loser. As can be seen from Table 2, P10-P1 combination has the most obvious significance. Significant decreases with combination decreasing ranks. The significance of P6-P5 is the least obvious. From the perspective of profitability, P10-P1 has the highest yield and, P6-P5 has the worst yield. There are even cases where the rate of return is negative. From the perspective of the company's R&D investment, high R&D companies have a higher yield than the low R&D investment companies. The average monthly rate of return for the 6 month holding period is the best, followed by 12 months and 24 months.

*Table 1: Monthly average yield statement*

RD/TA MONTH	LOW			MIDDLE			HIGH		
	6	12	24	6	12	24	6	12	24
	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
P1	-67.50%	-37.98%	-39.64%	-59.51%	-35.01%	-43.06%	-87.18%	-34.98%	-16.79%
P2	-14.32%	3.29%	1.67%	-8.43%	10.92%	-0.95%	-30.59%	13.81%	9.40%
P3	-3.41%	12.39%	12.56%	-8.41%	12.45%	13.69%	4.68%	25.02%	22.80%
P4	-9.92%	13.48%	23.28%	18.14%	41.88%	29.75%	19.74%	53.92%	29.30%
P5	36.00%	46.25%	35.40%	14.05%	36.32%	30.69%	28.89%	39.78%	40.28%
P6	8.46%	35.62%	32.55%	21.52%	51.54%	37.38%	63.06%	51.51%	36.08%
P7	16.21%	53.44%	47.41%	36.06%	46.76%	35.34%	32.85%	32.85%	32.68%
P8	62.70%	54.34%	53.98%	29.80%	34.33%	17.59%	78.78%	65.92%	53.99%
P9	41.38%	43.52%	33.24%	24.74%	37.75%	23.87%	66.23%	66.73%	43.74%
P10	29.54%	17.82%	4.64%	-19.02%	0.43%	7.82%	60.85%	53.18%	41.83%

*Table 2: momentum profits*

RD/TA MONTH	LOW			MIDDLE			HIGH		
	6	12	24	6	12	24	6	12	24
	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
P10-P1	86.01%***	49.79%***	45.18%***	63.39%***	52.18%***	58.55%***	108.21%***	53.06%***	25.53%**
P9-P2	55.55%***	38.52%**	30.26%***	29.49%	26.62%*	26.02%***	100.24%***	54.80%***	31.58%***
P8-P3	63.84%***	41.69%***	40.12%***	38.46%**	23.82%*	6.63%	69.16%***	40.1%***	29.51%***
P7-P4	34.89%	33.71%**	20.55%**	22.05%	4.36%	6.23%	14.38%	-19.67%	1.20%
P6-P5	-21.92%	-10.28%	-3.38%	14.87%	13.49%	5.00%	28.22%	11.81%	-2.11%

\*\*\*1% Significant \*\*5% Significant \*10% Significant

In order to show whether the company's investment in R&D expenditure has an impact on the revenue of the momentum portfolio, we have established an experimental group and a control group. In Table 3, the experimental group F is a company with R&D investment. B, M, P, T are the control groups without R&D companies. Among them, B is a company divided by market value, M is a company divided by high turnover rate, T is a company divided by low bid-ask spread ratio, P is the division of the first three characteristics after the score is obtained by logit regression. P10 is the highest score for the winner combination, P9 is the second highest score for the winner combination, and so on. P1 is the worst score for the loser combination, P2 is the second worst score for the loser combination, and so on. In Table 4, We buy the winner combination and sell the loser combination, the average return rate is compared after 6, 12, and 24 months. (P10-P1 is buy the first winner combination and sell the first loser combination, P6-P5 is buy the last winner combination and sell the last loser combination). It can be clearly seen from the table that the experimental group F is more significant. In the control group, M and P also showed more significant values, but the significance was not as good as the experimental group F.

In terms of the rate of return, the company with R&D in the experimental group as a whole has higher yields than the company without R&D. P10-p1 performance is particularly evident during the 6-month holding period. From the experimental group's rate of return, the P10-P1 yield during the six-month holding period is much larger than the other combinations. From the significance and the rate of return, it is proved that the factor of the company's R&D investment has a significant impact on the yield when the kinetic energy is profitable.

Table 3: Experimental group and control group

MON TH	F			B			M			P			T		
	6	12	24	6	12	24	6	12	24	6	12	24	6	12	24
	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N	MEA N
P1	-	-	-	58.68	77.64	79.82	12.42	38.10	32.30	-	1.40	1.12	77.88	118.77	138.36
	95.28	57.26	46.28	%	%	%	%	%	%	29.90	%	%	%	%	%
P2	25.46	17.13	6.75	25.39	51.89	68.22	47.89	68.54	58.14	41.72	44.16	39.74	100.61	139.12	169.19
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P3	12.01	24.39	19.76	36.42	55.62	55.45	58.44	69.50	62.26	64.50	58.86	47.87	166.38	198.51	183.00
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P4	23.35	31.87	24.61	41.49	50.60	62.35	41.48	55.04	58.74	48.91	48.21	37.46	160.88	151.87	168.61
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P5	37.27	35.31	36.93	56.41	68.83	68.82	59.28	64.78	62.04	75.44	54.18	51.22	138.06	164.69	161.54
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P6	55.15	43.76	28.48	58.61	78.15	67.60	62.94	60.39	56.95	70.41	63.82	54.87	123.59	143.48	161.03
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P7	37.07	40.21	31.35	74.80	67.33	68.46	63.93	67.01	69.21	59.71	62.78	58.09	138.78	161.34	167.04
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P8	45.62	47.99	40.06	70.71	75.00	67.15	69.26	78.93	71.24	70.76	56.02	56.53	152.13	161.67	164.54
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P9	42.96	45.75	24.07	68.05	60.08	62.54	79.06	73.30	67.59	84.41	74.72	56.06	111.39	126.58	159.60
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
P10	29.65	18.94	7.02	65.38	63.52	55.42	95.78	78.53	59.16	52.96	32.39	34.33	142.15	148.16	150.29
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

Table 4: Experimental group and control group

MON TH	L			B			M			P			T		
	6	12	24	6	12	24	6	12	24	6	12	24	6	12	24
	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N	MEAN N
P10- P1	114.38	68.75	41.49	1.37%	-	(-)	64.60	33.34	20.1%	54.56	13.50	18.46	41.77	5.25	8.65
	***	***	***		14.5	18.7	***	**	***	***	%	**	**	%	%
P9- P2	31.82%	29.65	11.96	43.92	16.8	-	31.42	14.24	8.07%	43.36	36.09	22.96	45.14	0.32	5.86
	%**	**	%	**	8%	0.37%	**	%*	%**	**	**	**	**	%	%
P8- P3	18.82%	9.79%	17.45	22.15	16.4	12.64	11.03	6.71%	9.36%	6.35%	11.18	14.16	17.55	-	-
			***	%	4%	%*	%	**	**	%	%	***	%	7.42	5.44
P7- P4	22.41%	7.82%	5.35%	36.88	14.5	5.59%	27.97	10.01	11.07	16.27	16.17	19.86	5.42%	6.52	-
	*		**	8%	8%	**	%	%**	%	%	**	***	%	%	7.35
P6- P5	24.59%	12.11	-4.45%	13.25	9.64	1.85%	1.45%	-	-	-7.78%	-0.92%	-2.00%	-	-	-
	%	%	%	%	%	%	%	3.46%	5.57%	%	%	%	10.03	18.2	4.43
													%	9%	%

\*\*\*1% Significant \*\*5% Significant \* 10% Significant

In order to further prove that the high R&D company's stock price yield is higher than that of the low R&D company and to find what is the rate of return to the combination of different ranking. We have done the following evidence. In Table 5, among HP1-LP1, HP1 is the first loser combination of high R&D companies, LP1 is the first loser combination of low R&D companies. HP5-LP5 is the last loser combination of high R&D company minus the last loser combination of low R&D company. Among HP10-LP10, HP10 is the first winner combination of high R&D company and LP10 is the first winner combination of low R&D company and so on. From Table 5, it can be found that in the winner combination of the six-month holding period, buying a high R&D company, short selling a low R&D company can generate a positive remuneration and the rate of return also declined as the winner's ranking fell. Explain that high R&D companies have a positive impact on stock prices and that returns are declining as winners decline.

Conversely, in the loser combination, buying a high R&D company, selling a low R&D company can generate negative rewards. The rate of return also rises with the decline of the winner's ranking, indicating that the high R&D company has a negative impact on the stock price and the reward increases with the decline in the winner's ranking. Because the loser combination earns through short selling, we can earn positive rewards through short selling. This phenomenon in period of 12 months of holding period is not obvious for 6 months, and is least obvious during the 24 month holding period. In Table 6, using the momentum energy profit method, HP10-LP1 is buy the high R&D first winner combination and sell the low R&D first loser combination. HP6-LP5 is buy the high R&D last winner combination and sell the low R&D last loser combination. We find that HP10-LP1, HP9-LP2, and HP8-LP3 are significant, and the momentum profits increase as winners and losers combination increase in rankings. The momentum profits during the 6-month holding period is better than 12 and 24 month. HP1-LP10 is buy the high R&D first loser combination and sell the low R&D first winner combination HP5-LP6 is buy the high R&D last winner combination and sell the low R&D last loser combination. We find that HP1-LP10, HP2-LP9, and HP3-LP8 are significant, and the momentum profits decrease as winners and losers combination increase in rankings. Because it is necessary to sell the loser combination and buy the winner combination, the part that buys high R&D losers combination and sell the low R&D winners combination is a reverse proof.

*Table 5: R&D level and return rate comparison table*

MONTH	6	12	24
	MEAN	MEAN	MEAN
HP1-LP1	-66.87%	-1.31%	31.77%
HP2-LP2	-16.27%	10.52%	7.73%
HP3-LP3	8.09%	12.63%	10.24%
HP4-LP4	29.66%	40.43%***	6.01%
HP5-LP5	-7.11%	-6.47%	4.88%
HP6-LP6	54.59%**	15.89%	3.52%
HP7-LP7	16.64%	-20.59%	-14.73%
HP8-LP8	16.09%	11.57%	0.01%
HP9-LP9	24.85%	23.21%	10.50%
HP10-LP10	103.17%**	35.29%	37.50%**

\*\*\*1% Significant \*\*5% Significant \* 10% Significant

*Table 6: Cross-reduction momentum profits table*

MONTH	6	12	24
	MEAN	MEAN	MEAN
HP10-LP1	30.23%	77.91%**	75.92%***
HP9-LP2	80.54%***	63.44%***	42.06%***
HP8-LP3	82.18%***	53.52%***	41.43%***
HP7-LP4	42.77%**	19.37%	9.40%
HP6-LP5	27.05%	5.26%	0.68%
HP5-LP6	20.42%	4.15%	7.73%
HP4-LP7	3.53%	0.48%	-18.11%
HP3-LP8	(-)58%***	(-)29%*	(-)31%***
HP2-LP9	(-)72%**	-29.71%	(-)23%**
HP1-LP10	(-)135%**	(-)0.55%*	-24.80%

\*\*\*1% Significant \*\*5% Significant \* 10% Significant

In order to test whether the momentum profit performance of the buy winner combination and sell loser combination can be explained by systemic risk, scale effect, book market value effect and momentum factor, we use the three-factor model and the four-factor model to examine. Table 7 shows that, from the significance point of view, the three-factor model and the four-factor model are significantly more prominent in HP10-LP1, HP9-LP2 and HP8-LP3. It shows that during the 6, 12, and 24 months of the holding period, whether the momentum profits performance of the buy winner combination and sell loser combination can be explained by system risk, scale effect, book market value effect and momentum factor. Compare table 6, we can find that HP10-LP1 was not significant during the 6-month holding period, but it was

significant after examination through the three-factor and four-factor models. It seems that some individual months have a low yield due to the overall poor returns of the market, but compared with the overall yield of the broader market, they still receive significant excess returns. Although HP10-LP1's relative remuneration during the six-month holding period is not good as 12, 24 months, his absolute remuneration is still the best. The fractions of HP1-LP10, HP2-LP9 and HP3-LP8, although the yields in Table 6 is good, the significance produced after the three-factor and four-factor examinations was not significant. Therefore, the best performance is buy the high R&D first winner combination and sell the low R&D first loser combination of 6 months of holding period.

*Table 7: A-values for three-factor and four-factor models*

MONTH	Fama3			fama4		
	6	12	24	6	12	24
	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
HP10-LP1	108.32%*	80.80%**	79.41%***	124.09%**	84.31%**	83.86%***
HP9-LP2	88.96%***	69.1%***	44.21%***	88.55%***	68.53%***	42.31%***
HP8-LP3	85.73%***	55.44%***	42.37%***	86.47%***	52.42%***	40.29%***
HP7-LP4	46.92%*	24.67%	12.83%	49.80%***	28.33%*	14.03%
HP6-LP5	22.40%	2.48%	-1.79%	23.29%	4.25%	-0.51%
HP5-LP6	21.76%	3.41%	7.47%	30.06%	4.63%	6.66%
HP4-LP7	0.17%	-0.88%	(-)23%**	23.78%	-0.99%	(-)21.99%*
HP3-LP8	30.67%	(-)27%**	(-)31%***	51.25%	(-)30.12%*	(-)33.85%***
HP2-LP9	(-)69%**	-26.06%	(-)22%*	(-)68%**	-27.30%	(-)24.25%**
HP1-LP10	-137.75%	(-)58%**	-23.87%	(-)128%**	-49.11%	-13.96%

\*\*\*1% Significant \*\*5% Significant \* 10% Significant

## 5. CONCLUSION

In this paper, we focus on the profitability of the momentum profits strategy, we take all the stocks in Taiwan as samples. the R&D companies are the experimental group and we also make four undeveloped control groups. The results of the experiment we find that the money-making effect of the momentum profits strategy exists. From the comparison between the experimental group and the control group, we find that the companies with R&D passed momentum profits strategy, the yield was higher than that of the companies without R&D. From the experiment we can see that R&D has a lasting impact on the company's stock price. From the holding period of 6 months, 12 months and 24 months, the reward for holding for 6 months is the most obvious. Therefore, we find that the companies investing in R&D is reflected in the stock price in the short term period is most obvious. We believe that companies investing in R&D have already raised their earnings on the stock price in the short term, so the short-term yeild are more obvious. The stock price always reflects the company's future and expectations for the company's future. For the long-term stock price, we also need consider that the R&D results have not achieved the expected results, so the impact of R&D investment on the short-term is better than the long-term impact. However R&D investment has a positive impact on company value. Chan et al. (1990), Doukas and Switzer (1992)'s point is as same as us. They point out the impact of R&D investment on the company's market capitalization and price sustainability. We use momentum profits strategy to combine R&D companies, buy the R&D winner combination and sell the R&D loser combination. Because of the success and failure of R&D investment, the winner combination more likely to succeed and the loser combination more likely to fail. The possibility of random events is reduced by a combination of all R&D stocks in Taiwan market. We proved that buy the R&D winner combination and sell the R&D combination can get great yield from momentum profits. This effect was most evident in the combination of high R&D investment companies during the six-month holding period. Taiwan's stock market is dominated by technology-based companies. The technical nature of these companies is more important. With the development and progress of the times, these companies will pay more and more attention to the R&D investment. We should also pay more attention to high R&D companies.

In the Taiwan stock market, considering the company's research and development level and trading using the kinetic energy strategy, we will get unusual rewards. Our article has a reference for Taiwan's academic circles and investment institutions.

#### LITERATURE:

1. Arrow, K. J., 1962. Economic welfare and the allocation of resources to innovation, in r. Nelson, ed., the rate and direction of economic activity, New York: National Bureau of Economic Research, 609-628.
2. Badreddine, S.H., Galariotis, E.C. and Holmes, P., 2012. The relevance of information and trading costs in explaining momentum profits: Evidence from optioned and non-optioned stocks. *Journal of International Financial Markets, Institutions and Money*, 22, 589-608.
3. Barberis, N. and Shleifer, A., 2003. Style investing. *Journal of Financial Economics*, 68, 161–199.
4. Blundell, R., Griffith, R. and van Reenen, J. 1999. Market share, market value, and innovation in a panel of British manufacturing firms. *Review of Economic Studies*, 66 (3), 529-554.
5. Chan, K., Chen, H.K., Hong, L.H., and Wang, Y., 2015. Stock market valuation of R&D expenditures—The role of corporate governance. *Pacific-Basin Finance Journal*, 31, 78-93.
6. Chan, K., L., Chan, K.C., Jegadeesh, N., and Lakonishok, J., 2006. Earnings quality and stock returns. *Journal of Business*, 79, 1041–1082.
7. Chan, L. K. C., Lakonishok, J., and Sougiannis, T. 2001. The stock market valuation of research and development expenditures. *The Journal of Finance*, 56, 6, 2431-2456.
8. Chan, S. H., Martin, J. D. and Kensinger, J. W. 1990. Corporate research and development.
9. Chiao C. and Hung W. 2006. The Stock Market Valuations of R&D and Electronics Firms during Taiwan's Recent Economic Transition. *Developing Economies*, 44, 53-78.
10. Chung K. H Wright P. and Charoenwong C. 1998. Investment opportunities and market reaction to capital and expenditure decisions. *Journal of Banking and Finance*, 22, 41-60.
11. Czarnitzki D. and Toole A. A, 2007. Business R & D and the interplay of R & D subsidies and product market uncertainty. *Review of Industrial Organization*, 31, 169–181.
12. Czarnitzki, D., and Toole, A. A. 2011. Patent protection, market uncertainty, and R & D investment. *The Review of Economics and Statistics*, 93, 147–159.
13. Daniel, K., Hirshleifer, D., and Subrahmanyam, A., 2001. Overconfidence, arbitrage, and equilibrium asset pricing. *Journal of Finance*, 56, 921–965.
14. Doukas, J. and Switzer, L. N., 1992. The stock market's view of R&D spending and market concentration. *Journal of Economics and Business*, 44(2), 95-114.
15. Eberhart, A.C., Maxwell, W .F., and Siddique, A.R., 2004. An examination of long-term abnormal stock returns and operating performance following R&D increase. *Journal of Finance*, 59, 623–650.
16. Fama, E. F. and French, K. R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33, 3–56.
17. Fama, E. F. and MacBeth, J. D., 1973. Risk, return and equilibrium: empirical tests. *Journal of Political Economy*, 81, 607–636.
18. Fama, E.F. and French, K. R., 1992. The cross-section of expected stock returns. *The Journal of Finance*, 47, 427–465.
19. Goyal, A. and Wahal, S., 2015. Is momentum an echo *Journal of Financial & Quantitative Analysis*, 50, 6, 1237-1267.
20. Grant, R. M., 1991. The resource-based theory of competitive advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135.
21. Han, H. B. and Manry, D., 2004. The value-relevance of R&D and advertising expenditure: Evidence from Korea. *The International Journal of Accounting*, 39, 2, 155-173.

22. Hirshleifer, D. and Jiang, D., 2010. A financing-based misvaluation factor and the cross-section of expected returns. *Review of financial studies*, 23, 401–3436.
23. Hirshleifer, D., Hsu, P. H., and Li, D., 2013. Innovative efficiency and stock returns. *Journal of Financial Economics*, 107 (3), 632-654.
24. Hung, W., Chiao, C., Liao, T. L., and Huang, S. T., 2012. R&D, risks and overreaction in a market with the absence of the book-to-market effect. *International Review of Economics & Finance*, 22 (1), 11–24.
25. Jegadeesh, N. and Titman S., 2001. Profitability of momentum strategies: An evaluation of alternative explanations. *Journal of Finance*, 56, 699–720.
26. Jegadeesh, N., and Titman, S., 1993. Returns to buying winners and selling losers: Implications for stock market efficiency. *Journal of Finance*, 48, 35–91.
27. Jensen, M. C. and Meckling, W. H., 1976. Theory of the firm: managerial behavior, agency cost and ownership structure. *Journal of Financial Economics*, 3, 305–360.
28. Lev, B., 1999. R&D and capital markets. *Journal of Applied Corporate Finance*, 11, 21–35. Lev, B., and Sougiannis, T., 1996. The capitalization, amortization and value relevance of R&D. *Journal of Accounting and Economics*, 121, 107-138.
29. Lev, B., Sarath, B., and Sougiannis, T., 2005. R&D reporting biases and their consequences. *Contemporary Accounting Research*, 22, 977–1026.
30. Novy-Marx, R., 2012. Is momentum really momentum *Journal of Financial Economics*, 103, 429–453.
31. Schumpeter, J. A. 1942. *Capitalism, socialism and democracy*. Harper Torch books: New York.
32. Sougiannis, T., 1994. The accounting based valuation of corporate R&D. *The Accounting Review*, 69 (1), 44-68
33. Toivanen, O., Stoneman, P., and Bosworth, D., 2002. The innovation and market value of UK firms, *Oxford Bulletin of Economics and Statistics*, 64 (1), 39-61.
34. Wang, Y., Wei, Y., and Song, F. M., 2017. Uncertainty and corporate R&D investment: Evidence from Chinese listed firms, *International Review of Economics & Finance*, 47, 176-200.
35. Yu, G. J. and Hong, K., 2016. Patents and R&D expenditure in explaining stock price movements, *Finance Research Letters*, 19, 197-203.



## **MEDIA AND COMMUNICATION ASPECTS AT LAUNCHING AN ENTREPRENEURIAL VENTURE**

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### **ABSTRACT**

*Entrepreneurship represents the process of creating a new value through different activities in which an entrepreneur recognizes a new business opportunity, establishes and manages the company, collects all the necessary resources to realize a business opportunity, realizes the product, acquires the market, sells the product, distributes the newly created value and recognizes new business chance. Launching an entrepreneurial venture can be divided into ten more dependent activities and related steps. The purpose and goal of this paper is to identify and define areas that are elementary in the field of media and communication and to scientifically approximate the context of the role of certain activity in the development of a business subject.*

**Keywords:** *launching an entrepreneurial venture, company, company name, visual design, branding*

### **1. INTRODUCTION**

The concept of entrepreneurship comes from the word taken, which means not to wait for something to happen by itself, but to go into action. Entrepreneurship represents the process of creating a new value through different activities in which an entrepreneur recognizes a new business opportunity, establishes and manages the company, collects all the necessary resources to realize a business opportunity, realizes the product, acquires the market, sells the product, distributes the newly created value and recognizes new business chance. An entrepreneur is a person who undertakes certain ventures and assumes uncertainty and risk (Hunjet, Kozina, Milković: 2012). Launching an entrepreneurial venture for every individual, whether it is a young person or just a beginner's entrepreneur, is a multiplicity of challenges in different areas of action; Launching an entrepreneurial venture involves setting up an enterprise or craft and bringing a business entity from the minimum to the optimal functionality. Motives for launching an entrepreneurial venture are extremely colorful; development of a new product, just earning money, providing a new type of service, creating new jobs, existential problems, changing the work environment, and the like. The bit of entrepreneurial behavior is recognition of opportunities and the realization of ideas. Entrepreneurial tasks can be achieved by an individual or group of people. Tasks do require creativity, motivation and willingness to take risks (Dračić: 2012). When launching an entrepreneurial venture, most of the business is present - there is a business idea, a business idea about a product that is to be produced in the future business environment or the service it wants to offer.

However, when initiating an entrepreneurial venture, it is often the case that strategically important segments of a future company or trades such as a company name, a sign and / or logo, a billboard, a memorandum, a seal and the like do not care or are sufficiently devoted to it attention.

## 2. ENTREPRENEURIAL VENTURE

Idea + Opportunity + Team + Resources = Entrepreneurship!<sup>1</sup> There are three basic elements without which it is impossible to run and successfully run a business venture: business opportunity, resources and entrepreneur / entrepreneurial team. Every business idea is not a business opportunity. Finding good ideas is just the first step in the development of the entrepreneurial process. For some business idea to be a business opportunity, it should be attractive enough, persistent, exposed at the right time, visible through a product / service that creates additional value for its customer / end user. The basic characteristic of a business opportunity is its market-based justification, in the existence of a large enough market, interested in buying a particular product and service. A key factor in the success of an entrepreneurial venture is certainly the man, the entrepreneur and the team of people around him. An entrepreneur is the one who finds a business opportunity and manages resources to create new value (Dračić: 2012). Business entities in their organizational and legal form may be: Commercial Company, Crafts, Cooperatives and Family Farms. According to the Companies Act, a company may be a company of persons (Public limited company or Limited partnership) and capital company (Joint stock company, Limited liability company Ltd, Simply limited liability company and Economic interest grouping). A public corporation is a trading company in which two or more persons are merged because of the continuous performance of a joint venture and every member of the company is liable to the creditors of the company unlimitedly in solidarity with all of their assets. Limited partnership is a trading company in which two or more persons are merged for the purpose of continuing the business of a joint venture, of which at least one is liable for the liabilities of the company, wholly and unlimitedly with all of its assets (complementary), and at least one is liable for the company's liabilities only the amount of a certain property role in the company (the commander). The joint stock company (share capital of 200,000 HRK) is a trading company in which the members (shareholders) participate in shares in share capital divided into shares. A limited liability company (Ltd) is a company (a share capital of HRK 20,000 HRK) in which one or more legal or natural persons invest the underlying roles with which they participate in pre-agreed share capital. A simple limited company (SimplyLtd) is simpler than the founding of other companies and can be founded by a maximum of three people and only one person can be a member of the management (director) responsible for the company's business. Retention of profit up to 20,000 HRK becomes d.o.o. The Economic Interest Association is a legal entity founded by two or more natural and legal persons to facilitate and promote the conduct of economic activities that make the business of their business and to improve or increase their effect, but that legal person does not acquire for itself profit. The association can be established without foundation capital. Craft<sup>2</sup> is the sole and permanent performance of permitted economic activities in accordance with the Law, by natural persons for the purpose of obtaining profits generated by production, traffic or provision of services on the market. A craftsman is a natural person who carries out one or more activities on his own behalf and for his account, and may also be employed by other persons. We have free, tied and privileged crafts. The Cooperative<sup>3</sup> is a voluntary, open, independent and independent society governed by its members, and through its work and other activities or the use of its services, on the basis of mutuality and mutual assistance, promote,

<sup>1</sup> Cf. Dračić, Irma (2012): *Enterprise Business and Entrepreneurial Environment*, Croatian Employment Service, Varaždin.

<sup>2</sup> See the Law on Craft activities (2003)

<sup>3</sup> See the Law on Cooperatives (2019)

safeguard and safeguard their individual economic and other needs and interests and achieve the goals for which the cooperative was founded. A member of the co-operative may be only a person directly involved in the work of the co-operative, which operates through the co-operative or the benefit of its service or otherwise directly participates in the achievement of the goals for which the cooperative is established. The Family Farm<sup>4</sup> (OPG) is an organizational form of an economic entity of a natural person who, for the purpose of income generation, independently and permanently carries out the activity of agriculture and its related supplementary activities, based on the use of its own and / or hired production resources and on the work, knowledge and skills of members family. The OPG Holder is the elected OPG member who is the holder of the OPG's rights and obligations, and in the capacity of the responsible person is represented and managed by OPG.

### 3. WORKFLOW OF ACTIVITIES AT LAUNCHING AN ENTREPRENEURIAL VENTURE

In this paper, we will keep on defining the activities that need to be implemented at the Limited Liability Company. Workflow activities can, in principle, also apply to SimplyLtd. The workflow of the entrepreneurial venture startup assumes that it has completed the process of generating business ideas<sup>5</sup>. The first step is to choose the name of the company, in the word of legal regulation it is called company<sup>6</sup>. The second step is to go to a notary public, where you need to personally certify and sign the following documents:

- a) Application for registration in the court register (form Po)
- b) The founding act - a social contract (signed by all founders) or a statement on the establishment of the company (if the company only establishes one person)
- c) Statement by the members authorized to represent the company on acceptance of the posting
- d) Decision on Appointment of Board Members
- e) Signature of directors or signatures of management members
- f) The members of the Supervisory Board (if the Company has a Supervisory Board)
- g) Decision on appointing the company's procurator and its signature (if the company has a procurator)
- h) Decision on determining the company's address.

After that, the Public Notary electronically sends the documentation to the FINA office<sup>7</sup> (hitro.hr) where the payment of court fees and founding deposit can be executed. After completing the documentation and payment of founder deposits and fees, the documentation is sent to the Commercial Court electronically or is filed in paper form. The announcement is that e-registration will soon be available<sup>8</sup>. If the documentation sent electronically is correct and complete, the Commercial Court will register the company in the Court Registry within 24 hours and electronically submit to the FINA Office a Decision on Establishment and a Certificate of OIB<sup>9</sup> to the newly founded Limited Liability Company. However, in the case when the Commercial Court delivers documents in paper form, the Company's registration

<sup>4</sup> See the Law of Family farm (2018)

<sup>5</sup> Hunjet, A., Kozina, G. and Milković, M. (2012): *Acquiring knowledge and skills for the future of entrepreneurship*. in: *Learning for Entrepreneurship*, 2 (2), p.106. URL: <https://hrcak.srce.hr/130251>

<sup>6</sup> According to the provisions of *Article 11 of the Companies Act*, the company is the name under which a company operates and under which it participates in legal transactions. In everyday speech, the word company is often used in a legally defective way and is usually used as a synonym for a company word.

<sup>7</sup> Financial Agency, more at <https://www.fina.hr/tko-smo>

<sup>8</sup> Darko Horvat, Minister of the Economy: *"Launching from the beginning of April 2019 there will be an application that will, by networking six state institutions, enable startup by completing an electronic form. The system will give a certain support and in two days it will be possible to open an account in a commercial bank and thus allow payments to every entrepreneur"*, session of the Government of the Republic of Croatia, held on 02.01.2019. in Zagreb.

<sup>9</sup> Personal identification number (PID)

deadline is 15 days, and the Company's Founding Decision and the OIB's Certificate from the Office of Fine Office will be filed in paper form at the Commercial Court. The Fine Office meets the RPS form required for obtaining the Classification of the Business Entity by National Classification of Activities (NKD)<sup>10</sup> by the Central Bureau of Statistics (allocation of the master code and the code of the main activity). Office Fine will automatically receive the State Statistical Office's notice electronically, upon receipt of the Founding Decision, within one working day. The fourth step is downloading documentation and opening an account. The decision on registration in the court register and the notification of the business entity's classification according to the National Classification of Activities with the registered registration number is taken over at the FINA counter. Fifth step. After taking the documentation, it is necessary to create a seal. The sixth step is to open a bank account in order to make the transfer of the founder's deposit on the company's account. The seventh and eighth steps are complementary; The Company, the Company's Owners and the Company's Employees must apply to the Pension Insurance System at the Croatian Pension Insurance Institute (HZMO)<sup>11</sup>. In addition to applying for a pension insurance company, it is also necessary to report to the Croatian Health Insurance Institute (HZZO)<sup>12</sup> in the health insurance system. The ninth, but not the last step, is the registration of the company in the Tax Administration, competent for the seat of the company, for the registration of taxpayers in the tax and VAT. In addition to these nine steps, it is still necessary to comply with the Personal Data Protection Act and Procedures (GDPR)<sup>13</sup> and then to obtain a Decision of the Competent Administrative service on meeting the technical, health, environmental and other conditions, Occupational Safety and Health. By issuing a Resolution of the Commercial Court as well as by filing with the above mentioned titles, the Limited Liability Company is registered to the owner and (or) responsible person in order to complete the process of initiating the entrepreneurial venture, even producing a table of companies, memos, business cards, the domain registration, the creation of a website, the creation of a professional site on social networks (networks) etc., is also imperative at present.

#### **4. EXTRACTION AND REFINEMENT OF MEDIA AND COMMUNICATION ASPECTS OF LAUNCHING AN ENTREPRENEURIAL VENTURE**

By analysing workflow activities when launching an entrepreneurial venture, it is concluded that the following segments, concepts and activities are inextricably linked to media and communication aspects: choice of company names, choice of core activity, visual design (sign, logo), making stamp, making memos, developing a business card, registering a web domain, registering e-mail addresses and creating e-mail signatures, creating a website as well as creating a professional site on social networks. The analysis of the media and communication aspects in the initiation of an entrepreneurial endeavor requires interdisciplinary knowledge of matter at the level of law, economics, information and communication sciences, psychology, sociology, language and history, since only the quality visualization of the enterprise is possible in a better way (Senčar, M. i Duh, M. : 2016) and ultimately branding companies, products, and (or) services. The choice of company names is the first and most important step. The well-chosen name reflects the identity of the product and distinguishes it from all the others on the market, strategically places it in the consumer's head and serves them as a landmark, a type of lighthouse. Choosing the right name is primarily a strategic decision. The name should not describe the product, but to point to it so as to stimulate an emotion in us, we should bear a

<sup>10</sup> Government of the Republic of Croatia: *Decision on National Classification of Activities* (2007)

<sup>11</sup> e-Pension <https://erps.mirovinsko.hr/>

<sup>12</sup> E-Insurance <https://e-usluge.hzzo.hr/home>

<sup>13</sup> *REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and on the non-application of Directive 95/46 /EZ (General Data Protection Regulation)*

message. The name must have soul! (Nela Milijic: 2008). *Nomen est omen* [no: 'men ~ o:' men] (lat.), The name is denoted; a term used when someone's name (or surname) carries a meaning that matches a person's personality<sup>14</sup>. Choosing a company name can make a difference between business success and failure. It has already been mentioned that the statutory regulation of the election of names is defined by the Companies Act, in the chapter of the Company. So, the company name is in other words company. Since 2013, the name of the company can be in all languages and on the letterhead. If their own names and surnames are used, prior consent must be obtained from the person or the franchisee. The process of selecting a company name is not done by selecting a name by checking it in the Court Registry of Companies<sup>15</sup>. This is a demanding and long-lasting job. Once the appropriate company name has been selected, it is necessary to choose the core business that the company will handle. For this purpose it is necessary to use the National Classification of Activities (NKD 2007) document. Choosing a core business with a potential interested public communicates the domestic presence in the business that the company deals with. Here is an example of the company eg *XY interiors* (SipmlyLtd) for construction and services. From the name of the company as well as the core business it is learned that it is a company for final internal works, however, contrary to the marketing slogan: "We make all kinds of facades"! Perhaps insignificant, however, a large number of companies under the Public Procurement Act<sup>16</sup>, based on industry, search databases and search for product or service bidding. According to Milton Glasser, design means "communicate with all the means you can control and control." Visual identity is a visual presentation system that enables the identification of a certain company or product on the market by consumers (valdez.hr: 2010). Many books have been written about the creation of the company's visual solution, many achievements in the field of interdisciplinary science have been achieved, including a collection of research results from the field of graphic technology, law, economics, information-communication science, visual art, psychology, sociology, language, history and so on endlessly. The Google search term offers approximately 287,000 results. The emphasis in this subtitle will be limited to defining basic concepts and required actions.

## 5. VISUAL IDENTITY OF A COMPANY

Visual identity involves making the company's personality in a way that meets the needs and demands of the market. That is, the integration of visual elements creates a unique image (identity, brand<sup>19</sup>) by which the company will be recognizable and thus better positioned on the market. The basic manual for designing and creating visual identity is the Standard Book (Tomiša, Milković: 2013), and includes precise definition of color and fonts (typography), allowed and unauthorized variations of the logo, the media to which it can be applied, the making of business cards, stamps, memorandums constitute the basic elements of visual identity. In the basic form, a visual solution is a sign and logo, while in media and communication reality they are only a component of a wider system of expression. Stamp is the official signature of the company. The stamp is officially official and without it no document has legal value. Nowadays, the seal is used to authenticate the authenticity of a document. The company table is an identification that represents the enterprise and as such it is the law is mandatory and must be noted at the address of the company's head office. The company's memo is often referred to as a business paper, a paper company, A4 format, and contains a number of preprinted information and labels that make business communication more efficient, faster, simpler, better, contributing to today's saving and saving materials, reducing fatigue secretary,

<sup>14</sup> Keywords *Nomen est omen*, in: Croatian Encyclopedia, Network Edition (2018), Lexicographic Institute of Miroslav Krleža, URL: <http://www.enciklopedija.hr/natuknica.aspx?id=44023>

<sup>15</sup> See *Court Register* Ministry of Justice of the Republic of Croatia, URL: <https://sudreg.pravosudje.hr/registar/f?p=150:1>

<sup>16</sup> More in the *Public Procurement Act* (2016), NN 120/2016, URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2016\\_12\\_120\\_2607.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2016_12_120_2607.html)

their greater efficiency in work, etc. Business Memo, except that it must comply with the standards that apply in the business world, must also be consistent with the company's visual identity. This means that the memo should take into account both its business and the advertising and visual dimension if we want to realize its function - a stimulus to the party we send a memo to business activity (Franjić: 2009). A business card is the first contact of the company and (or) the person acting on behalf of the company with a potential client or partner. Regardless of what message you want to send, if you want to leave the impression of seriousness, professionalism, traditionality, originality, openness or closeness or all in one, it is important to be professional and quality because it may be a new business opportunity and (or) the person who appears on behalf of the company and the new beginning (vemar.hr: 2019). A domain name is a unique name on the Internet. The domain name is most commonly associated with the name of the company, carries the name of the product or service. The domain name is unique; there can be no more domains of the same name. Domains are registered with the relevant institutions. In the Republic of Croatia, each company can register one free hr. domenu<sup>17</sup>. Checking domain availability can be checked on the URL: <http://www.carnet.hr/dns>. In addition to the national domain .hr there are generic top-level domains: .com, .org, .net, .edu, .biz, .info, .name etc. Before creating an e-mail address, it is necessary to register the web domain for an official email the address was with its own domain. E-mail is the most sought-after, most communicative and most important contact of a company. As a rule, an e-mail company should be in the form of [info@companyname.hr](mailto:info@companyname.hr) or [contact@companyname.hr](mailto:contact@companyname.hr). The use of Gmail, Hotmail, Yahoo and similar services is a free option, but it is not professional and does not look professional. Such a solution does not corroborate the identity of an enterprise or a person acting on its behalf because anyone can actually open an email with any name and the user can give up contact if thinks it may not be an official e-mail. Within the enterprise, general e-mail addresses can be opened for individual sectors or departments eg [marketing@companyname.hr](mailto:marketing@companyname.hr) or [accounting@companyname.hr](mailto:accounting@companyname.hr) etc. and one or more persons can receive email messages sent to that address. The structure of an email address is an internal decision of every business and, to some extent, you can judge how serious or untrustworthy it is in online communication. Along with the name of an e-mail company, the e-mail signature is even more important. E-mail signature<sup>18</sup> is a block of text that is added to the end of an e-mail message that often contains the sender's name and contact information. E-mail signature creates a fundamental impression of the enterprise and business of the company. The e-mail signature e-mail signature has two tasks, which is to attract the attention of the reader and to provide the reader with information about the company and the person acting on behalf of the company. According to the results of the global study of Google Internet Consumer Study 2017, conducted by the Kantar TNS agency on behalf of Google, 74% of the population of the Republic of Croatia uses the Internet, so it can rightly be said that e-mail and e-mail signature are initially mirror companies and greatly affect at the first impression of every potential client. Website is the basic web component, and its graphically formatted content can be viewed with the help of a web browser on the computer screen. WWW (World Wide Web) is a service used on the Internet. In addition to the text, the site may also include multimedia elements (images, animations, sound or video) and interactive and other dynamic elements, all in the form of separate accompanying documents. All the documents on one page are placed on a web server (ISP) by an Internet Service Provider providing web hosting services. The website has its own unique name and location link - the URL is an acronym for eng. the term Uniform Resource Locator, in a translation - a consistent or coordinated content locator (resource). Websites have become the driving force behind the growth and business development of many participants in

<sup>17</sup> See *Rule on Organization and Management of the Top National Domain on the Internet* (2010), URL: <https://domene.hr/portal/files/HRTLDpravilnik2010hr.pdf>

<sup>18</sup> Cf. *E-mail signature*, URL: <https://www.techopedia.com/definition/1662/email-signature>

launching an entrepreneurial venture and which companies have recognized the importance of attendance at the largest global network in time. Today, more and more people use the internet to search for information, so it is understandable that without the website and presence on the internet, the company cannot build its credibility and online reputation. Lack of information about a particular company on the Internet, or its business, products or services, gives the customer the impression that the company is not doing business seriously or is no longer active in the market. In conclusion, it can be said that the website represents a personal map of each company. Facebook<sup>19</sup> as the largest social platform provides countless opportunities to reach a large number of people. Whether it is a commercial purpose, such as product promotion and sales, or just private. Facebook page or Facebook page is the tool we use just for promotion and information purposes. The Facebook page can be viewed as an extended business card of a company, community, project or other group of people. You publish content such as pictures, texts, and videos on your personal wall as well. Of course, there are a few differences in personal profiles, and the first is that these sites are public and available to all users and can all like them. Equipped with tools that help you make everyday communication with people who accompany your site, make it easier for you to post content, promote and communicate with your users, providing you with everything you need for what community managers do (Horvat: 2016). With the emergence of smartphones, social communication applications have emerged as an alternative to classic SMS (Short Message Service) and MMS (Multimedia Messaging Service) messages to mobile networks. With its economy and speed of sending messages anywhere in the world, they quickly attracted many users. The great advantage of social applications for communication is their availability. Each user can install multiple such applications on their device and use them simultaneously. List of popular social apps: Skype, WhatsApp, Facebook Messenger, Viber, Telegram, Slack, ICQ, Snapchat, Signal, WeChat, Google Hangouts.

## 6. CONSLUSION

Attention to media and communication aspects must be present from the very beginning in the start-up of an entrepreneurial venture since every deliberate process enhances the branding of the final product, service or business entity as a whole, while deficient or partially satisfied forms lead to confusion in the perception of the end user or future business partner. This paper outlines and clarifies 12 media and communication aspects when launching an entrepreneurial venture. The choice of company names, core business, stamp design and company bill are conditioned by law, while all other aspects represent a choice. However, we dare to conclude here, although they represent a choice, from the launch of an entrepreneurial venture to a successful branding of the final product, service or business entity as a whole, are a necessity. Each of the distinct and precise media and communication aspects assumes knowledge, skills and (or) financial expenses. How important it is to know a plethora of legal provisions and regulations is so important to think about media and communication aspects. It is to be expected in the near future, through the perspective of scientific and educational curricula, to take care of the profiling of an expert and qualified staff who will be able to respond adequately to the challenges of today and increasingly demanding markets. Creating a new paradigm of launching an entrepreneurial venture from scientific and legal premises to empirical, commercially viable and technologically feasible solutions is the key to every future entrepreneur's solution. And every one who advises the one who does not know.

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<sup>19</sup> In this paper, we will limit ourselves to the social network Facebook, which according to the research of Arbona d.o.o. from February 2018, there are 2,000,000 users in the Republic of Croatia and the most widely used and most widely used social network. According to various indicators, social networks such as Instagram, YouTube, LinkedIn, Twitter, Snapchat have been widely used, but are not so relevant to business content.

**LITERATURE:**

1. Buhač, Ljiljana (2006): *Practical tips on communicating with a business card*, URL: <http://www.poslovni-savjetnik.com/sites/default/files/PS%2018,%2034-35.pdf> (accessed 12.02.2019.)
2. Court Register of Companies URL: <https://sudreg.pravosudje.hr/registar/f?p=150:1>
3. Croatian Encyclopedia, Network Edition (2018), Miroslav Krleža Lexicographic Institute, URL: <http://www.enciklopedija.hr/natuknica.aspx?id=44023> (accessed 09.02.2019.)
4. *Decision on National Classification of Activities* (2007), URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2007\\_06\\_58\\_1870.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2007_06_58_1870.html) (accessed 29.01.2019.)
5. Dračić, Irma (2012): *Enterprise Business and Entrepreneurial Environment*, Croatian Employment Service, Varaždin.
6. Frančić, A. and Petrović, B. (2014): *Personal Names in the Great Dictionary of Foreign Words, Expressions and Abbreviations*, in: Bratoljub Klaić. *Discussions: Journal of the Institute for Croatian Language and Linguistics*, 40 (2), 275-287. URL: <https://hrcak.srce.hr/131481> (accessed 09.01.2019.)
7. Franjić, Željko: *A memo - a mirror of office business*, URL: [http://www.poslovni-savjetnik.com/sites/default/files/Tajnica%2021%2005\\_2009.pdf](http://www.poslovni-savjetnik.com/sites/default/files/Tajnica%2021%2005_2009.pdf) (accessed 12.02.2019.)
8. Horvat, Igor (2017): *What's how to make Facebook page?*, URL: <https://www.ucionica.net/internet/sto-je-i-kako-napraviti-facebook-page-4104/>, (accessed 13.02.2019.)
9. *How to choose a company name?* <https://www.ditdot.hr/kako-odabrati-ime-za-firmu> (accessed 24.01.2019.)
10. Hunjet, A., Kozina, G. and Milković, M. (2012): *Acquisition of Knowledge and Skills for the Future in Entrepreneurship*, in: *Learning for Entrepreneurship*, 2 (2), pp. 103-115. URL: <https://hrcak.srce.hr/130251> (accessed 29.01.2019.)
11. *Inspiring and failed logos* URL: <https://vdocuments.net/inspiring-and-failed-logos.html> (accessed 09.01.2019.)
12. *Instructions for making a business card*, URL: <https://degraf.hr/izrada-vizitke.htm> (accessed 09.01.2019.)
13. Inventum Informatics Services (2004), URL: <http://www.inventum.hr/dizajn/vizualniidentitet> (accessed 09.01.2019.)
14. Jankac, Tibor (2016): *The content of the memo and website of the company*, URL: <http://www.ekonos.hr/ostalo/propisani-sadrzaj-memoranduma-23i-internet-stranice-društvo-2/> (pristupljeno 09.01.2019.)
15. Jurčić, Mateja (2015): *Visual identity as an element of successful business management and business*, Final work. Josip Juraj Strossmayer University of Osijek, Faculty of Philosophy, Department of Information Science, URL: <https://zir.nsk.hr/islandora/object/ffos%3A17> (accessed 08.01.2019.)
16. Jurković, Maja. (2014): *Impossible name of company - how to choose and register*, URL: <http://www.womeninadria.com/ubojito-ime-tvrtke-kako-ga-odabrati-registrirati/> (accessed 29.01.2019.)
17. Matejčić, Barbara (2008): *We propose 6000 names for each new brand*, in: *Business Diary*, URL: <http://www.poslovni.hr/marketing-i-mediji/za-svaki-novi-brend-predlozimo-6000-names-103,496th> (accessed 09.01.2019.)
18. *Postcard*, URL: <https://www.hrleksikon.info/definicija/posjetnica.html> (accessed 09.01.2019.)
19. *Rulebook on Organization and Management of the Top National Internet Domain* (2010), URL: <https://domena.hr/portal/files/HRTLTDpravilnik2010hr.pdf> (accessed 12.02.2019.)



20. Senčar, M. and Duh, M. (2016): *Quality visualization of the company for a better recognition*, in: *Media, Culture and Public Relations*, 7 (1), 43-56, URL: <https://hrcak.srce.hr/159922> (accessed 29.01.2019.)
21. Spencer, Laura (2016): *9 Professional Email Signs Tips - Best Template Examples*, <https://business.tutsplus.com/en/articles/9-professional-email-signature-tips-with-best-template-examples-cms-26357> (accessed January 12, 2019)
22. *The Companies Act* (2011), URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2011\\_12\\_152\\_3144.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2011_12_152_3144.html) (accessed 12.01.2019.)
23. *The Law of cooperatives* (2019). URL: <https://www.zakon.hr/z/458/Zakon-o-zadrugama>, (accessed 29.01.2019.)
24. *The Law of craft* (2003), URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2003\\_03\\_49\\_625.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2003_03_49_625.html) (accessed 29.01.2019.)
25. *The Law of family farming* (2018), URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2018\\_03\\_29\\_585.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2018_03_29_585.html) (accessed on 29.01.2019.)
26. *The Law of stamp* (2019), URL: [https://narodne-novine.nn.hr/clanci/sluzbeni/2019\\_02\\_14\\_272.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2019_02_14_272.html) (accessed 14.02.2019.)
27. Tomiša, Mario and Milković, Marin (2013): *Graphic design and communication*, Polytechnic of Varaždin, Varaždin.

# BRAND-ORGANIZED CONTESTS IN VIRTUAL BRAND COMMUNITIES AS A TOOL FOR INCREASING CONSUMER'S ACTIVITY

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## ABSTRACT

*In today's turbulent economy characterized by rapidly changing markets, maintaining the loyal customer-base became a significant difficulty for the companies, mostly due to the multitude of brands and intensive marketing activities of the competitors. Therefore, companies strive to build and keep the competitive advantage by engaging consumers in various brand-related events. Currently, numerous of these activities take place in social media, precisely on the websites of virtual brand communities. Virtual brand communities are social media groups, gathered around certain brands, enabling bilateral information exchange between brands and the consumers. Fanpages, where these communities are located, allow brand representatives as well as community members to share content in form of text or graphic posts, comments, use of reaction buttons, etc. Such websites also provide the possibility of organizing brand-related contests and lotteries, where the participating fans can win various prizes. The aim of this article is to present the popularity of contests organized on fanpages as well as their potential to increase brand loyalty and raise brand awareness among users outside the communities. The basis for the paper was an empirical quantitative research, carried out by indirect data collection with the use of survey technique among 650 Polish Internet users, of which 277 were members of virtual brand communities. The results indicate a moderate interest of fans in contest participation. Still, the research has shown the positive correlation between engagement in competitions and brand loyalty, presented in the purchase intentions. Moreover, the aspect of sharing brand-related content as the prerequisite of contest participation and its potential of raising brand awareness has been highlighted.*

**Keywords:** *fanpages, marketing communication, social media marketing, virtual brand communities*

## 1. INTRODUCTION

Current period in economy is characterized by rapid changes in the marketing environment, including dynamic conversion of trends. In such circumstances, along with the multitude of brands available on the market and intensive marketing activities of the competitors, acquiring and retaining a loyal customer-base turned into a crucial challenge for the companies. Thus, modern enterprises strive to maintain their competitive advantage in diverse ways, one of them being engaging the consumers in various brand-related events to tighten their bond with the brand. Nowadays, a multitude of these activities take place in social media, precisely on the websites of virtual brand communities – groups connected by common consumption patterns, enabling bilateral information exchange between brands and the consumers (Zheng, et al., 2015, pp. 90–106). One of the interactivity options on the fanpages, where the communities operate, is the organization of brand-related contests and lotteries. The main objective of this article is to present the popularity of competitions organized by the marketers on fanpages as well as their potential to increase brand loyalty and raise brand awareness among users outside of the communities. To achieve this goal, an empirical quantitative research was carried out by means of indirect data collection with the use of survey technique. The respondents group consisted of 650 Polish Internet users, of which 277 were members of virtual brand communities.

## 2. LITERATURE REVIEW

Along with the rapid development of the Internet technologies and the constantly increasing popularity of social media, many aspects of everyday life have also undergone significant changes. Digital tools, including portals such as Facebook or Instagram, provided the users with the possibility of quick, easy and efficient communication without geographical constrictions. In addition, social media have vastly reshaped the way users acquire and generate information, including the consumption-related knowledge, switching their position in the media from passive readers into “active co-creators”, who are able to openly voice their opinions and thoughts (Carvalho, Fernandes 2018, pp. 23–37; Yang, et al. 2016, pp. 526–557). Therefore, the content published there is also strongly influencing the decision-making process preceding the purchase – consumer often consider the views of their peers as more trustworthy than the brands’ marketing communication (Algharabat, et al., 2018, pp. 139–149; Logan, et al., 2012, pp. 164–179). One of the basic concepts connected with social media marketing are the virtual brand communities – groups operated on portals’ sub-sites (fanpages), connected by common passions and views reflected in their purchase decision (Siuda, Grębosz-Krawczyk, 2018, pp. 54–55). One of the key features of such groups is the two-way communication, resembling a real-time dialogue, between the members as well as with the brand representatives (Woisetschläger, et al. 2008, pp. 237–256). It has been proven that participation in these collectives positively influences consumer engagement, brand loyalty and its antecedents (Hsieh, Wei 2017, pp. 2–9; Liu, Lopez 2016, pp. 1–13), as well as the willingness to engage in brand’s value co-creation (Kamboj, et al. 2018, pp. 169–185). Nowadays, social media marketing activities, including managing the brand’s fanpage, are practically an indispensable part of the modern marketing strategy. Many of the marketers acknowledge that such channels are their initial choice when it comes to communication connected with creating the awareness of the products and inspiring to use them (Dwivedi, et al., 2015, pp. 289–309; Shareef, at al., 2019, pp. 58–69). A crucial issue in effective social media is to engage the fans in the interaction on the community’s website. Brand representatives use various methods of getting the users to act, e.g. by publishing posts containing questions, arranging polls, etc. One of the options of interacting with the fans of the brand are various brand-related contest, organized by the marketers on the fanpage. The contests are usually arranged in two forms: a lottery or a competition with a specific task. To enter the lottery, fans might be asked to use the reaction button under the post regarding the event or to take part in a poll (e.g. where a new product or a certain improvement of the offer is chosen by users). Competitions require the participants to perform a certain task, therefore they are also sometimes called the “urge-to-act content” (Rahman, Suberamanian et al., 2016, p. 1408). In this type of activity, community members are obliged to undertake a specific action, often relying on their creativity e.g. make a photograph, write a short text, prepare a drawing, etc. Such competitions may also carried out in form of innovation contests (Ebner et al., 2010, pp. 342–356), which utilize the crowdsourcing concept, i.e. the generation of ideas for new products or improvements of existing ones, performed by the community members (Leimeister et al., 2009, p. 1–44). The contests also help the companies in raising the brand awareness. The actions of the community members, such as posting various types of content on the fanpage, is visible to their social media “friends”, spreading the information about the brand. Moreover, many lotteries and competitions require to share the brand’s post regarding the event on the participants’ newsfeeds. It is worth underlining that in this way the brand-related content becomes a subject of nonlinear diffusion of information (Matsubara, et al. 2017, pp. 1–40), understood as the fact that one persons’ post can trigger the viral effect of sharing and reposting, making the content known to large audience in a relatively short time (Chang, et al., 2015, pp. 777–782). In this way, the information about the brand may reach those social media users who had not heard about it before and the competition itself might attract more participants.

### 3. RESEARCH METHODOLOGY AND RESULTS

The main aim of the research carried out by the author was to evaluate the participation of virtual brand community members in the contests and lotteries organised by the brand representatives on the fanpages. Additionally, the willingness to share brand-related content as a condition of involvement was investigated. Moreover, the author has analysed the community members' loyalty towards the brand and compared it to the level of loyalty of those consumers from outside of the community. To achieve the principle objective of the study, the author applied the method of empirical quantitative research in form of indirect data collection with the use of survey technique, carried out in the 3rd quarter of 2017 among a representative group of 650 Polish Internet users. In the interviewed group, 277 respondents declared their participation in at least one brand community in the social media and their answers constituted for the basis of the performed analysis. The author applied the percentage calculations for the initial analysis, as well as the logistic regression method to investigate the consumer loyalty and its relation to the participation in brand-organised contests.

#### 3.1. Participation in brand-organised contests

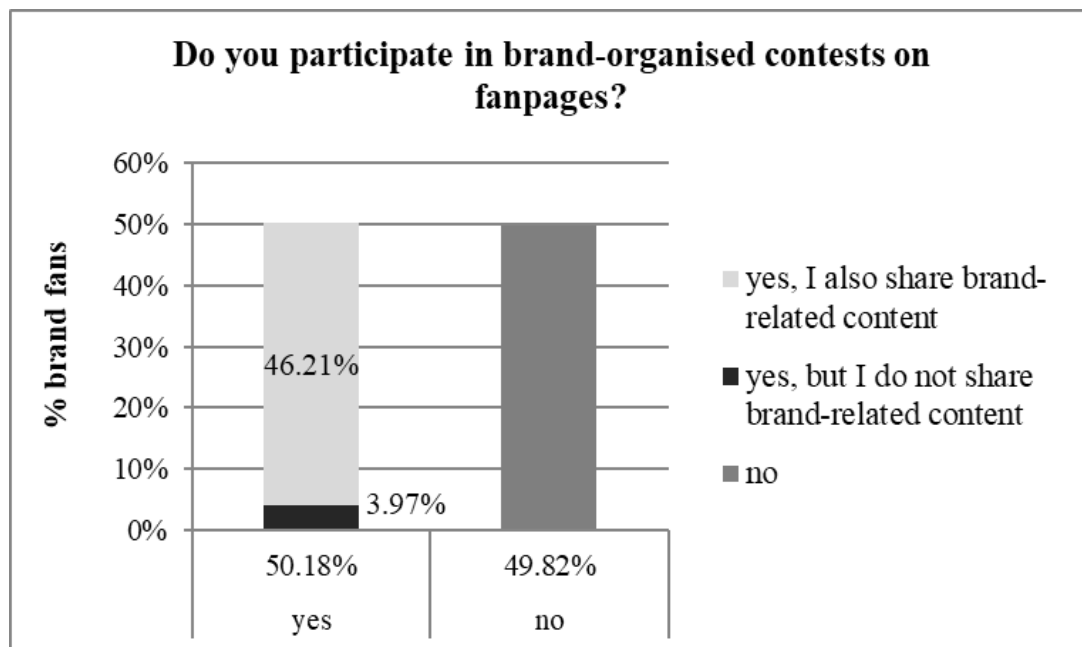


Figure 1: Virtual brand communities members' participation in brand-organised contests and lotteries on fanpages (own elaboration on the basis of empirical research)

The results of the research indicate that a half of the interviewed virtual brand communities members declared their participation in brand-organised contests and lotteries, which were carried out on the fanpages (Pic. 1). Moreover, 46.2% of the respondents admitted the readiness to share the content related to the competition on their private profiles, if it is the prerequisite for participation. It is worth to underline especially the second result as it proves the usefulness of the contests as the method of improving the brand's visibility in the social media and attracting new fans to the community. The content shared by the fans is visible to their social media friends, therefore making these friends aware of the brand, potentially interested in pursuing more information and, eventually, willing to purchase the products of which they have learned through the contact with competition-related posts. The willingness to participate in the competitions and lotteries is to some extent different among the age groups, although it is impossible to distinguish an unequivocal trend in this matter. The two youngest groups represent a slightly lower level of interest in contests in comparison with the overall result.

48.7% of the brand communities' members aged 18-24 declare their participation (97% of the participants share the contest-related posts), while in the age range of 25-34 this result amounts to 45.9% (86% of which repost the brands' publications). Community members from the two older group have shown greater willingness to engage in the competitions – in the age range of 35-44 it is declared by 66.1% (95% of them sharing the fanpage content), and in the group aged 45-55 by 56.3% (77.8% of which repost the marketers' posts on their private newsfeeds). The group least interested in such events are the members aged 55-64, of which only 30.7% declare their participation (3/4 of them sharing the news about the contests). The willingness to take part in competitions increases among the eldest brand community members (65 and older), of which 60% have engaged in such event at least once. It is worth mentioning that despite a relatively high interest in contests, this group is the most reluctant towards sharing the contest-related information – it is done only by 1/3 of the respondents declaring their participation. The differences in results can be also noticed between both sexes. Women more eagerly engage in competitions and lotteries organized on fanpages. 54.9% of female brand community members admit to have taken part in such event, in comparison to 45.2% of men. However, men are more willing to share brand-related content as the prerequisite to participate – it is done by 96.7% of those engaging in contests, in comparison with 88.5% of women.

### 3.2. Contest participation and its impact on brand loyalty

The author have also investigated the impact of the willingness to participate in brand-organised contests and lotteries on fans' loyalty. For this purpose, two additional questions have been asked, regarding the purchase decisions connected with the brands known from fanpages. The questions concerned two potential situations of choosing the brand to buy – in the first situation the brand known from the fanpage and the competing brands have similar price, and in the second the community-related brand was more expensive.

*Table 1: Impact of participation in brand-organised contests on the choice of the brand known from the brand community, in the situation where the brand is of similar price than competing offering (own elaboration on the basis of empirical research)*

	<b>OR</b>	<b>95%CI</b>	<b>P</b>
<b>Participation in brand-organised contests on fanpages</b>			
no	1.000	Reference	
yes	1.503	(0.907-2.492)	0.112
<b>Willingness to share brand-related content in order to participate in competition</b>			
no	1.000	Reference	
yes	1.747	(1.037-2.943)	<b>0.03515</b>

The analysis performed with the use of logistic regression method has revealed that virtual brand communities' members participating in contests indeed are more willing to choose the brand known from the fanpage (in the situation where competitor's offering is of similar characteristics and price). The calculations indicate that fans engaging in such events decide to purchase the brand from the community 1.5 times more often than those who do not participate, although this result is not statistically significant. Moreover, the community members who share brand-related information to enter competitions tend to choose the brand from the fanpage almost 2 times more frequently than those who do not. This indication is of statistical significance. Therefore, the analysis proves the positive impact of involvement in contests on the brand loyalty, implying the need for convincing more fans to engage in such undertakings.

*Table 2: Impact of participation in brand-organised contests on the choice of the brand known from the brand community, in the situation where the brand is of higher price than competing offering (own elaboration on the basis of empirical research)*

	<b>OR</b>	<b>95%CI</b>	<b>P</b>
<b>Participation in brand-organised contests on fanpages</b>			
no	1.000	Reference	
yes	2.158	(1.300-3.584)	<b>0.00281</b>
<b>Willingness to share brand-related content in order to participate in competition</b>			
no	1.000	Reference	
yes	2.315	(1.387-3.863)	<b>0.00126</b>

The second situation analysed by the author was a choice between the brand known from the virtual community and a competing one of similar characteristics, when the first one is more expensive. In this case, the positive influence of brand-related competitions is observable as well. Fans who participate in contest decide to buy the brand from the fanpage, despite the price difference, over 2 times more often than those not participating. What is more, the members who share marketers' posts in such situations choose the more expensive brand almost 2.5 times more often. Both results are statistically significant.

#### **4. CONCLUSION**

The research carried out by the author presents an important role the brand-organised contests play in raising brand awareness and increasing the fans' loyalty. Participation in competitions and lotteries can be connected with influencing the purchase decisions in favour of the brand, while sharing the contest posts help to expand the knowledge of the brand by employing the snowball effect of reposting information by growing number of users. Knowing the advantages and high potential of utilizing contests in social media marketing strategies, brands' representatives should aim at attracting as many participants as possible. In the survey, half of the interviewed brand communities' members have admitted to taking part in such events. It indicates that the marketers should intensify their efforts regarding preparing an interesting offer of brand-related competitions. What is also worth underlining is the fact that almost all of the contests' participants declare their willingness to share elements of fanpage content in order to join the game. Such result stipulates that the marketers should not hesitate to state such prerequisites in the rules of the competitions as they will probably not discourage fans. The indication regarding the readiness to repost marketers' posts proves the capability of contests in the area of raising brand awareness, therefore it should be a clear signal for the brands' representatives to tap into this potential and not resign from organizing such events. The connection between participation in contests and consumer choices should also not be underestimated. The logistic regression calculations show that brand communities' members who take parts in various brand-organised games tend to be more loyal to the brand than those not participating. It can be noticed especially in the situation of choice between two similar products, where the one known from the community is more expensive – under such circumstances the playing fans are choosing the brand in question 2 times more often. These indications might be treated as one more reason to include the competitions and lotteries into the brand's social media marketing strategy. The conclusions of the research are presented with the caveat as to the limitations of the sample (only Polish Internet users filled took part in the survey). An interesting idea for the future research might be to compare the results of similar studies performed in various other countries.

Moreover, the preferences of fans regarding the type of contests might be investigated to find out what kind of tasks encourage the fans to participate (e.g. creative tasks such as making photographs, writing shorts texts or tasks connected with knowledge, such as quizzes).

#### LITERATURE:

1. Algharabat, R., Rana, N.P., Dwivedi, Y.K., AlAlwan, A. and Qasim, Z. (2018). The effect of telepresence, social presence and involvement on consumer brand engagement: an empirical study of non-profit organizations. *Journal of Retailing and Consumer Services*, 40, 139–149.
2. Carvalho, A., Fernandes, T. (2018). Understanding Customer Brand Engagement with Virtual Social Communities: a Comprehensive Model of Drivers, Outcomes and Moderators. *Journal of Marketing Theory and Practice*, 26(1–2), 23–37.
3. Chang, Y.T., Yu, H. and Lu, H.P. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, 68(4), 777–782.
4. Dwivedi, Y.K., Kapoor, K.K. and Chen, H. (2015). Social media marketing and advertising. *The Marketing Review*, 15 (3), 289–309
5. Ebner, W., Leimeister, J.M. and Krcmar, H. (2010). Community Engineering for Innovations: The Ideas Competition as a method to nurture a Virtual Community for Innovations. *R&D Management Journal*, 40(4), 342–356.
6. Hsieh P.-L., Wei S.-L. (2017). Relationship formation within online brand communities: Bridging the virtual and the real. *Asia Pacific Management Review*, 22, 2–9.
7. Kamboj, S., Sarmah, B., Gupta, S. and Dwivedi, Y. (2018). Examining branding co-creation in brand communities on social media: Applying the paradigm of Stimulus-Organism-Response. *International Journal of Information Management*, 39, 169–185.
8. Leimeister, J.M., Huber, M., Bretschneider, U. and Krcmar, H. (2009). Leveraging Crowdsourcing – Theory-driven Design, Implementation and Evaluation of Activation-Supporting Components for IT-based Idea Competitions. *Journal of Management Information Systems*, 26(1), 1–44.
9. Liu, Y., Lopez, R.A. (2016). The Impact of Social Media Conversations on Consumer Brand Choices. *Marketing Letters*, 27, 1–13.
10. Logan, K., Bright, L.F. and Gangadharbatla, H. (2012). Facebook versus television: advertising value perceptions among females. *Journal of Research in Interactive Marketing*, 6, 164–179.
11. Matsubara Y., Sakurai Y., Prakash B.A., Li L. and Faloutsos C. (2017). Nonlinear Dynamics of Information Diffusion in Social Networks. *ACM Transactions on the Web*, 11(2), 1–40.
12. Rahman, Z., Suberamanian, K., Zanuddin, H., Moghavvemi, S. and MdNasir, M.H. (2016). SNS Metrics Analysis. A Study on Fanpage Interactive Contents. *International Journal of Applied Business and Economic Research*, 14, 1405–1415.
13. Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P. and Islam, R. (2019). Social media marketing: Comparative effect of advertisement sources. *Journal of Retailing and Consumer Services*, 46, 58–69.
14. Siuda D., Grębosz-Krawczyk M. (2018) Consumer's Loyalty – Case of the Virtual Brand Communities. *Proceedings from the 25th EBES Conference*, Berlin, 53–62.
15. Woisetschlager D.M., Hartleb V. and Blut M. (2008). How to Make Brand Communities Work: Antecedents and Consequences of Consumer Participation. *Journal of Relationship Marketing*, 7, 237–256.

16. Yang, Sh., Lin Sh., Carlson J.A.. and Ross Jr. W.T. (2016). Brand Engagement on Social Media: Will Firms' Social Media Efforts Influence Search Engine Advertising Effectiveness?. *Journal of Marketing Management*, 32(5–6), 526–57.
17. Zheng, X., Cheung, C. M., Lee, M. K. and Liang, L. (2015). Building brand loyalty through user engagement in online brand communities in social networking sites. *Information Technology & People*, 28(1), 90–106.



# LUXURY GOODS IN ECONOMICS

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## **ABSTRACT**

*The contemporary markets are changing. The main reason of this evolution is the change in character of modern goods. Some markets develop fastly and some diminish. Nowadays the luxury goods market is perceived as one of the fastest growing markets. The paper focuses on luxury goods and tries to compare the past and the modern meaning of this category. It describes the main features of luxury goods and their evolution. It also analyzes luxury goods in comparison to necessity goods. The luxury goods are analyzed from the point of view of modern economics*

**Keywords:** *conspicuous consumption, luxury, necessity goods, luxury goods, new luxury*

## **1. INTRODUCTION**

Luxury is well-known concept from ages. But understanding of luxury is constantly changing. Many goods which were perceived as luxury in the past, such as: fresh flowers, pianos or exotic fruit are nowadays treated as normal or ordinary goods or even as necessity goods. The 17th edition of Bain & Company's annual luxury study identifies some trends that changes the nature of contemporary luxury markets [Bain & Company, 2018]. Among them are listed: dominance of Chinese consumers' (both in China and abroad), constantly increasingly shopping for luxury online, changes in consumer profiles (luxury consumer is getting younger and more diverse, special importance is dedicated to Generation Z and Millennials), increasing role of cultures and subcultures which take over consumption trends, reduction of foot traffic in physical stores which cause footprint consolidation (similar to what has already happened in other retail sectors), cross-over of typical competitive boundaries and constant growing profitability of luxury market. The traditional concept of luxury goods, well-know in last two centuries, seems be nowadays only a historical category. Modern understanding of luxury is different because customers, goods and markets are different. The paper focuses on the concept of luxury goods and tries to compare the past and the modern meaning of this category. In the paper the main features of luxury goods are described and their evolution is presented. Also luxury goods are discussed in opposition to necessity goods.

## **2. LUXURY, NEW LUXURY, CONSPICIOUS CONSUMPTION**

The nature of luxury is constantly changing and this makes it difficult to formulate an universal definition of luxury. Luxury is "constantly on the move" [Kapferer, 2008, p. 96] and often changes its appearance [Jäckel & Kochhan 2000, p. 89; Mortelmans 2005, p. 504], which means that this economic and sociological concept remains subject to a constant process of review and improvement. Etymologically, the word luxury has two possible meanings. It can be derived from the Latin word 'lux', which means light, luminosity or luminance. It also can be originated from Latin word "Luxus" which signifies "soft or extravagant living, overindulgence and sumptuousness, luxuriousness and opulence" [Dubois et. al., 2005]. Traditionally, luxury has been associated with exclusivity, status and quality [Atwal & Williams, 2009, p. 339]. Although the connotation of term „luxury” was also negative as it was characterized by adverse qualities such as lechery, lustfulness and wanton behavior. It is worth to notice that English term luxury has a much more wider meaning than the French luxe, and seems to comprise both luxe and luxure, the luxus, or luxuria, and luxuries of the Latin writers.

Not only the origin of “luxury” term is confusing but also the meaning of luxury was changing in the history. Before the 19<sup>th</sup> century the world of luxury was virtually totally isolated from the rest of economy and dedicated to the very small elite. The rest of population lived in subsistence economy. During the next centuries the understanding of that concept was evolving and expanding. Increased prosperity and the ongoing democratization process made luxury both more accessible and acceptable to all customers, not only to very small group of people - the elite. Additionally the Industrial Revolution and female emancipation created the moral justification of luxury. Kapferer and Bastien [2012, p. 9] claim that the women’s emancipation efforts throughout the 19<sup>th</sup> and the 20<sup>th</sup> century further spurred the social legitimization of luxury. Furthermore, the processes of industrialization of economies and democratization of societies increased the level of individuals income and societies’ spending power. Later on the process of markets globalization, long-lasting periods of peace and the development of mass communication influenced the popularity and existence of luxury goods among societies and therefore caused its popularization and social and economic justification. The next era of luxury democratization is taking place right now [Mao, 2017]. Rapid expansion in recent years in the number of consumers who are able to purchase luxury goods has been called again the “democratization” of luxury goods [Okonkwo, 2016, Vickers and Renand, 2003]. Kapferer [2012] states that the consumption level of luxury goods in postmodern societies has given everyone a right to access luxury. This phenomenon counteracts the previous perception that luxury goods are for those of upper class and essentially allows marketers to target different segments. A revolution has taken place because individuals in the world have got richer. Luxury is no longer the embrace of the kings or queens but the mass marketing phenomenon of everyday life [Yeoman and McMahon-Beattie, 2011] In other words, luxury has become luxurincation of the commonplace [Berry, 1994; Twitchell, 2001]. Compared with the traditional clientele, new consumers of luxury services and products typically have different characteristics, lifestyles, desires, and purchasing behavior. Therefore, they also have different consumption motives and purchase intentions. Vigneron and Johnson [1999] indicate that consumer behavior regarding luxury goods is the result of multiple motivations, namely three types of interpersonal effects on luxury goods consumption:

specifically:

- the Veblen effect (Conspicuous Perception),
- Snob effect (Uniqueness Perception),
- Bandwagon effect (Social Value Perception),

and two types of personal effects:

- Hedonism effect (Emotional Value Perception),
- Perfectionism effect (Quality Value Perception).

As mentioned above, in modern economics, some consumer behavior (called effects) are typical for luxury good consumption. Especially one of them, the Veblen effect is very well-known and popular in microeconomics. The economic literature on luxury goods and conspicuous consumption originates from the work of Thorstein Veblen [1899] and John Rae [1905] in the 19<sup>th</sup> century. Thorstein Bunde Veblen (1857–1929) was a Norwegian-American economist and sociologist, one of the founders of institutional economics. He wrote “The Theory of the Leisure Class” in 1899, based entirely on observation. It contrasts to the neoclassical approach, which assumes the individual's maximization of utility according to exogenous preferences he claimed that preferences are determined socially depending on the positions of individuals in the social hierarchy.[Trigg, 2001]. Veblen was one of the first theorists who argued that consumption is actually a process of socialization and goods have a function as markers of social class

[Patsiaouras, 2010]. He argues that “wealthy individuals often consume highly conspicuous goods and services in order to advertise their wealth, thereby achieving greater social status”. [Bagwell and Bernheim, 1996]. He named this kind of unnecessary and unproductive expenditures, as conspicuous consumption. Veblen ignored that customers from the lowest scales of the hierarchy could also engage in conspicuous consumption. Therefore, nowadays conspicuous consumption is seen mistakenly as an exclusive instrument for the rich. Finally, even after a closed reading and analysis of the different arguments given in *The Theory of the Leisure Class*, the formulation of Veblen's most famous concept is not sufficiently clear to permit any general agreement on its definition. [Campbell, 1995]. The concept of Bandwagon, Snob, and Veblen Effects were first introduced in the theory of consumers' demand by Leibenstein [1950], to describe the desire of some consumers to be “in-style,” the attempts by others to attain exclusiveness, and the phenomena of conspicuous consumption. Literature often associates the demand for luxury goods with the desire for distinction, where individual valuation of a given good decreases as the number of individuals purchasing it increases. Harvey Leibenstein's [1950] defines the bandwagon effect as the extent to which the demand for a commodity is increased due to the fact that others are also consuming the same commodity. It means that particular consumers may buy more of a good when they find out that others buying it. The main reasons of such behavior is the wish to conform, to be fashionable or just to follow the lead of others. Price is not the main indicator of prestige. The bandwagon consumers place greater emphasis on the effect they make on others while having and consuming luxury products. The snob effect is the opposite of the bandwagon effect. It describes the consumer desire to be different and unique. In other words the snob effect refers to the desire to possess a unique commodity, usually having a prestige value. The high price usually is perceived as the indication of uniqueness. Hedonism effect (or hedonic effect) describes emotional values. The most important for hedonic consumers are their own desires, emotions and satisfaction. They usually attach less importance to price and the price isn't the main indication of prestige for them. Perfectionism effect describes customers who trust only their own thoughts and feeling but they usually treat price as main indicator of high quality and uniqueness of particular product. The new and different consumption motives and purchase intentions forced the necessity of rewriting the traditional definition of luxury. Michael J. Silverstein and Neil Fiske, have had a formative influence on the concept of new luxury. In their book “Trading Up” [Silverstein and Fiske, 2005], first published in 2003, they present new luxury as profitable business strategy based on developing and marketing high quality products to middle-market consumers who are willing and even eager to pay very high prices for those product categories, they give priority too. Nowadays the term “new luxury” is frequently invoked to explain the contemporary market for luxury but just as in the case of luxury in general, the consensus definition is still not existing.

### **3. LUXURY GOODS – MAIN CHARACTERISTICS**

The traditional luxury goods share most, if not all, main eight distinct qualities [Dewey, 2009]:

- the brands are family owned for generations
- the goods share extraordinary creativity and design
- the goods have got proprietary “savoir faire”
- the goods are usually made by hand
- the goods are exceptional quality
- the goods are rare or very limited in availability
- the goods are purchased by the world's most discerning clientele
- the goods are extremely expensive

The main features listed above can be distilled into three comprehensive attributes that all luxury goods must possess:

- extraordinary and unique creativity and design
- exceptional materials and supreme quality
- rarity and extremely high price.

Dubois and Czellar [2001, p. 8] empirically identified main characteristics that reflect the core of a luxury brand and are nowadays usually used to describe luxury goods:

- very high price
- scarcity and uniqueness
- excellent quality
- aesthetics and polysensuality
- superfluosity

The main characteristics of luxury good is usually very high price, which is so-called expensiveness. It reflects the absolute value of the good in comparison with non-luxury alternatives. It is worth to mention that expensive products are not automatically luxury products. There are many examples of products which are expensive but they are perceived as luxury by majority of consumers, as gold teeth grill or clean air. It means that there is also a hierarchical relativity and all luxuries are not equally luxurious [Heine, 2012, p. 47]. But conversely, all luxury products are expensive. Expensiveness intensifies rarity and gives reason to believe that the product delivers on excellence. Scarcity and uniqueness are usually co-called rarity. Nowadays the scarcity is used to limit distribution channels and to emphasize the uniqueness of good. The high price and rarity is relative but one characteristic of luxury goods is not negotiable: the quality. No concession is ever made on materials, craftsmanship or standards, which are unflinching. In economic literature there is another term which is used for goods sharing high price and rarity, its exclusivity [Mortelmans, 2005]. Historically rarity referred to the use of valuable materials that were naturally scarce, as gold, diamonds, precious metals and therefore there were not widely available. Contemporary luxuries are subjectively rare [Mortelmans 2005]. It means that their consumers believe that others cannot afford them or others do not have access to them. Nowadays luxury goods are also virtually rare. Luxury manufacturers offer an impression of rarity by limiting production in order to create temporary shortages or by offering limited editions to consumers. Modern clients wait long time for desired and ordered goods. This limitation is often artificially created. Many luxury brand companies create this impression of rarity by selling their products. Therefore charging high prices is justified. Excellent quality has more elegant synonym: excellence. High quality of materials used, special diligence and high expertise within the manufacturing process are necessary. Additionally long history of manufacturers whose ancestors (and their ancestors) produced goods decades ago especially attracts clients as the tradition and know-how are perceived as unique and extraordinary. Luxury products aggressively restrict when, where and how they are made, sold and to whom. This excellent quality can be obtained by using high-quality materials and by detailed workmanship. Therefore luxury goods can be perceived as fine pieces of craftsmanship, with an excellent quality, performance and durability. These goods often are sophisticatedly designed and offer extraordinary comfort to consumers. In the past, luxuries were often handmade, which required great precision and patience. To ensure the excellent quality, luxury manufacturers still try to distinguish their products by offering unique craftsmanship, innovativeness and sophistication. But process of mass production can change the importance of these characteristics in favor for innovativeness. Aesthetics and polysensuality mean that luxury create profoundly hedonic shopping experience and multisensual consumption pleasure that is comparable to the study of a work of art [Kastner,

2014, p. 11]. In line with this idea, consumers who never bought a luxury goods perceive it as more luxurious, compared to consumers who already bought the item. Ancestral heritage and personal history additionally emphasize the special character and uniqueness of the luxury goods. As mentioned above, if luxury good's history is anchored in the past or based on legend the consumer's attitude to it becomes special. The value of such goods is much higher as the good offers customers special, unique experience. Superfluousness is a feature reserved exclusively for luxury goods, as it is a kind of uselessness. Luxury goods are not perceived as indispensable to physical survival, are not necessary for everyday living.

#### **4. LUXURY VERSUS NECESSITY**

In economic literature luxury is often defined as something that is more than necessary [Bearden and Etzel 1982, p. 184; Sombart 1922, p. 85] and in contrast to necessity [Csaba 2008, p. 3; Geerts and Veg 2010, p. 2]. In microeconomics necessity goods or necessities are a type of normal good. Necessities are goods that consumers buy regardless of the changes in their income levels, therefore making these products less sensitive to income change. As for any other normal good, an income rise usually leads to an increase in demand, but the increase for a necessity good is less than proportional to the increase in income, so the proportion of customer expenditure on these goods decreases as income rises [Varian, 1992]. In microeconomics the distinction between a luxury and a necessity is defined in terms of these elasticities [Kemp, 1998]. Luxury goods are described as those whose income elasticity of demand is greater than one [Deaton and Muellbauer, 1980; Lancaster, 1971, p. 68]. It means that the proportion of the household budget spent on luxury good rises as the household income rises. Additionally, a distinction might be made in terms of price elasticity of demand [Lipsey, 1989, pp. 93–94]. When the prices of necessities rise, the quantity purchased declines relatively less; but purchases of the more dispensable luxuries decline more sharply with price rises. (Although note that not all goods with high price elasticity need be luxuries. Consider, for example, bread supplied by two different companies under different brands.[Kemp, 1998, p. 592] The co-existence of these two somewhat different approaches to luxury goods and necessities in economics underlines the fact that the luxury-necessity distinction is not a important and urgent theoretical concept in contemporary economics.

#### **5. CONCLUSION**

Luxury concept is constantly developing because both goods, customers and markets are still changing. The rapid expansion of luxury which took place in the mid-90s through the early 00s opened up luxury categories to mainstream consumers across the globe. The traditional signifiers of luxury – excess, opulence and status – became accessible to upper middle-class customers. The goods which were for centuries financially, geographically and culturally inaccessible to the general public became available to wider group of customers. Economics noticed and described this change. However, as in the past, so now, there is no universally accepted definition of this concept. But in economic literature can be found the list of special features which are common for luxury goods. This list substitutes the definition. The paper doesn't solve main conceptual problems connected with understanding of luxury but tries to systematize existing information and formulate backgrounds for future research.

#### **LITERATURE:**

1. Bain & Company. (2018). *Luxury Goods Worldwide Market Study*, Retrieved 10.05.2019 from [www.bain.com](http://www.bain.com)
2. Bearden, W.O., Etzel, M.J., (1982). Reference Group Influence on Product and Brand Purchase Decisions. *Journal of Consumer Research*, vol. 9(2), pp. 183–194.
3. Berry, C.J. (1994). *The Idea of Luxury*. Cambridge: Cambridge University Press

4. Campbell, C. (1995). Conspicuous Confusion? A Critique of Veblen's Theory of Conspicuous Consumption. *Sociological Theory*, vol. 13(1), p. 37-47.
5. Csaba, F.F., 2008. *Redefining Luxury: A Review Essay*. In Copenhagen.
6. Deaton, A., Muellbauer, J. (1980). *Economics and Consumer Behaviour*. Cambridge University Press, Cambridge, MA
7. Dubois, B., Czellar, S., Laurent, G. (2005). Consumer segments based on attitudes towards luxury: empirical evidence from twenty countries, *Marketing Letters*, vol.16 (2)
8. Dubois, B., Laurent, G. and Czellar, S. (2001). Consumer Rapport to Luxury: Analyzing Complex and Ambivalent Attitudes, *Les Cahiers de Recherche*, vol. 33, Retrieved 15.05.2019 from <http://ideas.repec.org/p/ebg/heccah/0736.html>
9. Geerts, A., Veg, N., (2010). *How to Manage the Consistency of Luxury Brands on the Internet*. In working paper, Le Mans: Université du Mans.
10. Heine, K. (2012). *The Concept of Luxury Brands*, Berlin: Technische Universität.
11. Jäckel, M., Kochhan, C. (2000). *Notwendigkeit und Luxus: Ein Beitrag zur Geschichte des Konsums*. In D. Rosenkranz, N. F. Schneider, eds. *Konsum: Soziologische, ökonomische und psychologische Perspektiven*. Opladen: Leske + Budrich, p. 73–93
12. Kastner, O.L. (2014). *When Luxury Meets Art. Forms of Collaboration between Luxury Brands and the Art*. Springer Gabler
13. Kemp, S. (1998). Perceiving luxury and necessity. *Journal of Economic Psychology*, vol. 19, issue 5, p. 591-606
14. Krapferer, J., 2012. *The Luxury Strategy: Break the Rules of Marketing to Build Luxury Brands*. 2 ed. London: Kogan Page Ltd.
15. Lancaster, K., (1971). *Consumer Demand*. New York: Columbia University Press
16. Leibenstein, H. (1950). Bandwagon, Snob and Veblen Effects in the Theory of Consumer's Demand. *The Quarterly Journal of Economics*, vol. 64(2), p. 183-207
17. Lipsey, R.G., (1989). *An Introduction to Positive Economics*. 7th ed. London: Weidenfeld and Nicolson
18. Mao N., McAleer M., Bai S. (2017), *Impact of Psychological Needs on Luxury Consumption*, TI 2017-063/III Tinbergen Institute Discussion Paper
19. Mortelmans, D. (2005). Sign Values in Processes of Distinction: The Concept of Luxury. *Semiotica*, vol. 157(1/4), pp. 497–520.
20. Okonkwo, U. (2016). *Luxury Fashion Branding: Trends, Tactics, Techniques*, Springer.
21. Patsiaouras, G. (2010). *Rethinking Veblen's contribution to Consumer Research: a phenomenological enquiry into the perception of 'status consumption' by middle-income British consumers*. Retrieved 8.05.2019 from <https://ira.le.ac.uk/handle/2381/8760>
22. Rae, J. (1905). *The Sociological Theory of Capital*, London: The Macmillan Co.
23. Silverstein, M.J., Fiske, N. (2005). *Trading up why consumers want new luxury goods--and how companies create them*. New York: Portfolio.
24. Sombart, W. (1922). *Liebe, Luxus und Kapitalismus: Über die Entstehung der modernen Welt aus dem Geist der Verschwendung*, Berlin: Klaus Wagenbach, reprint 1996
25. *The Changing Meaning of Luxury*. In: Yeoman I., McMahon-Beattie U. (eds) *Revenue Management*. London: Palgrave Macmillan
26. Trigg, A. B. (2016). Veblen, Bourdieu and Conspicuous Consumption". *Journal of Economic Issues*, vol. 35(1), p. 99–115
27. Twitchell, B. J. (2001). *Living it Up*. New York: Columbia University Press.
28. Varian, H. (1992). *Microeconomic Analysis*. New York: W. W. Norton & Co.
29. Veblen, T. (1989). *The Theory of the Leisure Class: An Economic Study of Institutions*. London: Unwin Books, reprinted New York: Dover Publications, 1994.
30. Vickers, J.S., Renand F. (2003). The Marketing of Luxury Goods: An Exploratory Study - Three Conceptual Dimensions, *Marketing Review*, vol. 3, p. 459-478

# INVESTIGATING THE STATUS OF EMPLOYEE ENGAGEMENT IN SMES OF AN EMERGING ECONOMY: CASE OF INDIA

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## **ABSTRACT**

*With the advances in globalization and growing diversity in the workforce, employee engagement is becoming inevitable for organization's sustainability and success. However, most of the literature on engagement is based on studies conducted in large organizations despite the importance of SMEs in job creation and their economic contribution, little attention has been paid to this sector. Therefore, the paper aims to explore the current status of employee engagement in SMEs of an emerging economy, India. It also examines the key issues related to employee engagement and the three categories of engagement; vigor, dedication and absorption. The study follows a descriptive approach. Data were collected through self administered questionnaire from a random sample of 139 employees working in SMEs of Delhi NCR region. SPSS 25.0 was used to analyze the data. Overall, the results depict an encouraging representation of employee engagement among SME employees. Moreover, the vigor and dedication scales of engagement were found to be significant and strongly correlated. With limited resources, most SMEs face a major challenge to engage employees. Both, theoretical and practical implications can be drawn from this study. Since, little is researched on SMEs, this paper contributes to the current literature of employee engagement and application in SME sector. The study provides an insight into the current status of employee engagement, which would help managers of SMEs to devise new ways which could help improve the engagement among the workforce.*

**Keywords:** *Absorption, Dedication, Employee engagement, SMEs, Vigor*

## **1. INTRODUCTION**

Employees are considered the backbone of any organization. An involved and engaged employee contributes highly to the organizational effectiveness (Crawford et al., 2014; Bailey et al., 2017; Carter et al., 2018; Saks 2019). The benefits of employee engagement can also provide a competitive advantage for Small and medium enterprises (SMEs). SMEs play a significantly crucial role in the emerging and developing nations of the world by generating employment and revenue. SMEs encounter a dynamic competitive environment with limited financial resources and shortage of expertise. Despite the limitations, this sector plays a significant role in the economic growth of emerging nations. Since companies around the world are facing high employee turnover, low job satisfaction and increased levels of absenteeism, employee engagement is seen as a solution and a strategy to retain employee and increase organizational success (Bhatnagar, 2007; Reijseger et al., 2017). Past studies have been conducted to assess various employee relation aspects in organizations (Wilkinson, 1999; Shuck et al., 2017; Schneider et al., 2018). Researchers have examined employee engagement as an important factor in the workplace which contributes positively to the organizational outcomes like higher productivity (Robinson et al., 2004; Bakker & Albrecht, 2018) and overall employee satisfaction and organizational commitment (Saks, 2006; Brunetto, et al., 2012). Moreover, at individual level, studies suggest that employee engagement also influences the happiness, a state of being happy, among employees (Stairs & Galpin 2010; Othman et al., 2018). Therefore, having engaged employees serves as an advantage for the organizations.

The opposite is also true, having disengaged employees results in negative outcomes for any organization and for SMEs employees are critical for the success. There has been extensive research conducted on employee engagement in large private organizations (Bhatnagar, 2007; Popli & Rizvi, 2015; Gupta, 2018). However, there is a limited research done in the context of SMEs in India. India is presently the fastest growing economies of the world and SMEs of India have significant contribution in this economic growth, particularly now when India's focus is on 'Make in India'. 'Make in India' is a government initiative with the aim of facilitating investment, fostering innovation, enhancing skill development, protecting intellectual property and to build best in class manufacturing infrastructure. All this would boost the entrepreneurship and the role of small and medium enterprises is greatly influenced by this initiative. These types of initiatives and government support is essential to strengthen the SMEs (Cusmano et al., 2018). Employee are one of the critical resources for SMEs, which is often referred to as human capital (Govaerts et al., 2011; Valaei & Rezaei, 2016). In this context, the employee engagement would be crucial to the productivity and effectiveness of SMEs. In addition, there is a lack of research on human capital in SMEs of emerging economies like India (Javalgi & Todd, 2011). Against this backdrop and to close the research gap present study would examine employee engagement among the workforce of SMEs. The objective of this paper is to assess the current status of work engagement in the form of vigor, dedication and absorption amongst SME employees. In addition, it investigates the factors that explain engagement among SME employees. This section introduced the study, second section presents the summary of relevant literature, third section presents the methodology adopted for the research, while section four discusses the findings of the study and last section concludes the paper with implications, limitation and future areas of research.

## 2. SUMMARY OF RELATED LITERATURE

The word 'work engagement' was first used in the seminal paper of William Kahn on 'personal engagement'. Kahn (1990) studied the psychological aspects associated with engagement and disengagement at work which he defined as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (p. 694). Therefore, Kahn suggested that several factors respond at multiple levels that actually form employee's engagements or disengagements. Since then employee engagement has been studied by several scholars and practitioners, who defined engagement in many different ways (Macey and Schneider, 2008). For example, Harter et al., (2002), defined is as "the individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269). Another contribution on this subject was by Schaufeli et al., (2002), they defined engagement as "a positive, fulfilling, work related state of mind that is characterized by vigor, dedication, and absorption" (p. 74). It was perhaps the first study to segregate the three different elements of engagement; vigor, dedication and absorption. In addition, several frameworks and models of employee engagement can be traced in the literature. A significant model proposed by Saks (2006) makes a clear distinction between job and organizational engagement. Similarly, Rich et al., (2010) proposed a framework of employee engagement consisting of three dimensions: cognitive, emotional and behavioural. On the same lines, recently, Shuck et al., (2017), have proposed employee engagement scale (EES) with three sub factors; cognitive, emotional and behavioural. Past studies have found evidence for a strong association of employee engagement with positive outcomes in the organisations for example, Wagner and Harter (2006) investigated 23,910 business units and concluded that business units which had higher levels of employee engagement also had higher productivity. Similarly, Shantz et al., (2013) assessed the significant role of employee engagement in influencing the performance. In a recent study by Ajayi et al., (2017), employee engagement was assessed in SMEs in Nigeria and found that significant relationship exists



between employee engagement and organisational performance. Therefore, employee engagement is widely accepted phenomena which results in improved organizational effectiveness. In the context of India, a study by Anitha (2014) confirms that employee engagement contributes to higher employee performance in small-scale organizations. The study found working environment, team and co-worker relationship as the major predictors of employee engagement. The importance of having engaged employees can also be understood by quoting the past studies which suggests that employee engagement can serve as a retention strategy (Bhatnagar, 2007; Gupta & Sharma, 2016; Reijseger et al., 2017) Moreover, employee engagement has been studied in association with several factors at work place for example, Sahu et al., (2018) examined the mediating role of employee engagement in the relationship between transformational leadership and turnover intentions in IT industry of India. Organisational culture also plays an important role in ensuring employee engagement. Taneja (2015) studied the global managers who were responsible for creating appropriate culture at work place to enhance employee engagement. It suggested that employee engagement should be viewed as long term relationship between the employee and the organisation to succeed in the international market. The concept greatly influences commitment of employees at work. Employees who are strongly engaged with the organisation are proactive, promote innovation and improve the outcomes of their organisations (Wickramasinghe & Perera, 2012). Engagement results in positive job attitudes like organisational citizenship behaviour (OCB) which refers to employee's behaviour that goes beyond the formal requirements of job (Carter, 2018). In order to achieve the expected engagement levels in the employees, organisations must respond with great effort in providing opportunities for learning, social support and feedback at work (Truss, 2013). Engagement levels in employees are also determined by their self-efficacy. Self-efficacy and employee engagement are positively related in that self-efficacy serves as a cognitive element and motivation which results in employee engagement (Bakker & Leiter, 2011; Arrowsmith & Parker, 2013). To sum up, past studies have explored employee engagement from different perspective and defined it in different but similar terms. Literature on employee engagement is vast and focus has been on how employee engagement can result in significant benefits mainly for large organisations. Its role has been studied as the predictor as well as the mediator for organisational performance. However, the literature lacked studies on employee engagement in the significant sector i.e. Small and medium enterprises, which is the focus of present study. The value of employees is utmost for SMEs as they depend mainly on the human talent which should be nourished, developed and involved at work place.

### 3. METHOD

The present study investigates employee engagement in the SME sector of India. The sample of the study included one hundred and thirty-nine full time employees working in SMEs of North central region of India. The participant's responses were gathered on self-administered questionnaire with a clause of confidentiality of their names. Survey questionnaire were sent to a random sample of 500 employees and retrieved completed filled survey from one hundred and thirty-nine (N=139) representing 28 percent response rate. Table 1 shows the descriptive profile of participants. Most of the respondents were below the age of 40 years. Out of 139 respondents, 64 percent were males and 36 percent females. Based on the survey responses, majority of respondents (75%) had more than two years of experience. Employee engagement is measured using UWES scale (Schaufeli et al., 2002). Keeping the original form of the scale, the extent of agreement was measured on a seven-point scale (0 = Never to 6 = Always). This measure considered the three subscale; Vigor (VI) measured with 6 items, for example, 'When I get up in the morning, I feel like going to work', Dedication (DE) assessed through 5 items, a sample item is, 'I am enthusiastic about my job and Absorption (AB) is measured with 6 items one sample items is, 'When I am working, I forget everything around me'.

The collected data is analyzed with the help of SPSS 25.0 and descriptive statistics is employed to find the current state of engagement in SMEs. Further to understand the relationship among the three categories of engagement; vigor, dedication and absorption, coefficient of correlation were also calculated. Moreover, the factors that explain engagement among SMEs employees are also analyzed.

Participants Profile	Frequency	Percentage
<b>GENDER</b>		
Male	89	64.0
Female	50	35.9
<b>WORK EXPERIENCE</b>		
0-1 Years	25	17.90
1-3 Years	65	46.70
3-5 Years	39	28.05
More than 5 Years	10	07.19
<b>AGE</b>		
Under 21 Years	12	8.61
21-30 Years	85	61.16
31-40 Years	32	23.02
41-50 Years	10	7.19
51 or Older	0	0
<b>QUALIFICATION</b>		
Diploma/ Certificate	8	5.7
Graduate	82	58.9
Post Graduate	49	35.25
<b>MARITAL STATUS</b>		
Unmarried	36	25.89
Married	64	46.04
Divorcee/ Separated	39	28.06
Widow	0	1.0

*Table 1: Brief Profile of Participants*

#### **4. FINDINGS AND DISCUSSION**

The purpose of this study was to gather useful insights that would help in assessing the engagement level of SME employees. This was done through investigation of vigor, dedication and absorption among employees at workplace. It has been revealed through scientific research that employees who are more engaged have influence over their co-workers in terms of promoting high energy and self-efficacy at work (Bakker & Leiter, 2011). Similarly, the findings of the present study depict that employees working in the small and medium enterprises (SMEs) are energetic and engaged at work. Table 2 shows the profile of variables with all the mean value for items under each subscale. For most of the items under the three subscales; mean value are found to be above 4 (out of 6). Except for items like 'I can continue working for very long periods at a time' which scored only 3.24 and two items from dedication scale scored below 4. They are 'It is difficult to separate myself from my job' and 'I am immersed in my work', depicting that SME employees are interested and dedicated for their work however they are not fully absorbed and immersed at work.

Construct	Item code	Measure	Mean score
Vigor- Employee Engagement (VI)	VI1	When I get up in the morning, I feel like going to work	5.9
	VI2	At my work, I feel bursting with energy	4.48
	VI3	At my work I am always persistent, even when things do not go well	
	VI4	I can continue working for very long periods at a time	3.24
	VI5	At my job, I am very resilient, mentally	5.7
	VI6	At my job, I feel strong and vigorous	4.75
Dedication- Employee Engagement (DE)	DE1	To me, my job is challenging	4.45
	DE2	My job inspires me	
	DE3	I am enthusiastic about my job	4.98
	DE4	I am proud on the work that I do	4.75
	DE5	I find the work that I do full of meaning and purpose	4.52
Absorption- Employee Engagement (AB)	AB1	When I am working, I forget everything else around me	
	AB2	Time flies when I am working	4.43
	AB3	I get carried away when I'm working	4.37
	AB4	It is difficult to separate myself from my job	3.61
	AB5	I am immersed in my work	3.8
	AB6	I feel happy when I am working intensely	

*Table 2: Profile of Variables*

Out of the three categories of engagement; vigor, dedication and absorption, vigor was found to be the highest among the sample employees of SMEs. This study found that SMEs workforce participants are well engaged in their occupations. The entire sample has stated that they find the work they do full of meaning and that time flies when they are working. Focusing on the main aim of the survey, majority of the respondents (71%) strongly agreed that they feel energetic, passionate, enthusiastic and happy while working on their job. Moreover, 84% of the respondents claimed that they feel like coming to work whenever they wake up in the morning. When asked about meaningfulness of the job, 64% of the respondents strongly agreed that their job is meaningful and purposeful. 54% of the respondents strongly agreed that they remain immersed in their tasks and get carried away while performing their roles. Another big majority (52%) claimed that they find it difficult to separate them from the job and that they are proud of what they do. However, only 46% agreed that they can continue working for long periods of time and that they are mentally flexible at their roles. Table 3 shows the descriptive statistics; mean values, standard deviation and inter-correlations. The inter-correlations among subscales is gathered using Pearson's coefficient of correlation to check whether subscales were independent measures of the same concept. The correlations ranged from 0.69 to 0.87. Observing the correlation results, the scales measuring vigor (VI) and dedication (DE) were found to be highly correlated ( $r = 0.87, p < 0.01$ ) for the observed variables. This indicates that the employees have higher levels of energy; correlation between dedication (DE) and

absorption (AB) also appeared strong ( $r = 0.75, p < 0.01$ ). In addition, employee's vigor is also positively related to absorption ( $r = 0.69, p < 0.01$ ). Overall, employees at these SMEs are engaged at all three levels.

	Mean	SD	1	2	3
Vigor VI (1)	4.90	0.72	<b>0.85</b>		
Dedication- DE (2)	4.69	0.83	0.87	<b>0.80</b>	
Absorption-AB (3)	4.01	0.99	0.69	0.75	<b>0.78</b>

The reliability of scales is reported diagonally.  $P \leq 0.05$

Table 3: Means, standard deviation and inter-correlations among variables

However, there were few employees who felt less engaged at work. These less engaged employees seemed to lack the motivation to devote their time and effort to their job. They have stated that they do not feel excited going to work first thing in the morning, nor continuing to work for long periods of time. In addition to that, they find it quite easy to separate themselves from their job. Although they were less engaged and motivated than the other participants, they did agree on being mentally flexible at their job. The variations in engagement levels may have arisen due to the diversity in the individuals or the personal characteristics. Also, SMEs might lack some of the important resources and absence of these resources might impact the motivation of employees to engage deeply in their task. Another characteristic of SMEs is that they have very few communication strategies and control systems which might hinder open communication amongst employees. The leadership of SMEs play a critical role in ensuring that employees are satisfied and engaged at their work. Moreover, specific practices like work-life balance, providing meaning work and improving quality of work life can improve the engagement levels (Sahni, 2017). In the present scenario of fierce competition and dynamic business environment, companies that wish to remain successful in business must not only focus on talent acquisition, but should also motivate and inspire their employees to work with their full potential. Therefore, organizations need to provide an environment, which is highly engaging so as to drive the organization towards development. Since employees are crucial for any SME's success, they need a workforce which is emotionally connected to work, which is proactive and eager to invest its capabilities to the fullest, and which shows great commitment to high quality performance standards. This implies that organizations need a workforce which is engaged and involved in their respective roles, in order to drive the organization towards success and growth. The study confirms the findings of previous studies that suggest SMEs to increase the involvement and commitment of employees through use of specific formal human resource practices (Saridakis et al., 2013).

## 5. CONCLUSION

### 5.1. Managerial and theoretical implications

There are some strong managerial implications which can be drawn from this study. The study focused on India, one of the emerging economies of world. In India, SMEs are growing fast and contributing to the national development and growth. For SMEs, to develop more engaged employees, management commitment and leadership play a critical role. The study also advances the existing literature on employee engagement. Since employee engagement has been significantly related to positive outcomes, it can not be ignored by the managers of SMEs which want to succeed in long run.

Findings of the study can be helpful and implications can be drawn for the policy-makers of organizations that wish to enhance their employee engagement to have high levels of performance.

## 5.2. Conclusion and limitations

Ensuring employee engagement is a win-win strategy as engaged employees prove to contribute more towards organizational success. It can be concluded from the findings of the research that most of the employees were engaged at work and feel proud of being associated with the organization. The employees are motivated and committed to their workplace and are highly satisfied with their workplace responsibilities. Moreover, majority of the employees feel energetic and enthusiastic about their jobs and are passionate to work for the company. However, a few of the employees complain about lack of communication between the management and the employees. SMEs should focus on improving communication between the management and the employees so that the employees feel more comfortable at work. Moreover, improved communication will also enable the employees to share their ideas regarding organizational decision making which will empower the workforce and ultimately contribute to the growth of the company. One of the limitation for the present study is the reliance on the self-report survey results. Although the results were carefully analysed, there were unavoidable limitations. One of them is the constitution of the study sample. The employees represent only the SME sector, therefore, the results most likely cannot be generalized. It is recommended that future research considers the emerging field of engagement as management practice.

## LITERATURE:

1. Anitha, J., 2014. Determinants of employee engagement and their impact on employee performance. *International journal of productivity and performance management*, 63(3), p.308.
2. Ajayi, O.M., Odusanya, K. and Morton, S., 2017. Stimulating employee ambidexterity and employee engagement in SMEs. *Management Decision*, 55(4), pp.662-680.
3. Arrowsmith, J. and Parker, J., 2013. The meaning of ‘employee engagement’ for the values and roles of the HRM function. *The international journal of Human Resource management*, 24(14), pp.2692-2712.
4. Bakker, A.B., Albrecht, S.L. and Leiter, M.P., 2011. Work engagement: Further reflections on the state of play. *European Journal of Work and Organizational Psychology*, 20(1), pp.74-88.
5. Bailey, C., Madden, A., Alfes, K. and Fletcher, L., 2017. The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews*, 19(1), pp.31-53.
6. Bakker, A.B. and Albrecht, S., 2018. Work engagement: current trends. *Career Development International*, 23(1), pp.4-11.
7. Bhatnagar, J., 2007. Talent management strategy of employee engagement in Indian ITES employees: key to retention. *Employee relations*, 29(6), pp.640-663.
8. Brunetto, Y., Teo, S.T., Shacklock, K. and Farr-Wharton, R., 2012. Emotional intelligence, job satisfaction, well-being and engagement: explaining organisational commitment and turnover intentions in policing. *Human Resource Management Journal*, 22(4), pp.428-441.
9. Carter, W.R., Nesbit, P.L., Badham, R.J., Parker, S.K. and Sung, L.K., 2018. The effects of employee engagement and self-efficacy on job performance: a longitudinal field study. *The international journal of human resource management*, 29(17), pp.2483-2502.

10. Crawford, E.R., Rich, B.L., Buckman, B. and Bergeron, J., 2013. The antecedents and drivers of employee engagement. In *Employee engagement in theory and practice* (pp. 71-95). Routledge.
11. Cusmano, L., Koreen, M. and Pissareva, L., 2018. 2018 OECD Ministerial Conference on SMEs.
12. Publishing, Paris. <http://dx.doi.org/10.1787/90c8823c-en>
13. Govaerts, N., Kyndt, E., Dochy, F. and Baert, H., 2011. Influence of learning and working climate on the retention of talented employees. *Journal of workplace learning*, 23(1), pp.35-55.
14. Gupta, M., 2018. Engaging employees at work: insights from India. *Advances in Developing Human Resources*, 20(1), pp.3-10.
15. Gupta, N. and Sharma, V., 2016. Exploring employee engagement—A way to better business performance. *Global Business Review*, 17(3\_suppl), pp.45S-63S.
16. Harter, J.K., Schmidt, F.L. and Hayes, T.L., 2002. Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of applied psychology*, 87(2), p.268.
17. Hooper, N., 2006. Companies where people want to work. *Weekend Australian Financial Rev*, pp.17-19.
18. Javalgi, R.R.G. and Todd, P.R., 2011. Entrepreneurial orientation, management commitment, and human capital: The internationalization of SMEs in India. *Journal of Business Research*, 64(9), pp.1004-1010.
19. Kahn, W.A., 1990. Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), pp.692-724.
20. Macey, W.H. and Schneider, B., 2008. The meaning of employee engagement. *Industrial and organizational Psychology*, 1(1), pp.3-30.
21. Othman, A.K., Mahmud, Z., Noranee, S. and Noordin, F., 2018, March. Measuring employee happiness: Analyzing the dimensionality of employee engagement. In *International Conference on Kansei Engineering & Emotion Research* (pp. 863-869). Springer, Singapore.
22. Popli, S. and Rizvi, I.A., 2015. Exploring the relationship between service orientation, employee engagement and perceived leadership style: a study of managers in the private service sector organizations in India. *Journal of Services Marketing*, 29(1), pp.59-70.
23. Reijseger, G., Peeters, M.C., Taris, T.W. and Schaufeli, W.B., 2017. From motivation to activation: why engaged workers are better performers. *Journal of Business and Psychology*, 32(2), pp.117-130.
24. Rich, B.L., Lepine, J.A. and Crawford, E.R., 2010. Job engagement: Antecedents and effects on job performance. *Academy of management journal*, 53(3), pp.617-635.
25. Roberts, D.R. and Davenport, T.O., 2002. Job engagement: Why it's important and how to improve it. *Employment Relations Today*, 29(3), p.21.
26. Robinson, D., Perryman, S. and Hayday, S., 2004. The drivers of employee engagement. *Report-Institute for Employment Studies*.
27. Sahni, J., 2017. EXPLORING WHAT CONSTITUTES 'QUALITY' IN QUALITY OF WORK LIFE FOR FEMALE EMPLOYEES. *International Journal for Quality Research*, 11(4).
28. Sahu, S., Pathardikar, A. and Kumar, A., 2018. Transformational leadership and turnover: Mediating effects of employee engagement, employer branding, and psychological attachment. *Leadership & Organization Development Journal*, 39(1), pp.82-99.
29. Saks, A.M., 2006. Antecedents and consequences of employee engagement. *Journal of managerial psychology*, 21(7), pp.600-619.

30. Saks, A.M., 2019. Antecedents and consequences of employee engagement revisited. *Journal of Organizational Effectiveness: People and Performance*, 6(1), pp.19-38.
31. Saridakis, G., Muñoz Torres, R. and Johnstone, S., 2013. Do Human Resource Practices Enhance Organizational Commitment in SME s with Low Employee Satisfaction?. *British Journal of Management*, 24(3), pp.445-458.
32. Schaufeli, W.B., Salanova, M., González-Romá, V. and Bakker, A.B., 2002. The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies*, 3(1), pp.71-92.
33. Schaufeli, W.B. and Bakker, A.B., 2003. UWES–Utrecht work engagement scale: test manual. *Unpublished Manuscript: Department of Psychology, Utrecht University*, 8.
34. Schneider, B., Yost, A.B., Kropp, A., Kind, C. and Lam, H., 2018. Workforce engagement: What it is, what drives it, and why it matters for organizational performance. *Journal of Organizational Behavior*, 39(4), pp.462-480.
35. Shantz, A., Alfes, K., Truss, C. and Soane, E., 2013. The role of employee engagement in the relationship between job design and task performance, citizenship and deviant behaviours. *The International Journal of Human Resource Management*, 24(13), pp.2608-2627.
36. Shuck, B., Adelson, J.L. and Reio Jr, T.G., 2017. The employee engagement scale: Initial evidence for construct validity and implications for theory and practice. *Human Resource Management*, 56(6), pp.953-977.
37. Stairs, M. and Galpin, M., 2010. Positive engagement: From employee engagement to workplace happiness.
38. Taneja, S., Sewell, S.S. and Odom, R.Y., 2015. A culture of employee engagement: A strategic perspective for global managers. *Journal of Business Strategy*, 36(3), pp.46-56.
39. Truss, C., Shantz, A., Soane, E., Alfes, K. and Delbridge, R., 2013. Employee engagement, organisational performance and individual well-being: exploring the evidence, developing the theory.
40. Valaei, N. and Rezaei, S., 2016. Job satisfaction and organizational commitment: An empirical investigation among ICT-SMEs. *Management Research Review*, 39(12), pp.1663-1694.
41. Wickramasinghe, V. and Perera, S., 2014. Effects of perceived organisation support, employee engagement and organisation citizenship behaviour on quality performance. *Total Quality Management & Business Excellence*, 25(11-12), pp.1280-1294.
42. Wagner, R. and Harter, J.K., 2006. *12: The elements of great managing* (Vol. 978, No. 1-59992). Simon and Schuster.
43. Wilkinson, A., 1999. Employment relations in SMEs. *Employee relations*, 21(3), pp.206-217.

# MULTIMODAL TRANSPORTATION DEVELOPMENT AS A COMPARATIVE ADVANTAGE FACTOR FOR CROATIAN ECONOMY

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## **ABSTRACT**

*The paper emphasizes the need of Republic Croatia for developing multimodal transportation solutions. Croatian transport infrastructure is not at satisfactory stage of development and due to Croatian geographical and geographic position, development of multimodal transportation can have beneficial effects on economy. European Union recommends multimodal solution as less polluting and more energy efficient modes as well. Further, it is shown that the modernisation of transport systems in Croatia by developing a multimodal transportation systems represent a comparative advantage factor for Croatian economy. The methods used are methods of analysis, synthesis and comparison method, as well as methods of collecting secondary sources of research. The aim of the paper is to point out the importance of developing multimodal transportation as a significant comparative advantage factor for economy development as well as contributing to raising awareness of this problem.*

**Keywords:** *Croatian traffic valorisation, multimodal transportation, transportation development*

## **1. INTRODUCTION**

Croatian traffic valorisation within European Union is closely related to its geographical and geographic position and is an integral part of the traffic policy of the European Union as well as their traffic and economic interests. Croatia is the only middle European, Panonian-Danube and Adriatic-Mediterranean state that has a direct contact with the south-eastern territory. Its geographic position of Croatia is placing it in a contact with two important corridors: the longitudinal one – from Western and Eastern Europe towards the Black Sea and the European south-east, and the transversal one – from the parts of Middle Europe, the Pannonian and Baltic region and the parts of Eastern Europe towards the Adriatic coast and the Mediterranean region in a wider sense. The role of transportation system in Croatia is significant since there is a strong relationship between economic growth and transportation infrastructure. Although, transportation system in Croatia is on average satisfactory, the big problem is the efficiency of railway infrastructure resulting in a reduction of average speeds on the network contributing to long journeys, low quality of service and a shift to other transport modes, in particular road (Current Trends and Issues, 2019). European Commission (Mobility and Transport - European Commission, 2018) is emphasising negative consequences of road transport such as pollution, climate change, noise, congestion and accidents are bringing problems to the economy, health and well-being of citizens of European Union and strongly recommend reducing of road transport towards less polluting and more energy efficient modes, in particular, multimodal



solutions. In order to research this problem, in this paper, a scientifically paradigm for setting the basic hypotheses has been defined as follows: A modernisation of transport systems in Croatia by developing a multimodal transportation systems represent a comparative advantage factor for Croatian economy. The problem and subject of research respect two real objects of research: Croatian transport infrastructure is not at satisfactory stage of development and geographical and geographic position of Croatia has beneficial affect on potential benefits transportation system, particularly multimodal transportation. The methods used are methods of analysis, synthesis and comparison method, as well as methods of collecting secondary sources of research. The aim of the paper is to point out the importance of developing multimodal transportation as a significant comparative advantage factor for economy development as well as contributing to raising awareness of this problem.

## **2. THEORETICAL BACKGROUND**

The main aim of any transportation system is to achieve the best combination of cost effective and time saving transportation system. The crucial task of transport chain us usage of different transport modes to carry certain goods from its origin to its final destination. Literature, as well as practice, are using the terms of intermodal, combined and multimodal transport. United nations issued a document that defines this terminology. Combined transport refers to an intermodal transport where the major part of the European journey is by rail, inland, waterways or sea and any initial and/or final legs carried out by road are as short as possible. The movement of goods in one and the same loading unit or road vehicle, which uses successively two or more modes of transport without handling the goods themselves in changing modes defines an intermodal transport, while multimodal transport is simply defined as carriage of goods by two or more modes of transport (Unece.org, 2001). Although, both, intermodal and multimodal transport contain element of movement of cargo from origin to destination by several modes of transport where each of these modes have a different transport carrier responsible, in intermodal transport each transport carrier has its own independent contract, while in multimodal transport this movement of cargo is carried out under a single contract – single carrier during a single journey which results in significant advantages of multimodal transportation. Multimodal transportation enables better efficiency of cargo tracking, delivery time, access to any part of the world associated with responsibility and liability of a single transport carrier and minimization of total logistics expenses. In order to give a theoretical background, several definitions of multimodal transportation concepts are stated. To begin with one of the oldest definition, according to Hayuth (Hayuth, 1987), multimodal transportation refers to the movement of cargo from shipper to consignee using two or more different modes under a single rate, with through billing and through liability. Southworth and Peterson (Southworth and Peterson, 2000) are defining it as a movement, in which two or different transport modes are linked end to end order to move freight and /or people from point of origin to point of destination and Newman and Yano (Newman and Yano, 2000) are giving the simple definition as the combination of modes, usually ship, truck or rail to transport freight. The common elements in different definitions of multimodal transportation are: the movement of cargo from the beginning point to end user, usage of minimum of two different modes and unchanged ownership of shipment. Although, the multimodal transportation has numerous valuable characteristic, there are many critical parts due to the different parties involved. It is a very complex process of combining services of couriers, external logistics service providers, small transportation companies, different modes of transport as well as multimodal transport operators (Marchet et al., 2009). However, importance of using of multimodal transportation for economic development an growth is unquestionable. There is a strong relationship between economic growth and transportation infrastructure (Khadaroo and Seetanaah, 2008), especially in developing countries.

It has been shown that investment in land and water transport infrastructure have large impacts upon economic growth and that asymmetric effects across regions are due to the non-uniform regional distribution of transport infrastructure (Hong, Chu and Wang, 2011). Also, there are studies that confirm positive effects of transport infrastructure on trade, better foreign direct investments as well as positive trade effects at intensive and extensive margin and transport cost reduction (Brooks and Hummels, 2009). Even, whether will trade occurs at any level is associated with transport infrastructure as a factor that determines levels of trade, quality of institution, information and communication technology and access to transport infrastructure (Francois and Manchin, 2013). Nevertheless, geographical and geographic position of a country is an important factor as well. There are findings that shows that countries that do not have access to the sea and transit countries have 55% higher transport costs than median coastal countries (Table 1). Also, landlocked countries in 1995, on average had an import share in gross domestic product of 11 percent, compared with 28 percent for coastal economies (Limao, 2001).

*Table 1: The cost of being landlocked, relative to a costal economy (Limao, 2001)*

Transit infrastructure percentile	Own infrastructure percentile		
	25th	Median	75th
Shipping data: transport cost ratio			
25th	1.33	1.48	1.67
Median	1.41	1.55	1.74
75th	1.51	1.65	1.84
CIF/FOB data: (CIF/FOB – 1) ratio			
25th	1.31	1.43	1.65
Median	1.34	1.46	1.69
75th	1.37	1.49	1.72
Gravity model: trade volume ratio			
25th	0.55	0.42	0.26
Median	0.53	0.40	0.25
75th	0.50	0.38	0.24

Limao (Limao, 2001) showed that “Improving own infrastructure to the level of the best 25th percentile among landlocked countries cuts transport cost penalty to 41 percent, improvement by the transit country cuts the penalty to 48 percent, and if both improvements are made the penalty drops to 33 percent”. Bearing this in mind, geographical and geographic position of Croatia, it can be stressed out that developed transportation system, especially multimodal transportation development is necessity and should be used as a comparative advantage factor for economy growth.

### **3. GEOGRAPHICAL AND GEOGRAPHIC POSITION OF REPUBLIC OF CROATIA**

Croatia is middle European, Panonian-Danube and Adriatic-Mediterranean country and it has very unique and advantageous geographical and geographic position in Europe. It is the only country that connects south-eastern area. Also, over the territory of Croatia, two main corridors are connected: from Western and Eastern Europe to the Black Sea and the European south-east and from the parts of Middle Europe, the Pannonian and Baltic region and the parts of Eastern Europe towards the Adriatic coast and the Mediterranean region in a wider sense. It is considered that given its geographic position, especially Central Croatia (Figure 1) plays a prominent role in the transport network of Croatia and Central-Eastern Europe (Mppi.hr, 2014). To the north, the region borders with Hungary and with Slovenia to the west, Bosnia and Herzegovina to the south, the Northern Adriatic to the west and Eastern Croatia to the east.

There are also two important rivers the Drava and Sava rivers that cross the region. The main city of the region is the City of Zagreb.

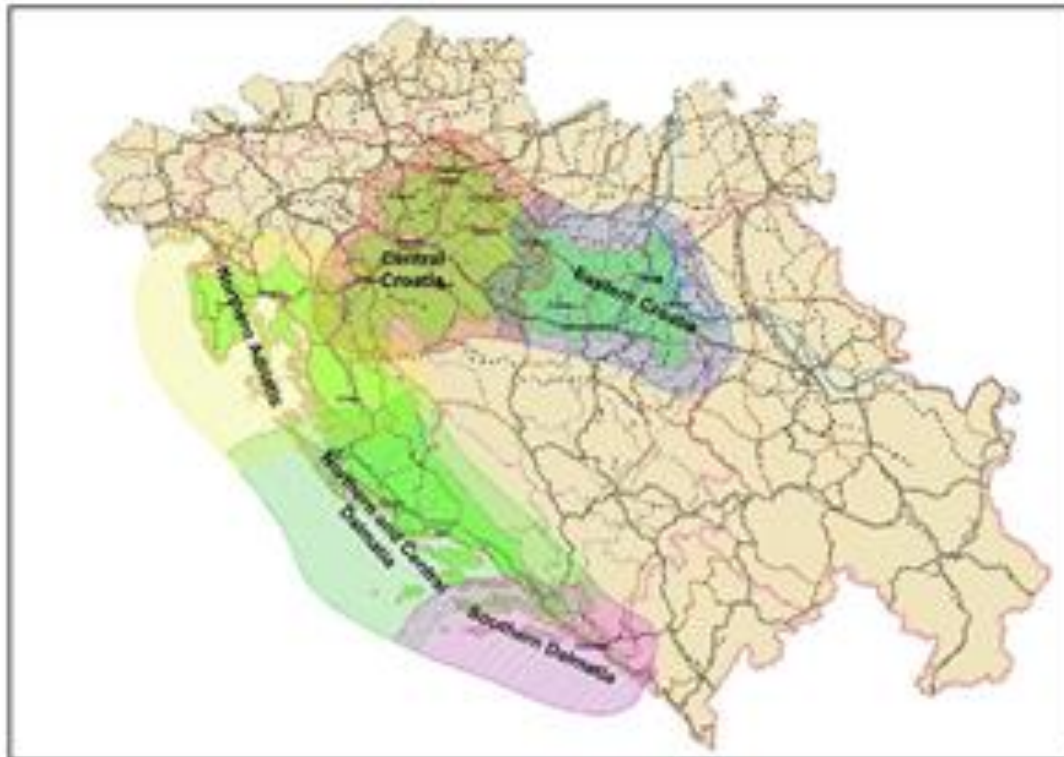


Figure 1: Zones for Functional Regional Analysis (Mppi.hr, 2014)

Croatian transport system consists of 29,500 km of classified interurban roads, 22,000 km of local roads, 2,726 km of railway network, two main sea ports, five secondary sea ports. Also, there are river ports on 918 km of Sava and Drava rivers and 2.5 million deadweight tons (DWT) river and ocean-going vessel capacity as well as nine international airports (Mppi.hr, 2014). The role of transportation system in Croatia has been recognized by the World Bank as well, even fifteen years ago, stating that Croatia has made good progress, especially by establishing a transport sector based on market principle and liberalization of road transport. However, it has been stated that the market share depends on the ability of railways to adapt to the new environment, requiring not only restructuring of railways (discussed above) but also exploring market niches, such as long-distance freight transport, multi-modal freight transport and suburban passenger (Siteresources.world bank.org, 2004).

#### **4. MULTIMODAL TRANSPORTATION DEVELOPMENT AS A POTENTIAL COMPARATIVE ADVANTAGE FACTOR FOR CROATIAN ECONOMY**

According to European Commission report (Mobility and Transport - European Commission, 2018) it has been noticed that negative consequences of transport such as pollution, climate change, noise, congestion and accidents are bringing problems to the economy, health and well-being of citizens of European Union. Specifically, with continuous growth of freight and road transport, there are projections that they are going to increase by 40% by the year 2030, and even more, by 80% by the year 2050. Therefore, recommendations for reducing road transport towards less polluting and more energy efficient modes of transport were issued. Four types of actions support greater use of multimodal solutions (Table 2).

*Table 2: Recommendation of European Commission for reducing road transport in favour of multimodal solutions systems (Mobility and Transport - European Commission, 2018)*

The internalisation of external costs in all modes of transport, with a view to send appropriate pricing signals to users, operators and investors. The social and environmental costs of transport should be paid in line with the polluter pays principle.
More targeted investments into physical infrastructure, aimed at better interconnections between the single modal networks.
Direct support for intermodal transport, as provided by the Combined Transport Directive (Council Directive 92/106/EEC), which aims to increase the competitiveness of the combined transport (defined as intermodal transport with a strictly limited road leg). The EU also provides financial support to multimodal/intermodal transport .

Further, in the document issued by European Commission (Transport in the European Union Current Trends and Issues, 2019), the need for safer, efficient and sustainable transport system is clearly stated as well as a need for establishing truly multimodal transport system. The same document offers an analysis of main current transportation system issues per members countries. Main transportation system issues in Croatia are organized three in section: competitiveness of the rail sector, renewable energy in transport and road safety. Regarding competitiveness of the rail sector, overall situation was poorly rated due to railway infrastructure that is significantly behind EU average. This situation is resulting in low competitiveness, low quality of service and a general preference for other transport modes, in particular road, where the quality of infrastructure is significantly higher (Current Trends and Issues, 2019). Recommendation for improvement of competitiveness and quality of services are removing regulatory restrictions, implementing open and transparent tendering procedures, and facilitating the cooperation between state-owned enterprises, private operators, and infrastructure managers. It is considered that improvement in rail sector could positively affects ports by improving their cargo handling capacities and connections to EU markets as well as creation of new jobs and generation of economy growth overall. According to European Alternative Fuels Observatory (Data.europa.eu, 2018) Croatia is behind with the usage of renewable energy in the transport sector and the reduction of CO<sub>2</sub> emissions from transport seemed to be at risk. Namely, in Croatia, in 2018, the share of battery-powered cars was not extremely low, but there were only two public charging point per vehicle, while this number in European Union was eight (Current Trends and Issues, 2019). Regarding the road safety issue, the data are devastating. Namely, Croatia is one of the countries with the highest fatality rates among the European Union members (Current Trends and Issues, 2019).



*Figure 2: Road fatalities per million inhabitants (Ec.europa.eu, 2016)*

Although Croatia has reduced the number of road deaths (Figure 2) in period between 2001 and 2010, it is still among the three worst performing EU countries in terms of road safety, having 80 deaths per million inhabitants versus 49 in European Union (Ec.europa.eu, 2016). Situation regarding the modal split in passenger transport is satisfactory, even above European average, that can be considered as significant factor since Croatia is popular tourist destination (Figure 3).

Modal split for passenger transport (shares based on passenger-kilometres)				
	Passenger cars	Buses & Coaches	Railways	Tram & Metro
Croatia	83.3%	12.1%	2.6%	1.9%
EU-28	81.3%	9.3%	7.6%	1.8%

Figure 3: Modal split for passenger transport (Ec.europa.eu, 2018)

Regarding the modal split in railway transport is below European Union average (Figure 4).

Modal split for freight transport (shares based on tonne-kilometres)				
	Road	Railways	Inland Waterways	Pipeline
Croatia	65.6%	16.2%	6.3%	11.9%
EU-28	72.8%	16.6%	5.9%	4.6%

Figure 4: Modal split for freight transport (Ec.europa.eu, 2018)

Although, the modal split in freight transport (Figure 4) is the same as the European union average, road transport plays a less important role than on average in the European Union countries.

Figure following on the next page

Logistics performance indicator (LPI) (World Bank)			
	2014	2016	2018
LPI Rank	55	51	49
Score	3.05	3.16	3.1
Customs	50	47	39
Score	2.95	3.07	2.98
Infrastructure	55	53	46
Score	2.92	2.99	3.01
International shipments	61	51	58
Score	2.98	3.12	2.93
Logistics competence	56	42	45
Score	3	3.21	3.1
Tracking & tracing	59	52	61
Score	3.11	3.16	3.01
Timeliness	62	67	47
Score	3.37	3.39	3.59

Figure 5: World Bank Logistics performance indicator (Lpi.worldbank.org, 2018)

Overall performance of the logistic sector is showing some improvement since 2014, but it is still weak (Figure 5) compared to other European Union members (Lpi.worldbank.org, 2018). It can be seen that indicator is placed in the middle, bearing in mind that scores range from 1, representing very low, to 5, representing very high indicator of logistics performance.

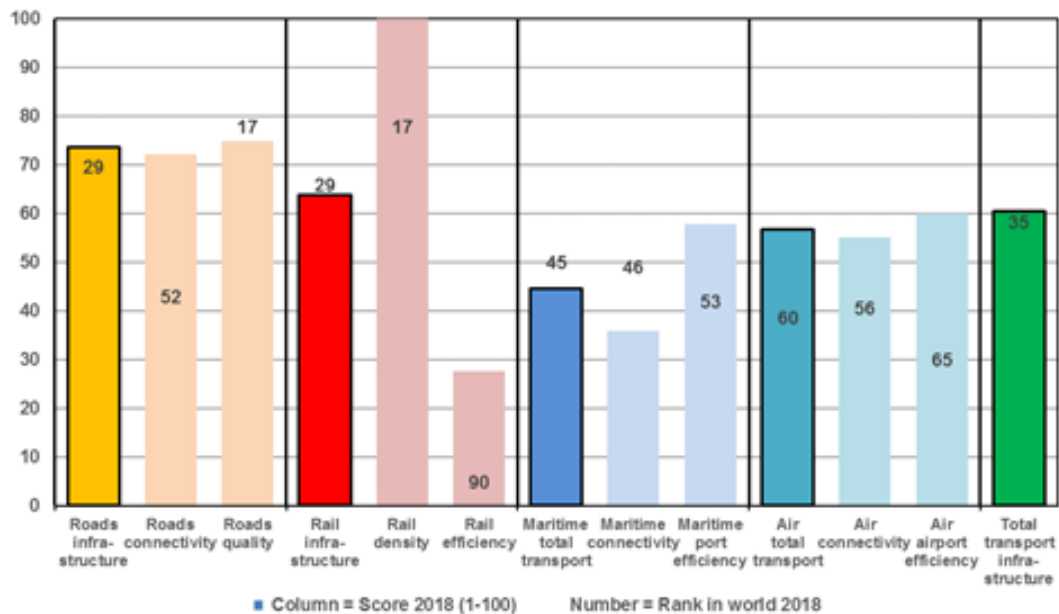


Figure 6: Quality of the transport infrastructure in Croatia (World Economic Forum, 2018).

Figure 6 is showing the quality scores in each area from 1 to 100, where the score 100 represents the best score. According to World Economic Forum (2018), in measuring efficiency, factors as frequency, punctuality, speed and price (includes access to seaport services for landlocked countries) were taken into account.

It can be concluded that overall quality of transport infrastructure in 2018 in Croatia is satisfactory, due to the intensive investments in road infrastructure, the quality of port infrastructure, although there are additional investments to increase capacity and quality of service for inland and seaports are needed. The main problem is the efficiency of railway infrastructure due to the lack of infrastructure investments and maintenance over a longer period of time, which has resulted in reduction of average speeds on the network (for freight and passenger transport), contributing to long journeys, low quality of service and a shift to other transport modes, in particular road (Current Trends and Issues, 2019).

## 5. CONCLUSION

It can be stated that Croatia has enormous potential for development of multimodal transportation system due its geographical and geographic beneficial position. However, although an overall quality of transport infrastructure regarding the roads and port infrastructure in average is satisfactory, it is surely not used enough. Railway infrastructure, as a partial mode of multimodal transportation system, is significantly behind European Union average and it produces low competitiveness, low quality of service and a general preference for other transport modes. There are numerous recommendation for improvement of competitiveness and quality of services, from removing regulatory restrictions, implementing open and transparent tendering procedures to facilitating the cooperation between state-owned enterprises, private operators, and infrastructure managers. Since, improvement in rail sector could positively affect ports by improving their cargo handling capacities and connections to EU markets as well as creation of new jobs and generation of economy growth overall. Multimodal transportation means usage of at least two or different transport modes, it is important to take into account situation of Croatia transport systems and infrastructure, since there is a strong relationship between economic growth and transportation infrastructure. Also, it has been noticed that negative consequences of transport such as pollution, climate change, noise, congestion and accidents are bringing problems to the economy, health and well-being of citizens of European Union and projections are showing an by 40% and 80% in the next ten and thirty years. There are recommendation of European Commission for reducing road transport in favour of multimodal solutions systems Croatia as a member of European Union, which recognized importance and benefits of developed transport infrastructure and multimodal transportation system, should strongly recognize this factor, as a potential comparative advantage and urgently consider improvement in this area.

## LITERATURE:

1. Brooks, D. and Hummels, D. (2009). *Infrastructure's role in lowering Asia's trade costs*. Cheltenham: Edward Elgar.
2. Ec.europa.eu. (2018). *EU Transport in figures*, Statistical Pocketbook 2018. Retrieved 01.03.2019. from <https://ec.europa.eu/transport/sites/transport/files/pocketbook2018.pdf>.
3. Ec.europa.eu. (2016). *Road safety statistics - characteristics at national and regional level*- Statistics Explained. Retrieved 15.02.2019. from [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Road\\_safety\\_statistics\\_-\\_characteristics\\_at\\_national\\_and\\_regional\\_level&oldid=411346](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Road_safety_statistics_-_characteristics_at_national_and_regional_level&oldid=411346).
4. Data.europa.eu. (2018). *European Alternative Fuels Observatory* - eodp.common.ckan.site\_title. Retrieved 15.02.2019. from <https://data.europa.eu/euodp/it/data/dataset/eafo>.
5. Francois, J. and Manchin, M. (2013). *Institutions, Infrastructure, and Trade*. World Development, 46, pp.165-175.

6. Hayuth, Y. (1987). *Intermodality: concept and practice*. 1st ed. London: Lloyd's of London Press.
7. Hong, J., Chu, Z. and Wang, Q. (2011). *Transport infrastructure and regional economic growth: evidence from China*. *Transportation*, 38(5), pp.737-752.
8. Khadaroo, J. and Seetanah, B. (2008). *The role of transport infrastructure in international tourism development: A gravity model approach*. *Tourism Management*, 29(5), pp.831-840.
9. Limao, N. (2001). *Infrastructure, Geographical Disadvantage, Transport Costs, and Trade*. *The World Bank Economic Review*, 15(3), pp.451-479.
10. Lpi.worldbank.org. (2018). *Home | Logistics Performance Index*. Retrieved 17.02.2019. from <https://lpi.worldbank.org/>.
11. Newman, A. and Yano, C. (2000). *Scheduling Direct and Indirect Trains and Containers in an Intermodal Setting*. *Transportation Science*, 34(3), pp.256-270.
12. Marchet, G., Perego, A. and Perotti, S. (2009). *An exploratory study of ICT adoption in the Italian freight transportation industry*. *International Journal of Physical Distribution & Logistics Management*, 39(9), pp.785-812.
13. Mppi.hr. (2014). *Transport development strategy of the Republic of Croatia (2014-2030)*, Retrieved 10.02.2019. from [http://www.mppi.hr/UserDocsImages/TR-DEVLP%20STRAT-M-DOC3010-14%20FINAL%2025-12\\_15.pdf](http://www.mppi.hr/UserDocsImages/TR-DEVLP%20STRAT-M-DOC3010-14%20FINAL%2025-12_15.pdf).
14. Mobility and Transport - European Commission. (2018). *Multimodal and combined transport - Mobility and Transport - European Commission*. Retrieved 15.01.2019. from [https://ec.europa.eu/transport/themes/logistics-and-multimodal-transport/multimodal-and-combined-transport\\_en](https://ec.europa.eu/transport/themes/logistics-and-multimodal-transport/multimodal-and-combined-transport_en).
15. Siteresources.worldbank.org. (2004). *Croatia and the World Bank*. Retrieved 02.04.2019. from <http://siteresources.worldbank.org/INTCROATIA/Data%20and%20Reference/20195708/BBEeng.pdf>
16. Southworth, F. and Peterson, B. (2000). *Intermodal and international freight network modeling*. *Transportation Research Part C: Emerging Technologies*, 8(1-6), pp.147-166.
17. Transport in the European Union Current Trends and Issues. (2019). [ebook] Brussels: European Commission, Directorate-General Mobility and Transport. Retrieved 29.03.2019. from <https://ec.europa.eu/transport/sites/transport/files/2019-transport-in-the-eu-current-trends-and-issues.pdf#page=77>.
18. Unece.org. (2001). *Terminology of combined transport*. [online] Retrieved 15.02.2019. from <http://www.unece.org/fileadmin/DAM/trans/wp24/documents/term.pdf>.
19. Yang, J. and McCarthy, P. (2013). *Multi-modal Transportation Investment in Kazakhstan: Planning for Trade and Economic Development in a Post-Soviet Country*. *Procedia - Social and Behavioral Sciences*, 96, pp.2105-2114.
20. World Economic Forum. (2018). *The Global Competitiveness Report 2018*. Retrieved 05.03.2019. from <https://www.weforum.org/reports/the-global-competitiveness-report-2018>.



# THE FINANCIAL SUSTAINABILITY OF WATER COMPANIES: THE ITALIAN CASE

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## **ABSTRACT**

*Water companies have become an important subject of analysis by international scholars to contribute to the sustainable development of each country. In this sense, it is also interesting to verify the financial sustainability of these companies over time. The paper aims to analyze in particular the financial dynamics of water companies operating in sales phase. To this end, the financial statements of Italian companies from the AIDA database for the period 2008-2017 will be used. In this way, a summary picture will be drawn of the possible financial sustainability of these companies over time.*

**Keywords:** *Public services, Water, Liquidity, Performance, Sustainability*

## **1. INTRODUCTION**

The objective of this paper is to analyze the financial sustainability of Italian water companies. In fact, we will focus on the financial structure of these companies and deepen our belonging to the three geographical areas in which it is possible to distinguish the country. This financial analysis was conducted with reference to a temporal horizon of 10 years and precisely from 2008 to 2017. Attention focused on this period, because during it the main changes in the management of these were carried out companies in Italy. This is attributable to the general reform processes that are characterizing public services in all European countries since the 1990s. In fact, there have been numerous legislative interventions that since the European Union have forced individual national legislators to implement adequate regulations within individual countries. These interventions primarily concerned services of industrial importance. The primary purpose of the European legislator and therefore of those of the individual countries is to guarantee first and foremost a fundamental and inalienable aspect of public services, namely technical quality. The technical quality (Gronroos, C., 2005) is related to the core service, that is to the capacity of the service to satisfy through its technical characteristics precisely the primary needs for which the service is requested. Questo is therefore the aspect that characterizes the water service. In addition, there is also the need to guarantee a universal service, that is, a service that has price conditions that allow all citizens potentially to access this service. The start of the transformation of water services in Italy is started by Law No. 36/94, the so-called Galli law. The purpose of this legislative intervention is precisely to implement the European provisions on a national level, but also to concretely implement the very concept of public service. In fact, this law provided for interventions aimed at ensuring the technical quality for consumer citizens. Furthermore, investments in infrastructure were encouraged to make the service offered as universal as possible. The reason for these initiatives was the major shortcomings in access to water in all Italian areas, with very critical peaks particularly in the south of the country. The reasons for these difficulties were basically due to the scarce and inadequate investments in the modernization of the water network. Thus, the national reform law of the sector aimed to multiply and spread investments in the necessary infrastructures, but also to modify the price definition system to be requested from consumers. In fact, the water tariff system is defined until 2011 by an administrative body, the Committee for the supervision of water resources. Subsequently the AEEG, that is the Authority for Electricity and Gas, has seen its competences extended to the water sector, becoming the ARERA, that is the Authority for the regulation of energy, networks and environment, since in

2018 he also took on regulatory duties for the waste sector. Most of the studies on this sector focused on the management characteristics of the related companies. Instead, the financial structure with regard to the actual sustainability of these companies has been analyzed in a limited way. Therefore, this paper analyzed the trends of two main financial indices of Italian water companies with reference to a period of 10 years. The priority motive behind this analysis is to understand if the general transformations that are characterizing water services on the basis of the wider transformation of public services, allow these companies to have a real financial sustainability. This financial sustainability is verified in relation to a long time horizon, but also in relation to the different geographical areas of the country. In this sense, three preliminary research questions have been asked:

1. What were the characteristics of the financial index trends analyzed in the three different geographical areas?
2. Are differences or similarities in the trends of the different Italian areas detectable?
3. If there are differences, are they significant from a statistical point of view?

Taking into account the three research questions there are three consequent hypotheses. The H1 hypothesis is that the water service reform processes have had positive effects on the financial sustainability of water companies. With the H2 hypothesis we argue however that there are differences in the financial results of the companies located in the three different areas of the country under virtue of previous infrastructure differences not completely filled; these differences in financial results are statistically significant (H3). To this end, the financial dynamics of Italian water companies was assessed by analyzing two different indices: quick ratio and debt / equity ratio. The period under investigation is 10 years, from 2008 to 2017. A trend analysis and ANOVA have been performed. In the further sections, some literature notes on water companies are drawn. The other paragraphs are the specific methodology, the different results, conclusions and the main implications.

## 2. LITERATURE REVIEW NOTES

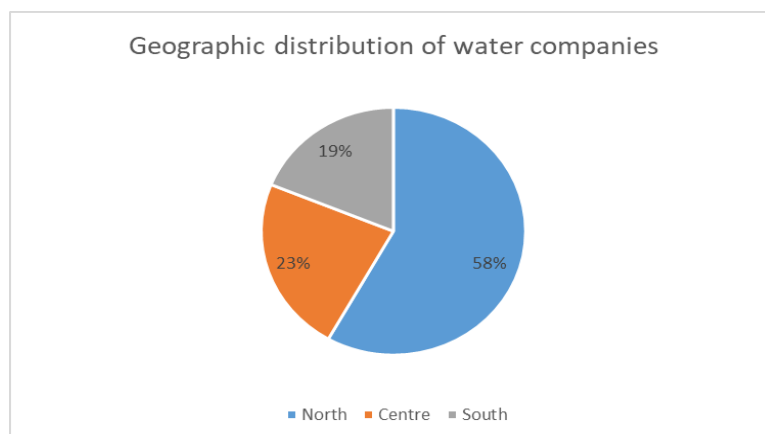
Some authors have investigated the financial performance of water companies and the effects of the transformation of this sector on their value. Vandone et al. (2018)'s study employs a multifactor market model for evaluating if the changes of prices in agriculture and energy affect on the financial performance of water companies. In this sense, a sample of listed companies is analyzed. The main findings suggest some variability of the stock prices of the water companies respect the variations in the prices in energy and agriculture. Suarez-Varela et al. (2017)'s study analyses what type of relation there is between privatization of water companies and related financial performance. The research employs a sample of Spanish water companies. The main findings demonstrate that privatization permits to water companies to have higher results in work management, instead public companies have a low efficiency with operating costs. Maziotis et al. (2018) analyze the variations in net income and in its main components of 10 Welsh and English water companies. The research has been performed during 20 years (1991-2008) in which there were three different reforms. The findings are negative for the analyzed period. The reasons of this negative impact are because of the price of input and the effects of scale. Mellah, T., Ben Amor (2016) try to understand how the regulation affects on the Tunisian water monopoly enterprise. The findings suggest that when the regulation is performance-based the Tunisian water industry increases its efficiency and productivity. Pinto, F.S. et al. (2017)'s study aims to evaluate how environmental and quality factors affects on the financial performance of water companies. To this end, a sample of Portuguese water companies has been used. The findings are generally of a positive type. First of all, private participation, water sources and economies of purpose have a positive impact on the financial performance of water companies.

In addition, the raise in the quality of the provided service increases the financial performances of the same companies. The impacts of the Chinese reform of water companies have been analysed by Li's study (2018). The main aim is understand the financial performance of private Chinese water companies. The analysis is related to the period 1998-2006 using 12 performance indicators. The findings have found increases in efficiency, in output and financial performance. In this way, the Chinese water companies improve its financial performance by means of the private equity investments. Therefore, there isn't enough literature that analyse the impacts of the reforms in water companies by means of the financial performance of the related companies. In this way, this study try to understand if there is a positive impact on the financial sustainability of these companies by means of some financial ratios (Iovino, F. 2014; Iovino, F., & Migliaccio, G., 2016; Iovino, F., & Migliaccio, G., 2018a; Iovino, F., & Migliaccio, G., 2018b; Iovino, F., & Migliaccio, G., 2019a).

### 3. RESEARCH METHODOLOGY

#### 3.1. Data collection and sample characteristics

The data of the AIDA database were used in order to obtain answers to the research questions and at the same time also to verify the hypotheses posed. The analysis of the financial dynamics of Italian water companies was analyzed through the use of two indices, the quick ratio and the debt / equity ratio. The verification of the impacts of the reforms carried out was carried out by verifying these indices for a period of 10 years, ie from 2008 to 2017. The identification of these companies took place using the NACE rev. 2. The enterprises were classified according to the NACE code rev.2. The maximum number of companies identified in the period under investigation is 305. It was then chosen to analyze only the companies available for both indices in all the years considered. The total number of companies making up the sample is therefore equal to 122 companies. As a next step, we chose to identify different groups through the use of the geographical location as a discriminating variable. In this sense, there are three geographical areas in which Italy is traditionally distinct: north, central and south. So the subdivision of the sample of Italian water companies was as follows: 58% in the Northern area, 23% in the Central area and 19% in the Southern ones (figures 1).



*Figure 1: Geographic distribution of water companies*

*Source: our elaboration - geographic distribution of Italian water companies*

#### 3.2. Used Method

A trend analysis was performed for the 2008-2017 period for each index and geographical area. Subsequently ANOVA was used to identify the presence of any similarities or differences in the values recorded in the two indices between the different geographical areas. If the null hypothesis is true, all the elements are equal to each other, while the alternative hypotheses

indicate that at least one value is different. The independent variables used are the different geographical areas, while the indices are the independent variables. ANOVA (one-way) was chosen because in addition to the verification of the presence of statistically significant differences, this analysis is useful when the two variables under investigation are analyzed separately (Saunders, et al., 2009).

## 4. FINDINGS AND DISCUSSION

### 4.1. Analysis of trends and of variance

Quick ratio (liquid assets / current debts) is an index that expresses the company's liquidity with respect to current payables. In fact, it refers to the ability of the company to be able to deal with current debts exclusively by relying on the current liquidity, ie excluding the stock. In fact, the latter may prove to be difficult and not immediately transferable. It is therefore certainly an index to be analyzed to verify the solvency of the company in the short and very short term, that is to the commitments assumed towards third parties. It is therefore a condition of operation in the time of the company. During the 10 years analyzed the value of the quick ratio ranges from a minimum of 1.3 to a maximum of 2.1, referring to the geographical location as a discriminating element. An optimal value of this index is open to 2. Figure 2 shows that only the southern regions are able to approach an optimal value unlike the companies present in the other two areas. Furthermore, the trends over the 10 years are quite stable. However, it is possible to see a slight upward trend starting from 2012 for all companies in different geographical areas. Only for the enterprises of the center there is a slight negative trend from 2008 to 2012, to then have a decisive growth in the following years. Companies in the north are experiencing a growing trend. In fact, from a value of 1.4 in 2008 they reach a value of 1.6 in 2017. The liquidity of southern firms, as can be seen from the graph, is higher than that recorded in the other two areas of Italy. Therefore, the best liquidity over time is also very close to the optimal values.

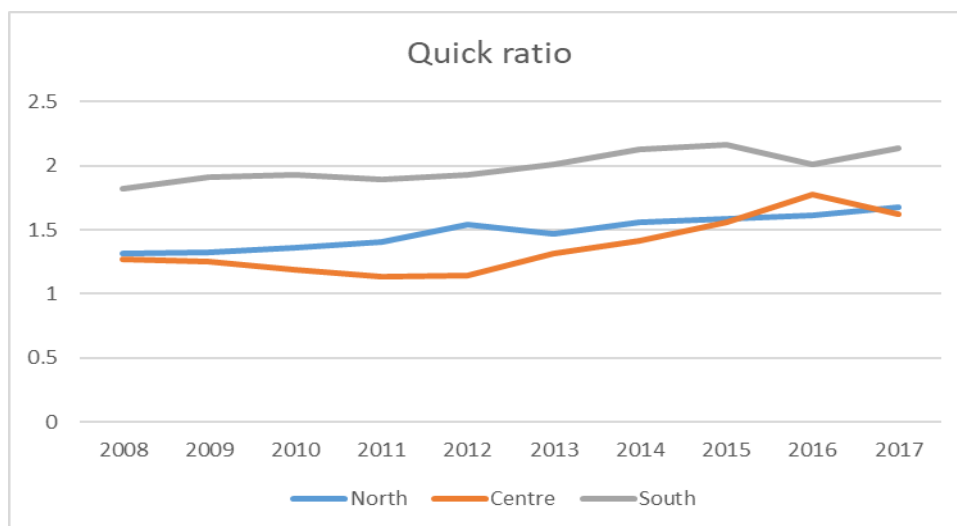


Figure 2: Trend of quick ratio according to geographic localization

Debt / equity (debt / equity) indicates the financial dependence of the company on third-party sources both in the short and long term. The optimal value of this index is open to 2. In fact, in this case the impression uses the capacity of the debt to raise the profitability of the company. However, higher values indicate a risky situation in which the company may lose its economic independence. It is therefore an index that must be used carefully. During the 10 years analyzed, the index assumes values greater than 2 in companies in the North and South, indicating a situation of serious risk, but at the same time full use of financial leverage.

The values in fact range from a minimum of 0.4 to a maximum of 4.5. The highest values are recorded in 2008 in all regions. However, while for the regions of the center these values remain throughout the decade even below 2, the situation in the other areas is different. In fact, companies in the south and the north have high motorcycle values in 2008 and then have a very decreasing trend until 2010 in 2011. The northern regions have a further peak in 2011 with a value of 4.5. The central regions certainly have the most stable trend over time, albeit also decreasing. Thus, decrease occurs in conjunction with the process of transforming the regulation of these companies. They are in fact called to greater financial sustainability also due to the effect of tariff variations. In fact, since 2011 they are determined by ARERA (Iovino, F., 2012; Iovino, F., 2015), Italian Authority for the regulation of energy networks and environment (Iovino, F., & Migliaccio, G., 2019b).

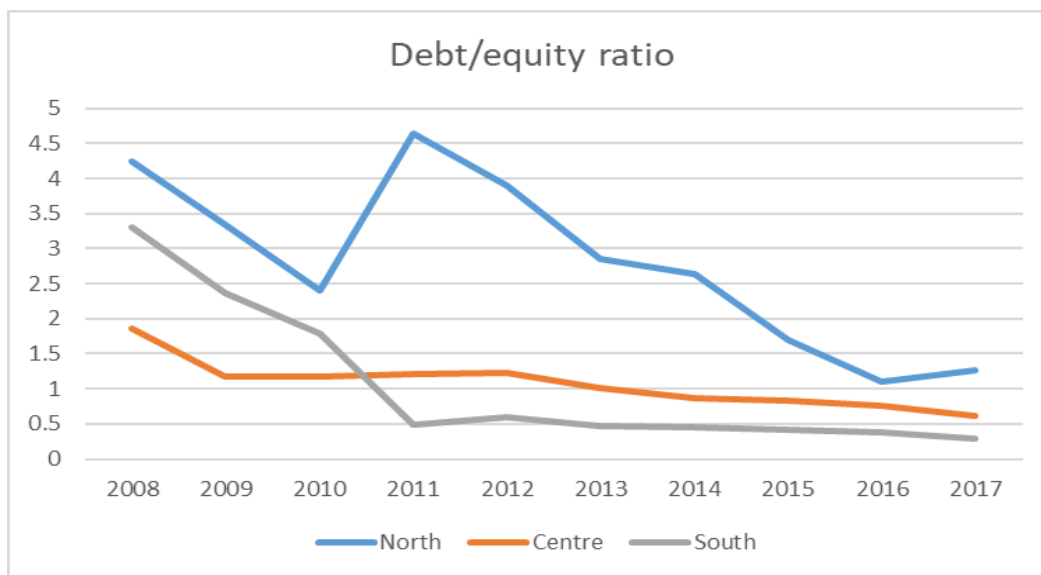


Figure 3: Trend of debt/equity ratio following the geographical area

Therefore, from the analysis of the trends carried out in relation to the quick ratio and the debt / equity ratio over the course of the decade, the situation has improved in conjunction with the implementation of reforms by the legislator in the conduct of Italian water companies. This is particularly evident for the debt / equity ratio that passes from a highly risky situation to a more contained one and around the equilibrium value. In this way, the company is able to exploit the leverage of the debt, but at the same time to have a non-risky position towards third parties. The quick ratio also assumes slightly increasing values in all geographical areas. It can therefore be stated that the H1 hypothesis is verified. Furthermore, the values of the two indexes analyzed appear quite different in the different geographical areas. However, there is a certain similarity between north and center due to the quick ratio, and in some years between center and south for the debt / equity ratio. Substantially however, even the hypothesis H2 is verified. Therefore, the results in terms of financial sustainability of water companies by virtue of the reforms carried out are substantially positive, but with variations in the relative impacts in the various geographical areas.

#### 4.2. Analysis of variance

The results of the ANOVA (one-way) test are shown in table 1. The geographical variable was used as an independent variable. The table shows a statistically significant difference between at least two of the values included in the sample. In fact,  $(F(2,27) = 42.59, p = 4.45941E-09)$  and  $F > F_{crit}$  with a p value less than 0.05.

Anova: Single Factor  
SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	10	14.86295775	1.486295775	0.016576619
Row 2	10	13.68214286	1.368214286	0.048102806
Row 3	10	19.95391304	1.995391304	0.013558589

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.22157503	2	1.110787515	42.59262737	4.45941E-09	3.354131
Within Groups	0.704142119	27	0.026079338			
Total	2.92571715	29				

Significance level  $p > 0.05$

Table 1: Quick ratio – ANOVA (one-way) using as an independent variable the geographic area

There is therefore a statistically significant difference between the quick ratio values recorded in the period under investigation when the geographical variable is considered as an independent variable. Also in the case of the debt / equity ratio ANOVA (one-way) confirms that there is a statistically significant difference between the values achieved by Italian water companies in the various geographical areas. In fact,  $F(2,27) = 11.0034$ ,  $p = 0,00032$  and  $F > F_{crit}$  with a p value less than 0.05.

Anova: Single Factor  
SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	10	28.08704225	2.80870423	1.517868
Row 2	10	10.73857143	1.07385714	0.123813
Row 3	10	10.57695652	1.05769565	1.119271

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	20.2532887	2	10.1266444	11.00342	0.00032	3.354131
Within Groups	24.8485729	27	0.92031752			
Total	45.1018617	29				

Significance level  $p > 0.05$

Table 2: Debt/equity ratio – Analysis of variance with the geographic area as an independent variable

ANOVA therefore confirms for both indices that there is a statistically significant difference between the different geographical areas of the country. The hypothesis H3 is therefore confirmed.

## 5 CONCLUSION

The water sector, like other public services, has been characterized by profound reforms since the 1990s. In fact, the priority objectives were on the one hand to guarantee all citizens access to this resource as an indispensable asset and therefore a universal service. On the other hand, it will also be possible to carry out all those transformations that are capable of ensuring an adequate saving of resources in supplying public finance problems both nationally and locally. All these reasons led to an increase in infrastructure investments with the primary aim of ensuring the technical quality of the service. (Gronroos, C., 2005; Iovino, F., 2012; Iovino, F., 2015). In this general framework of reforms, the present work carries out an analysis of two financial indices relative to the period (2008-2017). It highlights substantial positive effects of the reform processes on the financial sustainability of Italian water companies. The quick ratio appears to be positively affected by the reform processes.

In fact, we note a slight but constant increase in its values over time in all the geographical areas analyzed. This implies that Italian water companies can count over time on greater liquidity towards third parties. They will therefore be able to deal with the requests coming from their creditors in the short term with relative ease, using only their own liquidity. This is also the result above all of the change in tariff regulation and a general increase in tariffs over time. The debt / equity ratio also assumes decreasing values over time. This is the result of a more careful financial management aimed at reducing risk positions towards third parties. In fact, the index is reported from very high values and therefore also risky in 2008, to very low values in 2017. This occurs in all geographical areas indicating a reduced recourse to third-party assets and therefore a less risky situation, but at the same time that it does not fully utilize the advantages deriving from the financial lever. This distinguishes all geographical areas. However, for both indices there are differences between the different geographical areas. This implies that the infrastructural, but also financial differences of these companies are not completely overcome. However, the common element is that overall financial sustainability is however positive, but with obvious differences between the different geographical areas. The differences between the different geographical areas are confirmed both by the trend analysis and by the ANOVA. This paper is an important contribution, because it carries out an analysis on almost all the population of Italian water companies and not just a sample. Furthermore, it is carried out with reference to a fairly large period, 10 years. It is such as to capture some significant changes due to the legislative interventions that have occurred over time. The present work also has limitations deriving also from the use of only two financial indices. However it represents an exploratory study. To this it is added that only the companies of which all the values for the two indexes analyzed during the 10 years of investigation are available are considered. The paper also does not consider the merger and aggregation processes that have characterized the sector. These limits also constitute future research guidelines. Indeed, further investigations will be aimed at analyzing a larger number of both income and financial indices (Iovino, F., in press). Comparative comparisons can be made with the results of companies from other European countries, all being involved in a general reform process. Also interesting is the verification of non-financial variables, including certainly the cultural and relational ones (Iovino, F., 2012; Iovino, F., 2015).

#### LITERATURE:

1. Gronroos, C. (2005) *What can a service logic offer marketing theory*, Helsinki: Library of Swedish School of Economics and Business Administration.
2. Iovino, F. (2012). Le scelte delle politiche di marketing delle imprese energetiche. *Management delle utilities*, 4, 23-35.
3. Iovino, F. (2014). L'internet marketing nelle imprese energetiche: il caso di un'impresa elettrica romana. *Mercati e competitività*, 3, 141-161.
4. Iovino, F. (2015). Relationship marketing by Energy companies. *Review of International comparative management*, 16(5), 558-573.
5. Iovino, F., Migliaccio, G. (2016). E-marketing by energy companies. 9th Annual Conference of the Euromed Academy of Business, "Innovation, Entrepreneurship and Digital Ecosystems", 14-16 September 2016, Warsaw, Poland, Book of Conference Proceedings, Euromed Press, 1036-1048.
6. Iovino, F., Migliaccio, G. (2018a). Profitability dynamics of tourism companies during the crisis period (2007-2015). In Vrontis D., Weber Y., Tsoukatos E. (Eds), Conference readings book proceedings, 11th Annual Conference of the EuroMed: Research Advancements in National and Global Business. Theory and Practice, Valletta, Malta, September 12th-14th, EuroMed Press: Cyprus, 663-677.

7. Iovino, F., Migliaccio, G. (2018b). Financial dynamics of tourism companies, travel agencies and tour operators, during the crisis period. In Conference Proceedings: 2nd International Scientific Conference on Economics and Management -EMAN 2018: Economics & Management: How to Cope With Disrupted Times, Ljubljana, Slovenia, March 22th, Printed by: All in One Print Center, Belgrade, 693-702.
8. Iovino, F., Migliaccio, G. (in press). Financial Dynamics of Energy Companies During Global Economic Crisis. *International Journal of Business and Globalisation*, (doi: 10.1504/IJBG.2019.10011698).
9. Iovino, F., Migliaccio, G. (2019b). Energy companies and sizes: An opportunity? Some empirical evidences. *Energy Policy*, Vol. 128, May 2019, DOI: 10.1016/j.enpol.2019.01.027, 431-439.
10. Iovino, F., Migliaccio, G., (in press). Mobile marketing and strategy by energy companies. *International journal of Public Sector and Performance Management*.
11. Iovino, F., (in press). The profitability of water companies during ten years. In Conference Proceedings: 3rd International Scientific Conference on Economics and Management - EMAN 2019: Economics & Management: How to Cope With Disrupted Times, Ljubljana, Slovenia, March 28th, Printed by: All in One Print Center, Belgrade.
12. Li, L., (2018) *Private sector participation and performance of county water utilities in China*, China Economic Review, Vol. 52, pag. 30-53, DOI: 10.1016/j.chieco.2018.06.001.
13. Maziotis, A., Saal, D.S., Thanassoulis, E., and Molinos-Senante, M. (2018) *Profit change and its drivers in the English and Welsh water industry: is output quality important?*, Water Policy, Vol. 20, n. 5, pag. 995-1012, DOI: 10.2166/wp.2014.151.
14. Mellah, T., Ben Amor, T. (2016) *Performance of the Tunisian Water Utility: An input-distance function approach*, Utilities Policy, Vol. 38, pag. 18-32, DOI: 10.1016/j.jup.2015.11.001
15. Pinto, F.S., Simoes, P., Marques, R.C., (2017), Water services performance: do operational environment and quality factors count?, *Urban Water Journal*, Vol. 14, n. 8, pag. 773-781, DOI: 10.1080/1573062X.2016.1254254
16. Saunders, M., Lewis, P., and Thornhill, A., (2009), "Research methods for business students", (5th ed.), Pearson Education Limited, Essex, UK.
17. Suarez-Varela, M., de Los Angeles Garcia-Valinas, M., Gonzalez-Gomez, F., Picazo-Tadeo, A.J. (2017) *Ownership and Performance in Water Services Revisited: Does Private Management Really Outperform Public?*, Water Resources Management, Vol. 31, n. 8, pag. 2355-2373, Special Issue, DOI: 10.1007/s11269-016-1495-3
18. Vandone, D., Peri, M., Baldi, L., Tanda, A., (2018) *The impact of energy and agriculture prices on the stock performance of the water industry*, Water Resources And Economics, Vol. 23, pag. 14-27, DOI: 10.1016/j.wre.2018.02.002.



# THE IMPACT OF INNOVATIONS ON CREATING THE VALUE OF THE COMPANY GREYP BIKES D.O.O.

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## **ABSTRACT**

*Nowadays, companies are faced with accelerated changes and increasingly complex challenges at a micro, macro and international level. That is why research and development, innovation activity is gaining importance and manufacturers are often under pressure to innovate in order not to lose their market share. In this paper, the emphasis is on the impact of innovation on enterprise and economy, but also on international competitiveness and increase of company profits. It emphasizes the importance of investing in research and development and creative human resources, which is extremely important in both favorable and unfavorable market conditions. It also explains what all affects market success, how they manifest and what results in technological change. The aim of this paper is to explain the role and importance of applying innovation in business and creating sustainable competitive advantages through a detailed presentation of the value creation process of a particular company. In order to achieve this goal, the impact of technology development on the value creation of Greyp bikes d.o.o. , the sister company Rimac of the car, explaining how innovative components and specifications of the electric bicycle have affected business, competitiveness and value creation.*

**Keywords:** *innovation, organization, value of enterprise, market power*

## **1. INTRODUCTION**

Today, innovations are considered to be a key factor in the growth and development of modern enterprises and represent the driving force of the economy of many countries. In complex conditions of high competition in business, companies are forced to invest in innovation and innovate if they want to survive and be successful. Innovation is one of the main preconditions for the success of most market-oriented companies, but the fact that innovations are not the result of a well-conceived analytical process, research, and information is not to be ignored. Research and development activity affects business activity growth and is key to the process of creating value for the company resulting in greater efficiency in the process of converting raw materials into the final product. In the concept of the new and global economy, information has become a key factor in the value creation process. It is therefore important to pay attention to finding the right sources of knowledge that varies from industry to industry but also depends on company managers. When a company gains a competitive advantage because of its profitable investment in R & D or when it commercializes innovation, it should continue to improve its own products and / or services, ie to work on the value creation process to keep these benefits. Enterprise orientation to innovation results in increased productivity, or greater efficiency in the process of converting raw materials into the final product. This increases the company's competitiveness, which is manifested through market share growth, cost reduction and profit maximization. Innovations that are integrated into a competitor's product can be an additional boost to investment in R & D and innovation of their own business, which is particularly emphasized in the example of high-tech and medium-high technology companies.

An additional argument can be found in intensifying investment in research and development activities of enterprise innovation, which usually brings economic benefits for the enterprise but also for the consumer, thereby gaining higher quality and lower product prices.

By concentrating on a company engaged in the production of electric bicycles, this paper presents the impact of applying innovations to the company's value creation from which conclusions are drawn regarding the effect of innovative activities on company competitiveness.

## **2. OPTIMIZATION OF THE EVALUATION PROCESS**

When optimizing the process of creating value managers face the inputs they use and in what way. It all comes down to the problem of achieving production efficiency. It is possible to distinguish between technical and economic efficiency. Efficiency (Leistungsfähigkeit, Effizienz, fr.) rendement is the efficiency of a business, the ability to achieve results and business goals. The achievement of results refers to the short-term understanding of effectiveness, and the ability to achieve goals is a long-term aspect of effectiveness. Efficiency is commonly measured by the ratio of the results (effects) and investments or expenditures. Based on the recombination of manufacturing factors, the company creates a new value in the form of products and services for the market. The goal of the company is to maximize the fundamental determinant of its activity, sales, profit or growth. In this way, the company faces the dilemma of how many new values are created or produced and which and how many production factors are engaged in order to make the process of value creation the most efficient. This decision naturally precedes the decision on how to achieve the greatest effectiveness of the action, ie the direction of the resources and the process of creating value so that it can best market value. In optimizing the process of creating value, managers face a fundamental complex question: what inputs and what quantity to use? The central question of theory and assessment of production is therefore the issue of productive efficiency. The answer to that question requires the availability of a set of data and information. First and foremost, these are technical and technological data on production possibilities or production function. In addition, it is also necessary to have data on the prices of the production factors as well as the prices of the products. In this chapter of the paper, there will be more words than creating value, product and business efficiency in a competitive market.

### **2.1. Technical and economic production efficiency**

Technical efficiency is a quantitative or natural aspect of efficiency considerations and the underlying criterium for its achievement is labor productivity. It refers to the fact that an enterprise based on the available quantity of input can produce some of the maximum output. What it means to imply a certain part of the output can be produced in several ways each of which is technically efficient. Technical efficiency is a quantitative or natural aspect of efficiency considerations and the underlying criterium for its achievement is labor productivity. Economic and financial efficiency is a valuable aspect of efficiency consideration, and the criteria for achieving efficiency are economy and profitability. In market economies, the basic criterion for achieving efficiency is profitability, which means that an enterprise is operating efficiently if it achieves a satisfactory rate of profitability. It represents a valuable aspect of efficiency considerations, and the criteria for achieving efficiency are economy and profitability. In market economies, the basic criterium for achieving efficiency is profitability, which means that an enterprise is operating efficiently if it achieves a satisfactory rate of profitability. In addition, it is possible to distinguish between current and relative efficiency. Current efficiency implies consideration of the efficiency of an enterprise's business over a certain time.

By contrast, relative efficiency implies consideration of the efficiency of an enterprise in relation to other companies, ie considering the position of the company in its environment with regard to its relative efficiency.

## 2.2. Analysis of the factors of the value creation process

Based on the recombination of manufacturing factors, the company creates a new value in the form of products and services for the market. The goal of the company is to maximize the fundamental determinant of its activity, sales, profit or growth. In this way, the company faces the dilemma of how many new values are created od produced and which and how many production factors are engaged in order to make the process of value creation the most efficient. This decision naturally precedes the decision on how to achieve the greatest effectiveness of the action, ie the direction of the resources and the process of creating value so that it can best market value. In optimizing the process of creating value, managers face a fundamental complex question: what inputs and what quantity to use? The central question of theory and assesment of production is therefore the issue of productive efficiency. The answer to that question requires the availability of a set of data and information. First and foremost, these are technical and technological data on production possibilities or production functions. In addition, it is also necessary to have data on the prices of the production factors as well as the prices of the products<sup>1</sup>. Production can be defined as a process by which production factors are transformed into new or added value in the form of products or services<sup>2</sup>. From this approach to defining, it is clear that a product can be a final good or a semi-finished product that adds value to the process of production and leaves it to other entities for finishing or making the final product. This definition also includes the creation of services such as transportation services, legal services, educational services and research services. The economic theory of production is therefore a concept that helps managers in making decisions about finding the most efficient ways of combining different resources and inputs needed to create a particular output, in terms of products or services and in terms of available technology<sup>3</sup>. Factors of production are the means used for the production of goods and services. Their classic division refers to the differentiation of labor, capital and natural resources. Each element includes a great variety of forms. The work includes manual workers, but also the work of lawyers and scientists, as well as entrepreneurial talent. Production factors in each process of value creation can be divided fixed and variable. Unskilled labor and raw materials are examples of variable factors, and can be changed in a very short time. In the long run all factors are variable, while the period in which at least one factor is fixed is called the short run. The company therefore operates in the default mode in the short term, but planning affects the increase of efficiency and effectiveness in the long run (Bilgin, M. H., Danis, H. 2017.:602 ). It should be noted that in the long run generally improves the technology, which allows for increased efficiency in a way that more output can be obtained with a given amount of production factors, and the same amount is possible with less use of factors. Disposition of knowledge related to production and business processes is the most important factor determining the productivity or competitiveness of the modern enterprise. The concept of the new global economy and information becomes a key factor. Importance of information revolution is information and its value in the management and decision-making, while the technology is its agent or carrier. The goal of modern enterprises and the main task of management is to install information in the knowledge base, run the wheel of learning and increase the share of knowledge in the process of value creation.<sup>4</sup>

<sup>1</sup> Rupčić, N. (2016) Upravljačka ekonomika teorija i praksa, Tiskara, Zagreb, str. 58.

<sup>2</sup> Baković, T., Purić, T. (2011) „Uloga inovacija u poslovanju malih i srednjih poduzeća“, Poslovna izvrsnost Zagreb, Zagreb, Vol. 3., br. 1., 2011.

<sup>3</sup> Rupčić, N. (2016) Upravljačka ekonomika teorija i praksa, Tiskara, Zagreb, str. 79.

<sup>4</sup> Prester, J. (2010) Menadžment inovacija, Ljevak, Zagreb, str. 111.

According to the hierarchical values, there are data on the bottom, in the middle information and knowledge and wisdom on the top of the pyramid<sup>5</sup>. The data represents an objective, indisputable representation of the certain event or fact<sup>6</sup>. According to quality, there are important attributes as follow: accuracy, relevance, timeliness and clarity<sup>7</sup>. The data do not express knowledge. They only see the state that does not involve judgment or interpretation, and therefore do not constitute a stimulant action. The information which the user has added meaning, relevance and context becomes information. Data becomes information and knowledge only when it is interpreted by the recipient. Information is therefore the content of what is prepared by treating the data on objects of interest of companies, with the characteristics of reliability, innovation, availability in the right place at the right time and the fact that it relates to the problem to be solved. Information will become important only when the organization begins to effective use. Knowledge is understood information. Knowledge therefore represent information that have value in interaction with human capital. It refers to the ability of people to use information to solve complex problems and to adapt to changes. Just as the information is information which is added value, so the knowledge and information which has added value to her perform various intellectual operations. Knowledge is a joint collection of principles, facts, skills and rules. Knowledge can be defined as a collection of common principles, skills and rules embedded in the assets of the company in terms of systems, processes, procedures, structure, technology, pithy competencies and activities that create new value<sup>8</sup>. Knowledge in enterprises is stored in documents, databases, repositories, routines, procedures, standards and practical applications. There are different types of knowledge<sup>9</sup>:

- Knowledge integrated in the products and processes,
- Knowledge inside and outside the organization,
- Knowledge depending and independent of the creator of knowledge.

### 2.3. Sources of knowledge on technological options

When analyzing the efficiency of the process of creating new value it is assumed that managers have knowledge about the availability and capabilities of available technologies. First of all it should be noted that the term technology refers to the means and methods necessary to transform inputs into output. In other words, it is the engineering knowledge and know-how. Knowledge about technological capabilities can come from different sources<sup>10</sup>. Value source of such information varies from industry by industry, but also from managers to managers. It is necessary to distinguish fact bind you information on the technology for process and product innovations. In doing so, process innovation related to new methods of production of a product, and the product innovations related to the new concept of the product or service. For many managers, the most important source of acquiring manufacturing and process innovation independent process research and development (R & D). This process involves a group of engineers working on the design of new production processes or concepts to create a new value. However, you just large enterprises can afford owning a department that deals with research and development. Companies that do not have their own department for research and development can be served licensing technology. The company accounts for the development of new technology owner has rights to the technology that can be sold for a fee.

<sup>5</sup> Galović, T. (2016) Uvod u inovativnost poduzeća, Tiskara, Zagreb, str. 206.

<sup>6</sup> Eurasian studies in Business and Economics (2017) Empirical studies on Economics of Inovation, Public Economics and Management, Springer, Vilnius, str. 164.

<sup>7</sup> Rupčić, N. (2016) Upravljačka ekonomika teorija i praksa, Tiskara, Zagreb, str. 90.

<sup>8</sup> Prester, J. (2010) Menadžment inovacija, Ljevak, Zagreb, str. 200.

<sup>9</sup> Rasheed, H. (2012) Innovations strategy: seven keys to creative leadership and a sustainable business model, Bloomington, str. 117.

<sup>10</sup> Balič, J., Veža, I., Čuš, F. (2006) Napredni proizvodni sistemi, Fakultet elektrotehnike, strojarstva i brodogradnje, Maribor, str.101.

The fee for the purchase of production function can be determined in fixed amount. Then the cost of enterprise customer fixed nature. In addition, the fee can be determined as a payment based on the amount of output produced. In this case, the acquisition of technology for the enterprise customer's variable cost. Reverse engineering includes a reverse operation of the process of research and development. The company takes a product which is produced by competition and trying to design a method which would be copied or produced a similar product. The process usually results in a very similar function in the production compared to competitors. A valuable source of technological information also represent professional publications and organized meetings of experts of certain profiles that share knowledge. The simplest way to predict the development of technology can be a search expert opinion of one or more experts. This approach is simple and relatively inexpensive.

#### **2.4. The role of managers in process of value creation**

The fundamental role of managers in the process of creating new value is twofold. The manager should first of all ensure that the company operates in the production function and the company operates on the right point of production functions. The first mentioned task easy to explain, but very difficult to achieve in practice. The production function indicates the maximum amount of output that can be created with the given inputs. When considering the factor of work this means that it is assumed that workers indicate maximum effort. To make that happen, it is important to make efforts to establish the optimal function of human resources management, and it is necessary to strengthen the function of leadership and motivational work out policy. One of the main tasks of managers is to procure necessary inputs cheaply as possible and to ensure that the manufacturing process is converted into the desired final value<sup>11</sup>. The necessary inputs include both the workforce and the employees as a fundamental factor in the process of creating new value. It is important not only to acquire them, but also to ensure the timely and high quality work performance of all employees. Depending on the method of ensuring the optimal performance of employees, the policy of their payment or compensation is also dependent on them.<sup>12</sup>

#### **2.5. The impact of technology development on the process of creating value and competitiveness**

For changes in production function, the most important changes are in technology (technological or innovation advancement). Innovations can be twofolded<sup>13</sup> :

- Product innovations (refer to the introduction of new or improved products) and innovation processes, or the search for the technology that will enable it.
- Innovations are therefore an attempt to discover new production and service concepts, but also new organizational solutions, procedures, techniques, systems etc.

Innovation in terms of major technological breakthroughs are relatively rare. In this case the company achieves maximum efficiency, and becomes a monopolist. They are much more frequent smaller improvement products or processes. So there is competition, but the company that produces improved product or apply improved process has a certain degree of competitive advantage. Special types of innovations are inventions as solutions whose application is not officially registered, which is characterized by an absolute novelty. It should also be noted that the manufacturing and process innovation sometimes equate as production innovation one company can ultimately be the process innovation else who buys this innovation. Innovation is significantly affecting the manufacturing process.

<sup>11</sup> Golob, B. (2009) Inovacija od ideje do tržišta , Dragon, Rijeka, str. 268.

<sup>12</sup> Rupčić, N. (2016) Upravljačka ekonomika teorija i praksa, Tiskara, Zagreb, str. 32.

<sup>13</sup> Sveučilište u Zagrebu (2014) Strategija istraživanja, transfera tehnologije i inovacija, Zagreb, str. 477.

Even the concept of the production function of the fixed proportion of short-term situation which overcomes the innovation process. When some production factors become unavailable or too expensive, companies are developing new production processes and factors are used to a lesser extent, or use some other production factors. Impact of innovation on the production process can be analyzed using the isoquant<sup>14</sup>. New or improved product shows different isoquant that display different combinations of production factors necessary to create new or improved products. The impact of innovation of production processes can be explained in another way: it is a shift toward the origin isoquant which shows that each level of production is now possible to create with a smaller amount of engaged factors. Innovation and application of other people's new solution is essential for maintaining the competitiveness of businesses. In addition, it is important to maintain a presence on world markets. Larger quantities of production and of course sales increased benefit from economies of scale and cost savings can be used for intensive research and development, and strengthening future competitiveness. However, intensive investment in innovation is not a guarantee of commercial success. It was found that eight out of 10 new products disappear within a short time after their introduction.

### **3. INOVATION STRATEGY AND COMPETITIVENESS OF ENTERPRISES**

When talking about innovation strategies, we can talk about strategies at the national level and at the level of individual companies. In the interest of achieving the objectives of economic policy which include fostering economic growth and development, reduction of unemployment and promotion of investment, many countries have developed their national strategies of innovations<sup>15</sup>. The meaning of innovation policy for the economy has traditionally been more recognized in the advanced economies. Defining innovation strategy is a key element of successful management of innovation in the company. Companies are constantly in a position to make strategic decisions, especially in terms of defining the priorities of innovation projects. Many authors emphasize the proactive and reactive innovation strategy. A proactive strategy (innovation leaders) companies dealing with predicting and seek to anticipate changes in the environment, while reactive strategy (innovation followers) involves the reaction of businesses to the demand and needs of customers, as well as the activities of competitors<sup>16</sup>. A proactive strategy is based on research and development or the acquisition of new product purchase, not their own development. If the company applies reactive strategy that can directly respond to customer requirements (responsive strategies), copy the competition (imitative strategies), improve innovation competition or modify their existing products (defensive strategy)<sup>17</sup>. This chapter deals with the work of the innovation strategy, and market power of companies in the competitive market.

#### **3.1. Application and importance of the innovation strategy**

Company for the development of innovative potential must use innovation strategy applicable for the purposes of innovation to be achieved. Companies must choose one of two market strategies<sup>18</sup>:

- Leadership in innovations,
- A follower of innovations.

<sup>14</sup> Eurasian studies in Business and Economics (2017) Empirical studies on Economics of Innovation, Public Economics and Management, Springer, Vilnius, str. 536.

<sup>15</sup> Prester, J. (2010) Menadžment inovacija, Ljevak, Zagreb, str. 471.

<sup>16</sup> Amidon, D.M. (2009) Innovations strategy for the knowledge Economy, Elsevier, str. 222.

<sup>17</sup> Satpathy, A., Agrawal, A., Mohapatra, S. (2015) Innovations strategy for enterprises in emerging economics : Case studies for the digital age, Emerald, str. 185.

<sup>18</sup> Golob, B. (2009) Inovacija od ideje do tržišta , Dragon, Rijeka, str. 199.

If the company chooses the strategy of leadership in innovation, to be first to market with new innovations that have not qualified for the competition. It is necessary to invest heavily in improving technologies and base their business on creativity and taking risks. The company that wants to be a follower of innovation, innovation that benefits competition or other entity already placed on the market. It is not the market leader and does not go to market with new ideas, but invests in a detailed analysis of the competition, which in its operation imitates. (Balic, J., Gateway, I., Cus, F. 2006; 140) conducted a study to find the most effective strategies to create competitive advantage in the market and taking the twelve strategies that have proven most successful:

- Platform adoption strategy where the company meets the needs of all segments of consumers to provide a solution to personal preferences.
- A joint creation strategy in which an enterprise, in collaboration with a client, comes up with the idea that it applies in its business and innovation.
- A time cycling strategy in which a company comes out on the market with a new offer to reach customers as soon as possible.
- The strategy of increasing the value of a brand where an enterprise is upgrading an existing product or service to meet the needs of consumers.
- Technology Impact Strategy by which a company invests large amounts of money into the introduction of new technology to outperform competition
- A strategy to prove the future by which the company creates several options to reduce uncertainty in future business.
- A strategy based on savings is a strategy by which the company strives to reduce its production costs and other operating costs in order to invest in quality projects and innovations in the future.
- The partnership strategy that the company seeks to associate with other companies of the same or similar business to create competitive advantages.
- An innovation mutation strategy that creates a new product through "mutated" technology.
- A creative destruction strategy that destroys existing bids and replaces them with new products being marketed.
- A market segmentation strategy through which a new market segment is created for new ones
- the ability to sell products or services.
- Acquisition strategy by adopting a new brand, technology or market for new production.

Twelve mentioned innovation strategies provide space for catalyzing open innovation processes, and the pursuit of moving innovations from laboratories to limit research and development, and to become an essential part of the way the company is planning its future plans and implementation allegations<sup>19</sup>. The same authors say that "innovation condition in which the organization is located, while the strategy process by which something is done." Because of the great emphasis on risk management, measurement, past results, as well as detailed planning, strategy often leads to choking innovation. At company level, innovation activities in the modern business conditions are considered a key driver of business success and overall economic development. Therefore, they are in literature often highlights a factor that leads to the progress of the company. Innovation processes and innovation strategy are closely linked, and indicate how the company develops innovations, whether the innovation part of the way of thinking about business or something that happens by chance. While innovation processes ensure a transparent and organized system within a successful company or

<sup>19</sup> Roszak, M., Ulewicz, R. (2018) Marketing and market facing product and technological innovations, Monograph, Wrocław, str. 186.

organization, innovation strategy gives the company guidelines and strategic framework for the systematic development of innovation, ensuring at the same time more effective in achieving innovation results ie. The realization of innovation.

### 3.2. A strategy based on human resources of knowledge

Knowledge is a set of facts, information and skills acquired by formal, informal or informal learning, with a view to theoretical or practical understanding and problem solving. Knowledge of an organization determines its economic strength and the ability to develop other resources, increases the efficiency of their use, becomes valuable assets necessary in all spheres of decision making and contributes to the development of individuals, organizations and societies. Knowledge is an integrating factor that makes other organizations' resources and capabilities effective, especially in a complex, uncertain, turbulent and changing environment<sup>20</sup>. Knowledge to enterprises adds value that can not be imitated. Based on the established, as and numerous works on this topic, which came into being at the end of the 20th and early 21st centuries, it can be concluded that knowledge, ie acquisition of knowledge of strategic, crucial importance for the enterprise and its survival. Drastic changes in the international market at the beginning of the 21st century create new challenges for companies that require a competitive response. As a result of developing competitive strategies, knowledge management (knowledge management) is an interdisciplinary business concept that focuses on organizational knowledge<sup>21</sup>. The benefit of knowledge management consists of <sup>22</sup>:

- rapid innovation and flow of ideas,
- improving service and time optimization,
- Increased tax revenues due to faster trade,
- more diverse forms of rewarding employees,
- Reduction of costs due to source information and elimination of employee surplus,
- reducing training time.

The principles of the new economy are based on acquiring knowledge and learning how to use it and how to manage it. Modern organizations are transformed into creators of knowledge, their employees into knowledge workers, and knowledge management becomes the basic organizational framework of modern business. The concept of sustainable development is considered a milestone in the global approach to environmental protection and development. It is characterized by solidarity between generations and among nations. It was declared key to the development policy of both the EU and the UN. At the UN Summit on Environment and Development (Rio de Janeiro, 1992), it is clear that environmental protection is an integral part of overall human development. This concept first appeared in 1980 in the "World Strategy for Conservation", but it was only in 1987 that by publishing the report "World Commission on Environment and Development"<sup>23</sup>. Sustainable development is defined as "a development that meets today's needs without compromising the ability of future generations to meet their own needs" and is proclaimed as the main goal of the future economic policy of all countries. The key challenge of modern companies is defining, measuring, improving, evaluating and managing knowledge.

<sup>20</sup> Eurasian studies in Business and Economics (2017) Empirical studies on Economics of Inovation, Public Economics and Management, Springer, Vilnius, str. 149.

<sup>21</sup> Rasheed, H. (2012) Innovations strategy: seven keys zo creative leadership and a sustainable business model, Bloomington, str. 155.

<sup>22</sup> Satpathy, A., Agrawal, A., Mohapatra, S. (2015) Innovations strategy for enterprises in emerging economics : Case studies for the digital age, Emerald, str. 472.

<sup>23</sup> Eurasian studies in Business and Economics (2017) Empirical studies on Economics of Inovation, Public Economics and Management, Springer, Vilnius, str. 624.



From the aspect of knowledge management, the most important division of knowledge is implicitly and explicitly<sup>24</sup>:

- Explicit knowledge is knowledge that can be expressed in formal language and exchanged between individuals
- Implicit knowledge is personal knowledge that is seen in individual experience and includes inescapable factors such as personal beliefs, perspectives and values.

For organizations there is a much greater problem of managing implicit but explicit knowledge due to employee fluctuations. The solution to the problem lies in the codification of implicit knowledge, ie its transition to an explicit form that depends on the organizational culture. Knowledge is transmitted through the interaction between implicit and explicit knowledge through the following processes<sup>25</sup>:

a) Socialization

the process of transferring "hidden" knowledge between individuals before becoming explicit (through the learning model that takes place through verbal learning and imitation) translates not only knowledge and skills, but also working methods, norms and values.

b) Extension

the process of transforming "tacit" knowledge into explicit codification of implicit knowledge into a permanent medium that has a standardized physical form (in this way the organization protects against the loss of cumulative implicit knowledge from the earlier period).

c) Combination

the process of converting an explicit into another explicit state, different concepts are combined to create new, larger sets of knowledge.

d) Internationalization

the process in which explicit knowledge is transformed into "tacit", the application of knowledge for practical purposes (employees are aware that knowledge is power and are often not ready to share this power with others), the said knowledge creation strategy has no effect if the organizational culture does not affect the will of employees to convey their knowledge.

### 3.3. Technological changes and market success

Analyzing different forms of organization organization, in the conditions of globalization and new trends in the organization, technology has proven to be the main resource of modern organization. An organization that learns is an organization where people are continually expanding their creative capacities according to the results they really want to achieve, where a new way of thinking is supported, where common goals are set free and where people are constantly learning how to work together, taking into account the following: Universities, Research Centers, companies and economic policy makers have realized the need for stronger and better links between their networks in order to achieve sustainable development<sup>26</sup>. There are three main objectives that point to the acquisition and transfer of knowledge through cooperation between organizations to achieve sustainable development<sup>27</sup>:

- the ability to find the necessary knowledge that could not be experienced
- the ability to connect different subjects of economy and society

<sup>24</sup> Rasheed, H. (2012) Innovations strategy: seven keys to creative leadership and a sustainable business model, Bloomington, str.159.

<sup>25</sup> Prester, J. (2010) Menadžment inovacija, Ljevak, Zagreb, str. 157.

<sup>26</sup> Amidon, D.M. (2009) Innovations strategy for the knowledge Economy, Elsevier, str. 158.

<sup>27</sup> Galetić, L. (2011) Organizacija velikih poduzeća, Zagreb, Sinergija, str. 199.

- Developing and improving the organizational learning mechanisms for carrying out actions to protect the environment and achieve sustainable development.

Faced with ever-changing market and technology changes, companies must foster and develop flexibility to respond more effectively to the challenges of a newly created environment. This is achieved by strengthening intellectual skills of employees and by transferring knowledge to value creation processes that are the foundation for innovation. Contemporary economy and society, characterized by globalization, technology development and technology, is based on knowledge management. The concept of sustainable development implies a balanced economic, social and cultural development without endangering the environment, which will enable future generations to develop on the same or a higher level. For its realization, it is necessary to establish new social values based on knowledge, creativity and human resource abilities, which lead to the transformation of the traditional into the learning organizations, the creation of a creative working environment that encourages its employees to exchange ideas and knowledge and create an organizational culture based on knowledge. Modern organizations are transformed into creators of knowledge, their employees into knowledge workers, and knowledge management becomes the basic organizational framework of modern business.

### 3.4. Market monopoly power of a company

The market monopoly power of an enterprise stems from its ability to set a price higher than the marginal costs and is determined by the elasticity of the demand of that enterprise or the power of an entrepreneur to increase prices above the competitive level<sup>28</sup>. In the case of a monopoly this is a market demand because it is the only bidder in the market. Sources of monopoly power lead to the emergence of monopolies, which arise for various reasons, the first of which is raw material control. This is just a common case in some branches of the industry because such a company that has control over a rod, such as bauxite, can become a monopoly in aluminum production. The second reason is ownership of patents. If a company has a patent for production, such as a specific machine, it can become the sole producer of these goods, thus securing a monopoly power over others. A company that first starts producing a good product by running price policy disables competitors and becomes a monopoly and for that reason earns a profit. The natural monopoly also imposes itself as a source of monopoly power. The amount for which the price ( $p^*$ ) exceeds the marginal cost (MC) depends on the elasticity of the company's demand, the ultimate and most important determinant of monopoly power. If the demand curve is less elastic, the company will have greater monopoly power<sup>29</sup>. The first method of measuring monopoly power was introduced by economist Abba Lerner in 1934 and it is called Lerner's index of monopoly power. The Lerner index equals the negative reciprocal value of demand elasticity ( $E_d$ ) at the equilibrium point of monopoly. In other words, the absolute value of the elasticity of demand at the point of monopoly equilibrium equals the reciprocal value of the Lerner index<sup>30</sup>. The industrial organization deals with the creation, creation, maintenance of market power and its influence on society. Research results in the United States<sup>31</sup>.

- The level of market power is low, given that the profits are low, which is in line with the Chicago School.
- As long as free or relatively free entry into an industry the size of market power is not significant.

<sup>28</sup> Kulkarni, P. (2016) Knowledge innovation strategy, Bloomsbury, str. 149.

<sup>29</sup> Prester, J. (2010) Menadžment inovacija, Ljevak, Zagreb, str. 270.

<sup>30</sup> Sveučilište u Zagrebu (2014) Strategija istraživanja, transfera tehnologije i inovacija, Zagreb, str. 142.

<sup>31</sup> Roszak, M., Ulewicz, R. (2018) Marketing and market facing product and technological innovations, Monograph, Wrocław, str. 165.

- Since market power is linked to high profitability, it is important for every company to set a strategy to retain its market power.

Pareto efficiency implies a situation in which there is no way that by changing production or consumption increases the pleasure of a person, and that this does not go to the detriment of others, therefore, the economy is efficient if it is impossible to reorganize production or consumption so that someone is placed in a more favorable position the state of general equilibrium consumers are allocating their income to different products in order to maximize their satisfaction they choose goods to equalize the marginal usefulness per cash unit by each good producer will maximize their profits so as to determine the level of production where the marginal cost equals the price of the good. In the state of the general equilibrium of the market determine the prices and quantities so that the marginal utility of each good for the consumer equals the marginal cost of each good for the company<sup>32</sup>. Allocative efficiency can be graphically displayed using the Utility Possibility Frontier UPF, which shows the limit of usefulness or satisfaction that an economy can achieve. The curve is a wavy and negative inclination, and the point on the UPF curve shows the state of allocative efficiency and efficiency, and the point underneath the state below it is the state of allocative inefficiency greater than the point closest to the starting point. The discussion on allocative efficiency did not take into account the organization of the economy or ownership relations. In order for the economy to be efficient, a certain condition between the marginal benefits and the marginal costs of different goods must be met, regardless of the organization of the economy or the kind of ownership relations. The system of perfectly competitive markets allows allocative efficiency if there are no restrictions on its functioning limitations appear as<sup>33</sup>:

- imperfect competition
- externalities
- incomplete information
- Incorrect distribution of income.

### **3.5. Interaction of factors of industrial structure, business behavior and business results**

Pioneers in the Development of Industrial Organization Edward S. Mason and Joe S. Bain Representatives of the Harvard School. The School of Higher Education has defined the structure, the behavior, the performance, the causal connection between which there is a causal relationship, so that the market structure determines the behavior of the company, their activities that are related to the company's economic performance, and the company's own results depend on the state policy to adjust the market structures of the SCP paradigm . There are different approaches to the industrial organization<sup>34</sup>:

- Descriptive approach
- Microeconomic approach based on models and price theory (access through mathematical models)
- Strategic approach through game theory.

Mason (1939) first outlined the idea of linking market structures to competitive environments. It is the first theoretically defined approach to an industrial organization, and is based on a new classical theory. Mason argued that price and production decisions were influenced by the internal organization of companies as well as market structures. Bain (1951) improved Mason's concept by studying the case of the US manufacturing industry, he introduced the idea of four types of market structures.

<sup>32</sup> Galetić, L. (2011.) Organizacija velikih poduzeća, Zagreb, Sinergija, str. 159.

<sup>33</sup> Amidon, D.M. (2009) Innovations strategy for the knowledge Economy, Elsevier, str.71.

<sup>34</sup> Osmanagić Bedenik, N. (2010.) Kontroling između profita i održivog razvoja, M. E. P. d.o.o., Zagreb, str. 369.

Structure-Behavior-Performance Developed in the 1940s by Mason and Bain for Years<sup>35</sup>. It assumes a casual connection: Structure → Behavior → Performance. Rasheed (Rasheed, H. 2012: 236) pointed out that the central hypothesis (SCP framework) is that the observable characteristics of the market structure determine the behavior of the company on the market and that the behavior of the company within the market creates structural characteristics by determining measurable market performance. The basic market orientation, market structure, performance, behavior of four elements (variables) can not be observed separately but interlinked. The performance of the company depends on the behavior of the company, which consequently depends on the structure (factors that determine the competitiveness of the market). The SCP paradigm is based on the following hypotheses<sup>36</sup>:

- Structure influences behavior that results in lower concentration of companies in the market leading to greater competition between companies.
- Performance-influencing behaviors represent the impact that greater enterprise competitiveness has through lower market power.
- The structure directly influences the performance of the fact that lower concentration leads to lower market power, as for example the increase in the number of companies results in a fall in market power when prices are closer to the marginal cost.

The SCP paradigm tries to answer the question of how companies interact and compete with each other in different situations, and what are the results of these interactions and to what extent these results are consistent with the ideal market for perfect competition. The degree of market concentration is inversely proportional to the degree of competition, which is because the concentration of a single market encourages companies to merge. The traditional SCP paradigm argues that there is a direct relationship between the degree of market concentration and the degree of competition between companies. Business performance is positively related to its performance. The positive relationship between company profits and market structure attributes the benefits of increasing the market share of more efficient companies. This increase in profits is expected to stimulate more efficient companies due to their efficiency rather than negotiating between participants.

#### **4. EMPIRICAL EXAMINATION OF INNOVATION IN THE EXAMPLE OF GREYP BIKES D.O.O.**

##### **4.1. About Greyp bikes**

Greyp bikes is a spin-off or subsidiary Rimac Car, globally known as the leader of EV technology, or electric vehicle technology. The company's primary business is the design and manufacture of electric bicycles using state-of-the-art technology and performance. Other registered activities involving the design, construction, production of motorcycles, bicycles, batteries, batteries and chargers, production, traffic and public display of audiovisual parts, biofuel production and maintenance and repair of motor vehicles. Greyp bikes is the idea of people behind the most powerful electric car in the world - Rimac Concept\_One. The most famous product of the company is the electric bicycle G12, which is considered to be the fastest electric bicycle in the world, and after that, its successor - G12S is also designed. The G12S has its two versions depending on the power of the G12S Spirit, as the stronger version and the G12S Custom as the weaker.

<sup>35</sup> Osmanagić Bedenik, N. (2010) Kontroling između profita i održivog razvoja, M. E. P. d.o.o., Zagreb, str. 369.

<sup>36</sup> Roszak, M., Ulewicz, R. (2018) Marketing and market facing product and technological innovations, Monograph, Wrocław, str. 169.

#### *4.1.1. History and business development*

Greyp Bikes is a company founded in 2013, as the sister company Rimac automobila, the Croatian company for the production of high-performance electric vehicles, which was founded in 2009 in Sveta Nedelja. The idea of the Greyp Bikes was created when Zvonimir Sučić, the renowned designer of electric bicycles and high performance motorcycles, joined Rimac Automobiles as a mechanical engineer. Since 2001, Zvonimir has developed and built electric bikes in his garage with the help of several friends, which later became a lucrative job. In 2013, the first and most famous product, the electric bike G12, was launched, and in 2014 it is a test of endurance through nine European countries and covers 5.548 miles. By 2015, Greyp Bikes becomes a stand-alone spin-off company, or a limited liability company, and the same year launches a new upgraded G12S model. In the year 2017, Greyp Bikes commits an interesting collaboration with Croatian Telecom to improve the performance of the G12S bike and provide an innovative eSim service that has represented a major technological breakthrough as it replaces the use of physical SIM cards. The last 2018 collaboration was a partnership with Porsche AG, which bought a minority stake in Rimac Automobiles and Greyp Bikes.

#### *4.1.2. Mission, Vision and Goals*

Greyp Bikes is a technological company with the mission of reforming various industries and developing electric bicycles, bringing their design and performance to a higher level. The vision of the company is to become the world's leading technology leader in high-performance electric vehicle. The company's first goal was to apply the experience of state-of-the-art technologies that were primarily developed for super cars, electric bicycles, and to get closer to a wider range of users. The goals have been expanded after numerous successes and new partnerships have added extra winds to the back of the company's future business ventures. Developer co-operation with Porsche presented an important step for the company's strategic plan and set a new goal - to become the leading manufacturer of the most exciting electric bikes and to expand globally.

### **4.2. Analysis of Product Development and Production Processes**

In the contemporary environment and the knowledge economy, the production function is constantly changing as companies acquire knowledge through experience and investing in research and development. Changing the production function is most affected by changes in technology and technology. Innovation is considered any measure that leads to productivity growth, which increases the efficiency and effectiveness of the business, hence the improvement of the product or service. This manufacturing innovation was also used by the company Greyp Bikes, designing its first G12 electric bicycle using the technology developed for super cars, and later enhancing this model into a new model with significantly improved performance. By increasing the quality, performance and specification, the G12 model was redesigned to the G12S model.

#### *4.2.1. Product description and creation*

The G12S is currently considered the fastest electric bicycle in the world. He is the successor of the first and most famous model of the G12, and will be presented in 2015 at the Salon of Priva in London. The technology that was originally used to create the Rimac car has now been applied to electric bicycles. The best example of such an application is a battery developed for an electric car that develops a thousand horsepower applied to an electric bicycle that allows over 100 kilometers of mileage and 65 kilometers per hour without pedaling. Also, the product is performance at the very edge of the electric bicycle and motorcycle according to EU regulations. Such use is enabled by introducing important and practical innovations - a 4.3-inch color touch screen with integrated finger scanner.

The man thus relieved the worry of carrying the keys and allowed him to turn the bike on his finger. He chooses the way he wants to use the bike. It can be used in "Power mode" where its speed is limited to 70 km / h, or in "Street mode" where its speed is limited to 25 km / h. The bike can cross 120 km / h with one kw / h of energy, which corresponds to the amount of energy available in 10 deciliters of gasoline, which shows high energy efficiency. The G12S has retained many innovative features of its predecessor G12, but with more powerful batteries, new suspension and improved geometry. Much of the changes were made beneath the holes like a 19-inch frame made of steel alloy that was completely redesigned, requiring new geometry to accommodate new electrical components hidden behind the carbon fiber bundle. Instead of the current two battery packs there is now only one that despite the smaller mass provides more power. The batteries are, using Sony lithium-ion cords, designed in the Rimac Car. This is a battery of 1.5 kWh which is fully charged via a standard home outlet for 80 minutes, with a minimum lifetime of 1000 charge cycles. The next advantage of the G12S is regenerative braking, which makes the brakes much safer and in some cases too redundant. If the situation requires emergency braking, the model is equipped with radial monolayer hydraulic piston rods on both wheels. Like its predecessor, the G12S allows driving on the road but driving outside, eg in the woods, and Greyp Bikes secured customer satisfaction with new Rockshox suspensions. They include the Vivid R2C rear shock and the Boxxer RC fork that have 200 km of travel unlike the G12, which is 180 km. The starting price of this model is 8330 euros, but depending on the wishes and needs of the consumer it can be even higher. Consumers can also choose specific specifications such as side panel paint, rear suspension springs and wheel stickers, and for a bit more price the bike can be equipped with high quality Maxxis Hookworm road tires and mud.

*Table 1: Comparison of the G12 model with the upgraded G12S model*

	<b>G12</b>	<b>G12S</b>
<b>1. GENERAL CHARACTERISTICS</b>		
Engine power	12 kW	12kW
Speed	65 km/h	70 km/h
Range	max 75 km	max 120 km
Weight	50 kg	49 kg
Charging time	80 min	80 min
Regenerative braking power	2 kW	1 kW
Price	from 6000 €	from 8330 €
<b>2. BATTERY</b>		
Battery type	Lithium Nanophosphate	Litium - Ion
Capacity	1,3 kW	2 kW
Voltage	64 V	84 V
Podloga	Rimac Automobili BMS (Battery Management System)	Rimac Automobili BMS (Battery Management System)

Table 1 shows the main characteristics of both Greyp models, and also shows improvements and upgrades of the G12S model over the G12 model. The most important advances in creating a new model value are:

- 1) Improved performance
- 2) Quality and long-lasting battery (battery capacity)
- 3) Redesigned and Enhanced Geometry
- 4) Reduced weight with lower gravitational focus

Which is surely the biggest competitive advantage and the strength of the company Greyp is investing in extremely high quality equipment and technology, and most of it stands out as a

battery. In creating value, the company relies heavily on product performance to better position the market and compete with the competition. Compared to the competition of the same bicycle category, the Greyp G12S model is the fastest in the world, and what the company is currently working on is the new, upgraded G12H model. In Table 2, the G12S model was compared to several electric bikes of similar characteristics and specifications.

*Table 2: Comparison of the G12S model with global competition*

	Greyp G12S	Optibike R11	Trefecta DRT	Stealth B-52 Bomber	3 ELEMENT Espire S-Pedelec	Conway E-RIDER EXTREME	M55	Brinco Bultaco R	Grace Pro Range Extender Race
Engine power	12 kW	1,1 kW	4,0 kW	5,2 kW	1,2 kW	1,0 kW	2,5 kW	3,0 kW	1,3 kW
Battery capacity	1,5 kWh	0,96 kWh	0,93 kWh	1,5 kWh	0,84 kWh	0,70 kWh	1,32 kWh	1,0 kW	0,52 kWh
Maximum range	120 km	65 km	100 km	80 km	50 km	110 km	66 km	30 km	40 km
Maximum speed	70 km/h	53 km/h	70 km/h	80 km/h	45 km/h	60 km/h	64 km/h	60 km/h	45 km/h
Weight	49 kg	28 kg	51 kg	53 kg	36 kg	24 kg	30 kg	39 kg	34 kg
MRSP	9.999 €	12.300 €	22.500 €	10.000 €	7.500 €	7.299 €	24.000 €	4.800 €	7.999 €

In Table 2, the G12 S model is compared with its eight global competitors, with the following characteristics: engine power, battery capacity, maximum range, maximum speed, weight and Manufacturer's Retail Suggested Price (MRSP), ie the recommended retail price of the manufacturer. It is the American companies Optibike, M55 and Grace Bikes, the Dutch company Trefecta Mobility, Australian Stealth Electric Bikes, the German Third Element and Conway, and the Bultaco Spanish company. From the above characteristics, the table shows that the G12S has the best battery capacity, the maximum maximum range of 120 km and can achieve maximum maximum speed of 70 km / h. The Greyp bikes company produces batteries that represent its highest competitive advantage and strength. The battery of this electric bicycle, originally developed for an electric car, is also used for an electric bicycle and allows over 100 km range. So, the same employees, methods and manufacturing processes that are used for a car worth \$ 1 million, apply to bikes worth 6,000 euros. Carbon chassis, carbon parts and electronics are designed to allow you to ride on the road (on the road) but also outside (eg in the woods). The goal of constant investment in quality equipment and research and development at an acceptable price is to penetrate the market of the lower class, ie to produce a larger quantity of bicycles at a lower price and thus offer a lot of competing products available in the wider market.

### 4.3. Impact of innovation on enterprises

The ultimate goal of innovation is to improve the business. As the effects of innovation activities depend on the company's characteristics, this analysis seeks to explore the factors that depend on achieving good results. We consider the company's ownership structure, the ratio of highly educated employees, the market on which the company operates. Variables such as market orientation and variables that describe the company's dynamism are also taken into account through readiness to introduce new forms of strategy and organization. Although innovation is necessary to create competitive advantage and survival, it is an extremely risky activity (Urban and Hauser, 1993), which continually requires great financial and human resources. As innovations are considered to be one of the main drivers of business growth and boost business performance, it is expected that innovation in private and foreign-owned companies will lead to increased market share, improved quality and reduced material cost per unit of product. Due to the greater tendency to adapt to market trends, private and foreign companies are expected to have a positive impact on improving the environmental, health and safety aspects of the product.

The market where the company offers its products can be a predictor of the effects of innovation activity. The strengths and weaknesses of competitors, consumer requirements, legislation as well as different ecological, health and similar standards encourage companies to develop products that are in line with the situation in a particular market. Companies selling products on the international market are faced with the need for product modification, not only in order to achieve enviable business results and take advantage of competition, but also to enter and remain on the market at all. In order to show the effects of innovation, it is essential to state the company's characteristics and factors involved in the analysis.

*Table 3: Factors of Influence of Innovation Based on Company Characteristics*

<b>Type of property</b>	Most private property
<b>Market</b>	International market
<b>High education of employees in total number of employees (%)</b>	65,38 %
<b>Market orientation</b>	Orijentacija na potrošača / Orijentacija na konkurenciju

*Source: Own authoring based on a deep interview with company employee*

Table 3 shows factors influencing innovation based on the main characteristics of the company. Greyp Bikes is a privately owned company that is made up of several parties. Majority ownership is made by Mate Rimac (chairman of the board) and Krešimir Hlede (member of the board), while the minority belongs to the following members: Adriano Mudri, Camel Group Co., Ltd. (China), China Dynamics (Bermuda), Consulting Group Limited), New Automotive Development (UK and Northern Ireland), Porsche Engineering Group GmbH (Germany) and Ziad Tassabehji and Zvonimir Sučić. Market reach extends to international level. The first G12 model was delivered to consumers in 16 different countries and delivered to 5 different continents, while the latest G12 S model was delivered to all continents except Australia. In 2017, the number of employees in the company was 26, out of which 17 employees were highly educated, ie received education at the university, high school, conservatory and similar institutions while others gained secondary education. The company's market orientation has characteristics of orientation for consumers as well as for competition. Consumer orientation implies monitoring the level of consumer satisfaction, business strategy led by creating greater value for consumers, and business goals seen by consumers. Competitive leadership implies a quick response to competing activities, strengths and competition strategies as a subject of discussion among managers, and targeting consumers when there is a potential for competitive advantage. The effects of innovation imply an increase in market share, improved product quality, reduced material cost per unit of products, improved environmental impact and compliance with legal regulations and standards.

*Table 4: Impact of innovations on a company*

Growth in market share	Maintaining and increasing market share
Quality improvement	Continuous investment in quality, performance and equipment of the G12 S
Reduced cost of materials per nit	No reduction of material costs
Improving the impact on the environment	Effective and positive affects on environment and health
Legal regulations and standards	Satisfies legal regulations and standards

*Source: Own production according to the annual financial statements of Greyp Bikes company*

Table 4 shows how innovations have influenced the creation of enterprise values. The Greyp bikes company increased its market share in 2017 compared to 2016, which was the most

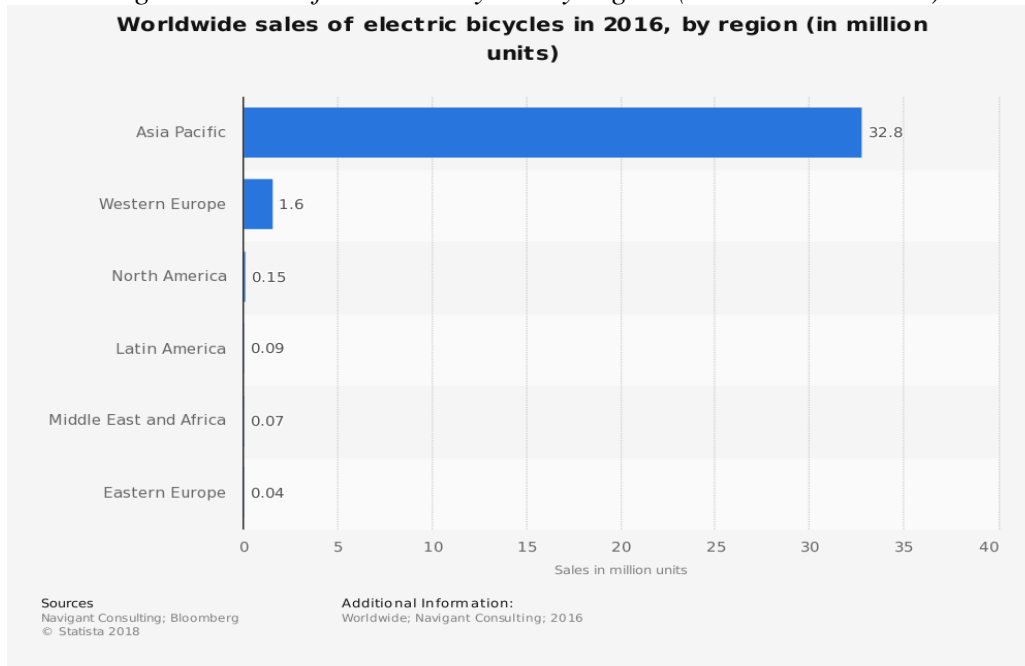


contributed by the differentiation strategy - the product offering it more interesting and better than the competition, attracting a greater number of consumers, but also its unique quality equipment and technology also attracts electric bicycle manufacturers who are increasingly interested in co-operation and not just overcoming the competitor. The expansion of market share was influenced by the improvement of quality, unique technology, customer retention and the acquisition of new customers through customized communication and marketing (by presenting at various fairs around the world, advertising and good customer communication). Quality improvement has been achieved by investing in research and development and the unique technology that makes the company's most important competitive advantage. The G12 and G12 S products are manufactured using the technology, equipment and processes used to manufacture the premium Rimac Car. The highest quality and long-life Lithium-Ion battery is outstanding, whose capacity has not surpassed almost any electric bicycle on the global market. In 2017, slightly lower material costs per unit of product than in 2016 were recorded, as the company produces only most of its equipment. The company manufactures almost all carbon components and electronics, the entire battery system except the cell, various metal and plastic components, and even the tools and manufacturing processes for the production of these components. Also, the material is largely taken from the Rimac Automobili plant only adapted to the production and design of electric bicycles, resulting in greater savings. The emphasis is not only on innovation of the product itself, but on processes that change the way of production. Shipping costs were also reduced when ordering from China. Electric bicycles greyp bikes work extremely positively on the environment and human health. They affect the reduction of CO<sub>2</sub> emissions in traffic, ie all synthetic gases, and thus reduce air pollution, especially in cities with a high concentration of road traffic. They also reduce traffic jams because they are more efficient and increase mobility, and research has shown that 20 minutes of cycling daily reduces stress and positively affects mental health. Electric bikes operate on the principle of an electric motor that is filled with battery, which, compared with gasoline or gas engines, greatly contributes to environmental protection. No harmful substances can pollute the air and affect global warming. The company meets its statutory standards and standards and contributes to the security standards of its traffic with its innovative processes. The product is performance on the border between bikes and motorcycles by EU regulations.

#### **4.4. Analysis of the technological advancement of the market production of electric bikes**

In recent years there was a dramatic rise in the popularity of electric bikes. The current world leader is China, which is the largest market of electric bicycles and on whose streets driven more than 200 million electric bikes. In Europe, sales also growing - Germany and the Netherlands produce more than half of all electric bikes sold in Europe. In some European countries such as France and Switzerland increased amounting to several tens of percents annually. In Croatia, Bosnia and Herzegovina and Serbia market of electric bikes is also moving upwards. The offer is all quality and demand is increasing, regardless of the rather high price. Potential consumers available is a rich assortment, and more and more companies engaged in the production of electric bicycles, just as it does and Greyp Bikes.

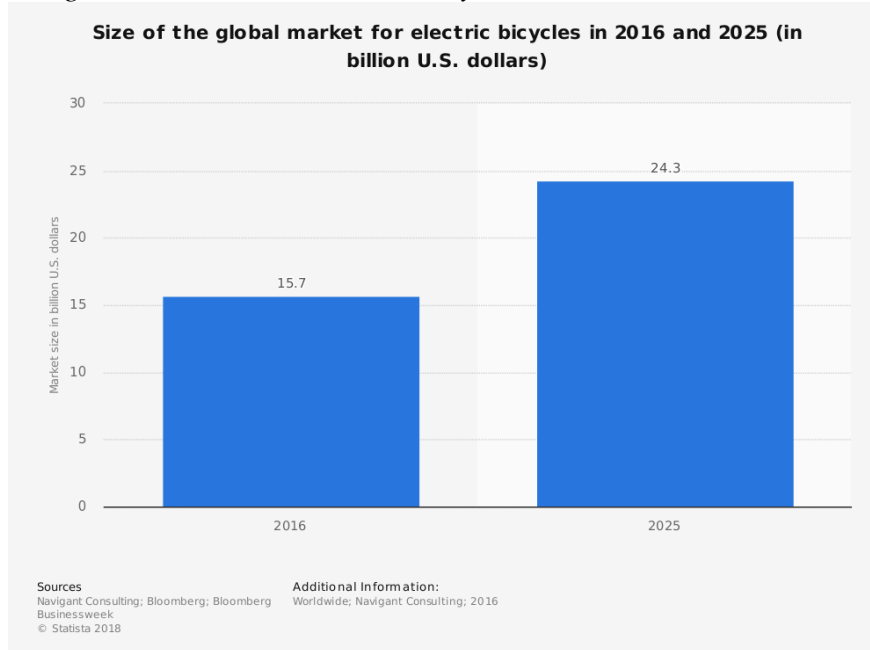
*Figure following on the next page*

*Figure 1: Sale of electric bicycles by region (world market 2016)*

Source: „Worldwide sales of electric bicycles in 2016, by region“, Statista, Hamburg, <https://www.statista.com/statistics/255658/worldwide-sales-of-electric-bicycles-by-region/>, 15.08.2018.

Figure 1 shows the sales of electric bikes in the world by region 2016-year. 2016-year in Asia has sold about 32.8 million electric bikes, and in 2018 th Asia is also considered the largest manufacturer of electric bikes that are expected in the future. China is the largest market of more than 2002-year. Since 2002-year sales in China sumanito increased from about 300,000 to about 33 million units in 2016.-oj. Similarly, driven by economic growth and the increasing popularity of the Dutch market of electric bicycles increased by 3.2% in 2017-th year, and the total number of bicycles sold close to one million units in that year stating that the sale of e-bikes are still not reached its maximum volume.

*Figure following on the next page*

*Figure 2: The World Electric Bicycle Market in 2016 and 2025*

Source: „Size of global market for electric bicycles in 2016 and 2015“, Statista, Hamburg, <https://www.statista.com/statistics/255653/worldwide-sales-of-electric-bicycles/>, 16.08.2018.

Figure 2 shows the size of the world market of electric bikes in 2016 and the expected size of the same markets in 2025. It is expected that the market will reach about 24.3 billion US dollars by 2025. The US market electric bikes size is about six billion US dollars in 2015. The Director Bosch e-bike system claims that the 2019-year market of electric bikes do more than 50% of the total bike market. What contributes most to the high growth market of electric bikes in the last few years is a major technological advances, investment in research and development, human resources, and monitoring the level of satisfaction of consumers. Plays a major role and the economic factor - the electric bike is on average two to three times more expensive than a conventional but offers multiple benefits - easier and more efficient to use with minimal cost to recharge the battery. Given the circumstances in the market, the European Union draws attention to boost production of lithium-ion batteries for electric bicycles kind of products and Greyp Bikes and used in his latest model G12 S. Administration support of the European Commission a powerful signal that will spur accelerated efforts. One of the most popular projects in the 2018-year's Terrae project for the establishment of production of lithium-ion cells in Germany, according to experts by 2025-year European the market could reach a value of 250 billion euros a year. Also, on 22 and 23 February 2018 in Brussels on the occasion of the industry of the European Union and under the auspices of the European Commission, held discussions on various aspects of the industry. One of them relate precisely to boost production of battery cells for electric bikes in Europe. It is important to emphasize that this project through European battery Alliance, a newly formed association of the EU, enjoys the full support of Brussels.

#### **4.5. Business performance analysis based on financial statements**

Based on the financial statements, balance sheet and profit and loss Racine downloaded from the official website of FINA analyzed the results and corporate performance shown by financial indicators. Data refer to the 2017-year. Calculate the liquidity indicators, debt and activities that belong to the group of safety indicators and indicators of economy that belong to the group of performance indicators.

Since the company in 2017 the age operates at a loss, it is not possible to calculate profitability indicators also no indicators of investment, since the company is not listed on the stock exchange.

#### 4.5.1. Liquidity ratios

Liquidity ratios belong to the group of indicators of safety of operations and measures the ability of the company to meet its short-term liabilities. Comparing short-term liabilities with short-term resources available to meet short-term obligations.

*Table 5: Liquidity ratios*

Current ratio	4,328
Quick ratio	3,701
Cash ratio	2,363
Financial stability ratio	0,386

*Source: Own production according to the annual financial statements of Greyp Bikes company*

Current ratio indicates the company's ability to meet its short-term liabilities. In the case of the company Greyp Bikes amounts to 4,328 and the minimum required value that would enable the company to reach 1,5. Therefore, the company currently has no dangers to remain without funds to settle. Quick ratio indicates whether the company has enough short-term assets to settle due liabilities without the sale of inventories. Greyp's quick ratio is 3,701, which indicates that the company has the ability to settle its obligations even without sales. The minimum required level is 0.9. Cash ratio indicates the company's ability to settle its liabilities at an instant and amounts to 2,363, which means that the company is capable of settling the company's total short-term liabilities. The financial stability ratio is 0.386 and since less than 1 indicates that long-term sources must finance short-term assets. Based on the liquidity indicators, it is seen that the company is liquid and safe.

#### 4.5.2. Debt ratios

Debt ratios show the structure of capital and the way the company finances its assets. They determine the degree of use of financial resources that the company has indebted.

*Table 6: Debt ratios*

Indebtedness ratio	0,455
Own financing ratio	0,545
Debt to equity ratio	0,835
Coverage level I,	0,228
Coverage level II.	92,04

*Source: Own production according to the annual financial statements of Greyp Bikes company*

The indebtedness ratio in this group is a fundamental indicator and shows the extent to which the company uses borrowing as a form of financing, ie the percentage of property acquired by borrowing. For undertaking Greyp Bikes it amounts to 0.455, which means that it is in charge of less than 50% and that the risk of not returning debt is lower ie that the relationship between debt and assets is lower. This means that 45.50% of assets are funded from other sources and that there is still a small area for borrowing the company. The company has good prospects for debt repayment and is not overly indebted. Own financing ratio is complementary to the indebtedness coefficient and their sum amounts to 1.

It shows how much the property is financed from its own capital and its value should exceed 50%, which is the case with the Greyp Bikes sub-fund, where it is 54.50%. This means that the company finances 54.50% of its total assets from its own resources. Debt to equity ratio shows the ratio of the total liabilities and capital of the company ie its own and its own sources of financing. It is desirable to be less than 1 in the case of Greyp. There is no increased credit risk for the time being and is at a permissible level but is already nearing overdraft and can be risky. Coverage level I or gold financing rule shows the coverage of long-term capital assets and in this case amounts to 0.228 and thus satisfied the condition and did not exceed the reference value 1. This means that the fixed assets are financed exclusively from their own sources. Coverage level II. shows a positive picture of Greyp's financial debt and stability, as it does not exceed 1, but additional caution is needed as it currently stands at 0,920 which is already very close and it is possible that in the near future it will exceed this amount. For the time being, Greyp Bikes finances its long-term assets from long-term sources. From the above indicators it can be concluded that the company is not overly committed and that it operates stable and secure. The company's level of indebtedness needs to be maintained and made aware that it does not deviate from the level of indebtedness in the future, especially since some of the indicators at the very limit are of satisfactory levels.

#### 4.5.3. Activity indicators

Activity indicators are used in assessing the effectiveness with which the company engages property they trusted him to owners. Are known under the name refers efficiency or turnover or turnover ratio. It refers to the speed of circulation of property in the business process.

*Table 7: Activity indicators*

Total assets turnover ratio	0,108
Current assets turnover ratio	0,161
Fixed assets turnover ratio	0,332
Inventories turnover ratio	1,076
Inventories collection period	339
Trade receivables turnover ratio	3,939
Receivables collection period	92,663

*Source: Own production according to the annual financial statements of Greyp Bikes company*

The total asset turnover ratio shows how many times a company's total assets are in the course of one year, or how many companies successfully use the property to generate revenue, and in 2017 it amounted to 0.108. The assessment of whether the reason for the low coefficient of revolving total assets is capital-intensive or ineffective in the use of assets can be carried out by comparing the ratio of the total assets revolving to the short-term turnover coefficient. Current assets turnover ratio shows how many times the company's short-term assets are in turn for one year. If the difference in coefficients is small or almost none, as in the case of the company Greyp bikes, it is possible to conclude that the enterprise is inefficient to use its assets because it is usually comprised of short-term assets that are expected to have higher revolving coefficients. The Fixed Assets Ratio shows how much an efficient company uses its long-term assets to generate revenue. In this case, it amounts to 0.332, which means that more money is needed to generate revenue related to long-term assets, or it would be desirable if that indicator is higher. The inventory turnover ratio shows how many times the inventories are reversed within one year. In the year 2017 it is 1,076, but it would be preferable to have a higher value than it was achieved. Shares of stocks are measured as the amount of time needed to convert the kuna into inventories into receivables or receivables.

For the Greyp Bikes company, bonding dates are a very high value of 339.22 and such a long average time investing time in stock requirements and greater investment in inventories. This is very unfavorable since larger investments in inventories mean less cash that could be available for other purposes. The lower value of this indicator is desirable. Trade receivables turnover ratio to the relationship puts sales revenue and total receivables, and based on it, it is possible to determine the average duration of the collection of receivables. In the year 2017 it is 3,939. The higher coefficient of turnover of receivables results in an increase in efficiency, therefore its growth is still needed. With the coefficient of turnover of receivables, the duration of collection of receivables is calculated on an annual basis and amounts to 92, 663 and approximately 93 days. It is important that an enterprise collects its claims as soon as possible to have the money to launch other activities and service obligations. The usual billing time is from 60 to 90 days, accordingly the company still has some satisfactory results but should regularly control and work on improving the activity. With activity indicators, it is important to be as big as you are, to stay on the same level or increase as you increase your business efficiency.

#### 4.5.4. Economic indicators

Economic indicators belong to a group of indicators of business performance and measure the ratio of income and expense in order to show how much revenue per unit of expenditure is incurred. If the value of the indicator is less than 1, this means that the enterprise has a loss.

*Table 8: Economic indicators*

Total revenues/total expenses ratio	0,519
Business revenues/ business expenses ratio	0,535
Financial revenues/ financial expenses ratio	0,088

*Source: Own production according to the annual financial statements of Greyp Bikes company*

All three indicators have a value lower than 1, which is not sufficient to meet the requirements that at least one unit of income covered by one unit of expenses. In 2017 the age expenses companies have surpassed the revenues and the company has made a loss. Most of the expenditures constitute material costs, because the company most invested in the equipment they need for production.

## 5. CONCLUSION

One of the most important aspects of the performance of each company is investing in research and development, innovation and monitoring the market situation. In the twenty-first century key agents of innovation activities are those companies that continuously monitor the market and technological change as the only way to survive in the market. Innovation does not occur as an isolated activity of the company but they can be assisted by promoting various types of cooperation; between universities, research laboratories, enterprises, customers, suppliers and consumers, etc. Such a division of the costs creates lower costs and increase the chance of successful innovation. Innovative companies are faced with increased concentration of competing forces and the expansion of new technologies that reduce the life of the final product and accelerate the production and marketing of innovative products, processes and services. Therefore, the Company encouraged to innovate more, faster and better. In other words, by encouraging investment in research and development activities and strengthening ability to introduce innovation to build a solid foundation for technological leadership and high level of competitiveness of enterprises. In the broadest sense, innovation means new products and services, as well as new technology, new production processes, new marketing methods, as well

as new models of governance. Innovation play an important role in the process of creating enterprise value as shown in the example of companies Greyp Bikes. Its innovative manufacturing processes and constant investment in research more innovative solutions, equipment and design of its products are positioned at the top of the charts that hardly any competitor can achieve. By investing in quality, research and human resources company Greyp Bikes achieved very valuable konkurntsku advantage, and its business has raised to a level where they want to imitate competitors and many of them buy their equipment. On the basis of analysis leads to the conclusion that the company Greyp Bikes, although currently operating at a loss, has great potential to fight for their share of the market and even more progress as best evidenced by the recent cooperation from 2018-year with Porsche, one of the most successful companies in the automotive market. Currently realized losses are the result of large investments in equipment and high material costs, but the company has a good chance to make profits in future periods. Electric bicycles and cars are due to its numerous advantages already extremely desirable, but still poorly accessible due to high prices in the market. But in the future this will certainly change and there are great possibilities that will soon replace existing means of transport, in particular due to the positive effect on the environment and the simple and effective use. Applying the latest technology and impressive knowledge Greyp Bikes has already confirmed its position in the world of electromobility.

#### LITERATURE:

1. Amidon, D.M. : Innovations strategy for the knowledge Economy, Elsevier, 2009.
2. Baković, T. : „Impact of Quality and Innovation on Businesses in Croatian Manufacturing Industry“, Ekonomski pregled, Vol. 62., br. 9., 2011., str. 525-543.
3. Baković, T., Purić, T. : „The role of innovation in the business of small and medium enterprises“, Poslovna izvrsnost Zagreb, Zagreb, Vol. 3., br. 1., 2011.
4. Balič, J., Veža, I., Čuš, F. : Advanced production systems, Fakultet elektrotehnike, strojarstva i brodogradnje, Maribor, 2006.
5. Barve, D.S. : „Design and Development of solar hybrid bicycle“, International Journal of current Engineering and Technology, Vol.2., No.4., 2016., str. 377-380.
6. Bilgin, M. H., Danis, H. : Innovation, Finance and the Economy, Springer, Vilnius, 2015.
7. Eurasian studies in Business and Economics : Empirical studies on Economics of Inovation, Public Economics and Management, Springer, Vilnius, 2017.
8. Galetić, L. : Large enterprises organization, Zagreb, Sinergija, 2011.
9. Galović, T. : Introduction to enterprise innovation, Tiskara, Zagreb, 2016.
10. Golob, B. : Innovation from idea to market , Dragon, Rijeka, 2009.
11. Huffman, R.C. : „Top management influence of innovations : Effects of executive characteristics and social culture“ , Journal od management, Vol. 19., No.3., 1997., STR. 549 – 574.
12. Kulkarni, P. : Knowledge innovation strategy , Bloomsbury, 2016.
13. Kulviwat, S., Bruner II O Al-Shuridan, B.C. : „The role of social influence on adoption of high tech innovations : The moderating effects of public/private consumption“, Journal of Business Research, Vol.62., No.7., 2009., str. 706-712.
14. Matovac, V.A. : „Innovative activities of Croatian companies - industrial differences“, Ekonomski pregled, Zagreb, Vol. 56., br. 3. 2005., str. 204-220.
15. Nikolić, G. : „New technologies make changes“ , Andragoški glasnik, Vol. 18. , br.2., 2014., str. 25-43.
16. Osmanagić Bedenik, N. : Contolling between profit and sustainable development, M. E. P. d.o.o., Zagreb, 2010.
17. Prester, J. : Management of innovations, Ljevak, Zagreb, 2010.

18. Rasheed, H. : Innovations strategy: seven keys to creative leadership and a sustainable business model, Bloomington, 2012.
19. Roszak, M., Ulewicz, R. : Marketing and market facing product and technological innovations, Monograph, Wroclaw, 2018.
20. Rupčić, N. : Managerial economics – theory and practice, Tiskara, Zagreb, 2016.
21. Satpathy, A., Agrawal, A., Mohapatra, S. : Innovations strategy for enterprises in emerging economics : Case studies for the digital age, Emerald, 2015.
22. Shinde, K. : Literature Review on Electric Bike, IJRMET, Vol.7., No.1., 2017.
23. University of Zagreb : Strategy of exploring, technology transfer and innovations, Zagreb, 2014.
24. Tipurić, D. : Changes in supreme management and corporate governance, Zagreb, 2010.
25. Vrdoljak Raguz, I., Podrug, N., Jelenc, N.: Neostrategic management: An international perspective on trends and challenges, Springer, Heidelberg.



# MANAGING GROSS MISCONDUCT, INSUBORDINATION AND INFIDELITY AT THE MALAYSIAN WORKPLACE – A LEGAL REVIEW

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## **ABSTRACT**

*With more and more people getting employed at the workplace, it is only natural that acts of misconduct are increasing. This paper attempts to demystify the act of misconduct that happens in the workplace and particularly focusses on specific acts of misconduct. The focus is on gross misconduct, insubordination, infidelity and the requirement for due inquiry prior to instructing a dismissal. In Malaysia, an act of misconduct is categorized into gross and general but how does one distinguish a gross misconduct from a general misconduct? Is summary or instant dismissal allowed for certain misconduct cases, or does every misconduct case have to go through required procedure of due inquiry before the sword of dismissal is unleashed? It would appear that complying with due inquiry prior to a dismissal is quite a grey area these days. Relevant case laws that are pertaining to the above will be discussed. This paper could be a great use of information to the every person who is working, legal practitioners, academics, policymakers and students of employment law. It could also be a guide for any possible future amendments to the current inadequacies of the law. This study has been done courtesy of funding that was granted by the Ministry of Higher Education of Malaysia.*

**Keywords:** *Due Inquiry, Employment Law, Gross Misconduct, Infidelity, Insubordination*

## **1. INTRODUCTION**

What is an act of misconduct? According to Collins English Dictionary, (i) it is a behaviour, such as adultery or professional negligence, that is regarded as immoral or unethical, (ii) to conduct (oneself) in such a way, (iii) to manage (something) badly (Collins English Dictionary, 2019). For the purposes of this article, the misconduct act is limited to acts done in the employment workplace only. Workplace misconduct falls into two categories: gross and general. While general misconduct is a problem for employers to tackle, gross misconduct is a good reason for swift disciplinary action which usually result in a dismissal. (Dhillon, 2015, p. 91).

## **2. GROSS MISCONDUCT**

A gross misconduct act is serious enough to warrant an immediate firing – legally referred to as being “summarily dismissed”. The employee might be dismissed without notice or pay in lieu of notice even for a first offense. Even if the employer is justified with quick dismissal, firing someone immediately may result in an employment complaint against the company and the company may be liable to pay out huge amounts in compensation if the dismissal is deemed to be without just cause or excuse (Mohamed & Baig, 2009, p. 6). It is important for employers to follow protocol, document all steps, and state the company's standard policy for gross misconduct dismissal (Dhillon, 2015, p. 89). The employee handbook should have a clearly defined misconduct section that reviews what is considered a gross misconduct offence (Lucas, 2017).

A person who is fighting especially fist-fighting during working hours and it is done on the premises of the employer is considered a gross misconduct. An illustration can be seen in the case of *Pekerja-Pekerja Perusahaan Membuat Tekstil dan Pakaian, Pulau Pinang & Seberang Perai v Allied Malayan Development Berhad*, Butterworth [1980] 1 ILR 70. In this case the claimant was employed as a Supervisor. He found another supervisor using company dye to dye his own T-shirt as well as mosquito net. He then tried to snatch the said articles from him. After 4 attempts of trying to get the said items, both the supervisors got into a fist fight and this resulted in the other supervisor getting more injuries compared to the Claimant. The Court stressed that although the Claimant was trying to protect the company from the cheating acts committed by the other supervisor, the Claimant should have reported the matter to his superior first rather than taking the law into his own hands. It was found that the Claimant had thrown the first punch and therefore started the fight. The Court held that in this case, the claimant had committed a grave misconduct so as to warrant his dismissal. The chairman, K Somasundram JMN in this case mentioned the following:

*“Fighting or violence is a category of conduct for which a single offence of a grave nature which could justify instant dismissal.”*

In spite of the case above, it cannot be said that every incident of fighting case will result in a lawful dismissal. In *Steelform Industries Malaysia Sdn Bhd v Foo Fook Ban* [1991] 1 ILR 442a, the Malaysian courts referred and adopted the English position laid down in the case of *Richards v Bulpitt & Sons Ltd* [1975] IRLR 134. The court provided that dismissal of the applicant on the basis of an automatic rule that the employee who was proved to have struck the first blow would be dismissed as unfair. So, there has to be exceptions in this area. Generally, conduct of an employee outside of the employer’s company or after office hours will not affect his or her employment. However, in certain circumstances, a serious misconduct committed by an employee outside of the employer’s company or after office hours may lead to dismissal (Geysel, 2017). In *Sebastian Matthias Boehme v. Siemens Malaysia Sdn bhd* (Award no. 667 of 2017), the claimant was dismissed by the employer due to a serious misconduct. The claimant was on a work assignment at the Renaissance Hotel in Johor Bahru, one of the employer’s corporate partner hotels. The employer received complaints against the claimant, who misbehaved due to drunkenness at the Renaissance Hotel’s bar. Complaints against the claimant are as follows:

- a) Disturbed and shouted at hotel guests and staff.
- b) Disturbed a hotel staff at the bar which eventually went out of control when he wanted to take her out.
- c) Sexually harassed a hotel staff at the bar by holding her hands and trying to kiss her and shouted vulgar words at her when she rejected him.
- d) Fought with hotel guests, including punching a guest on the head.
- e) Assaulted a hotel staff by strangling him and then trying to kiss him inappropriately.
- f) Attempted to throw the hotel bar’s decorative items on the floor.
- g) Attempted to throw the decorative items at the hotel guests.

The claimant raised the issue that he was at the Renaissance Hotel’s bar during his personal time and not at work and hence, his dismissal was without just cause and excuse. The Industrial Court held that the claimant was dismissed with just cause and excuse. Although the claimant had committed a serious misconduct outside of office hours, he was on a work assignment and he stayed at a hotel paid for by the employer, hence the dismissal was deemed lawful.

### 3. GENERAL MISCONDUCT

General misconduct is not egregious, meaning it isn't an intentional act to harm the company or another person. General misconduct is not usually a situation in which a person is summarily dismissed on the spot. The most common types of general misconduct are analysed below.

#### 3.1. Insubordination

According to Collins English Dictionary, insubordination is defined as a refusal to follow the orders of someone who is a higher rank (Collins English Dictionary, 2019). Insubordination is regarded as “acts subversive of discipline” (Malhotra, p. 1149). The “acts subversive of discipline” are as follows (Malhotra, p. 1149):-

- a) Writing a letter with offensive remarks to the company's director.
- b) Demonstrating insulting behaviour to a certain extent which affects the employment.
- c) Abusing his or her superior by using vulgar, filthy and intemperate language.

An example of insubordination can be seen in the case of Malaysian Airline Bhd v Paramsevan Karupiah [1998] 3 ILR 567. Here, the company dismissed the claimant who is a property helper. The claimant in this case refused to follow the orders given by the higher authorities which were to paint the car park lines at a building. He then refused another order which was to paint the lines at the visitors' parking lot. His reason was that such a job was beyond the comprehension of this job function. The court in this case mentioned the following:

*“An employee does not need a ‘job description’ to obey instructions from his superior. A superior can instruct a subordinate to perform any duties that he thinks fit and that subordinate cannot disobey him.”*

Further, in the case of Roslan Yusoff v Toyochem Sdn Bhd [2012] 2 ILR 497, the claimant was dismissed for uttering rude and abusive remarks to his superior when his superior handed him a letter of caution over his bad attendance at work. The claimant had also thrown the letter of caution to the floor which intensified the act of insubordination. The Industrial Court held that the abusive words uttered by the claimant was a deliberate show of sheer disrespect and downright insubordination. For the act of throwing the letter of caution on the floor, the Industrial Court cited the case of Megasteel Sdn Bhd v. Mohd Yusoff Musa [2008] 2 LNS 495, which held that an employee could be dismissed immediately if he or she refuses to accept a warning letter. Also in Florence Chang Mee Kheng v Kelab Taman Perdana Diraja Kuala Lumpur (Award no. 1895 of 2013), the claimant had committed insubordination when she wrote sarcastic, rude and impolite emails to her superior. The Industrial Court highlighted that the employer need not tolerate insubordination. If the employer permits the employees to speak rude and abusive language to each other, it will be impossible to regulate the employees' discipline and maintain the peace and harmony at workplace. On the other hand, the instruction or term given to the employee to complete a task has to be reasonable and realistic (Pathmanathan, Kanagasabai & Alagaratnam, 2003, p. 184). Also, if the instructions were not within the job scope of the employee or would humiliate him or lower self-esteem, then the employee may not be faulted and dismissed. In the case of Supply Oilfield Services Sdn Bhd, Labuan v Abdul Wahap Baki [1998] 2 ILR 78, the employee was a foreman at the time of the dismissal. He was dismissed by the company on a few grounds. Amongst which, was the fact that he had refused to obey instructions of his supervisor. The claimant's defence was that he was asked to perform rigging duties which was not his job but the job of general labourers. It also came to the knowledge of the court that the foreman only helped with the rigging work if help was urgently required. The court held that for the rigging duties, there was no exigency and based on the circumstances, there was strong reason to suggest that there was an attempt to

humiliate the party concerned. The instructions given to him did not fall into his job scope and the court held that his refusal towards the company's instructions were reasonable considering the circumstances.

### **3.2. Infidelity**

Every employee owes his employer a duty of fidelity and this requires him to ensure that his employer does not suffer any losses or damages because of his omissions or conduct (Pathmanathan, Kanagasabai & Alagaratnam, 2003, p. 174). Examples of conducts of fidelity are things like diverting business away from his employer or enticing or inducing other employees or potential employees to work in another establishment. This duty of fidelity is implied. Fidelity is also observed in the common law in the case of *Pearce v Foster* [1886] 17 QBD 536 where Lord Esher mentioned the following:

*“The rule of law is that where a person has entered into the position of servant, if he does anything incompatible with the due or faithful discharge of his duty to his master.”*

In Malaysia, breach of this duty can be a ground for dismissal. This can be seen in the case of *Stamford College Petaling Jaya v Lai Fook Seng* [1994] 2 ILR 679. The Claimant in this case had been dismissed as a lecturer in the college. The reason is that he was conducting private classes involving the college's students in a premises belonging to a competitor. In this case, the Court held that a person who is in a contract of fidelity must not place himself in a position in which his interests would contravene with the interests of the employer. The Court further added that even where the contract of fidelity did not state any term, such an implied term of fidelity and good faith will still exist. Another case which illustrates that the duty of fidelity is implied is the case of *Pantas Cerah Sdn Bhd. v Lau Boon Seng* [1999] 3 ILR 216. In this case, the employee was accused of pursuing transactions illegally and it was also alleged that he had traded with the company's customers to facilitate gaining profits for himself. He was therefore dismissed. His defence was that his colleagues knew about it. So, was his dismissal lawful? In this case, the courts held that there was sufficient evidence proving that the claimant knew what he was doing. The Industrial Court Chairman stated very clearly that an employee should be faithful, loyal and honest towards his employer at all time. Further, the employer has a fiduciary relationship with his employee and the employee therefore owes a duty of care to the employer. In the case of *Esso Production Malaysia Inc v Md Yusop Nordin* [1997] 2 ILR 711, the Chairman of the Industrial Court had stated the following:

*“It is settled law that the employee is required at all times to act in a faithful manner and not to place himself in a position where his interest conflicts with his duties. If the employee does an act which is inconsistent with the fiduciary relationship with the employer then it will be an act of bad faith for which his services can be terminated.”*

### **4. THE REQUIREMENT OF DUE INQUIRY**

A due inquiry ought to have been conducted by the employer on an allegation of misconduct before a dismissal can be justified. Malaysia legislation has included the due inquiry process in section 14(1)(a) of the Employment Act 1955 (Attorney General's Chambers of Malaysia, 2012). It states that an employer may on the grounds of misconduct where an action violates the express or implied conditions of his service, after due inquiry dismiss the employee without notice (Attorney General's Chambers of Malaysia, 2012). Generally, a due inquiry or a domestic inquiry should include a few steps. First, the employee who is going to be dismissed has the right to be informed of the accusation that has been made to them in writing. Next, the employee is provided with a chance to defend himself.

Before he is brought to the proceedings, a reasonable period is given for him to prepare all the related information as well as evidence that might secure him from disciplinary actions. Then, another strict condition of conducting such inquiry is that the panel of domestic inquiry must be from any unbiased parties to avoid any conflicts (Dhillon, 2015, p. 96-97). In the case of *Eastern Plantation Agency Sdn Bhd v Association of West Malaysian Plantation Executives* [1985] 1 ILR 339, the court commented on the concept of natural justice which has twin rules namely the rule of a fair hearing and the rule against bias. The former demands a fair hearing. If a hearing is not conducted, this anomaly may be used against the employer as a violation. The latter rule against bias is also of equal importance where a man should not be judged until he is proven guilty. As the saying goes, justice must not only be done but also clearly seen to be done prior to a dismissal taking place. In *Dreamland Corp. (M) Sdn. Bhd. v Choong Chin Sooi & Anor* [1988] 1 MLJ 111, the court stated that not only the reasons for the dismissal but also how the dismissal was done will also to be taken into consideration. Further, “the accused must be given ample chance not only to know the case against him but also to answer or defend it” (Anantaraman, 1997, p. 287). In contrast, in the case of *Wong Yuen Hock v Syarikat Hong Leong Assurance Sdn. Bhd. & Ors* [1995] 3 CLJ 344, the federal court held that the omission to hold a due inquiry will not influence or determine whether the employee was dismissed from a contract of service without just cause or excuse.

## 5. CONCLUSION

In most cases, an employer should not dismiss an employee for an act of misconduct unless it can be proven that the misconduct was a serious or gross one. In any case, it is advisable for the employer to have adhered to a due inquiry procedure before dismissing on ground of misconduct. Lately though, the industrial courts have been tolerant to allow dismissals on the grounds of misconduct without a due inquiry process taking place prior to the dismissal and this has caused confusion in this area. The authors advice to err on the side of caution i.e. to conduct a due inquiry process before deciding on whether to dismiss or not so that the employer will be seen in good light before the industrial courts if a dismissal matter is being heard.

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## LITERATURE:

1. Anantaraman V. (1997). *Malaysian Industrial Relations Law & Practice*. Seri Kembangan: Universiti Putra Malaysia Press.
2. Collins English Dictionary. (2019). Retrieved 3 March 2019 from <https://www.collinsdictionary.com/dictionary/english/misconduct>
3. Dhillon G. (2015). *Understanding Labour Laws*. Kuala Lumpur: (p. 91). Pearson.
4. Employment Act 1955. (2012). Retrieved 10 January 2019 from <http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/EN/Act%20265%20-%20Employment%20Act%201955.pdf>
5. Geyzel M. V. (2017). *Case Update: Can an employee be dismissed for misconduct off-the-job and outside office hours?* Retrieved 1 March 2019 from <https://themalaysianlawyer.com/2017/09/07/case-update-employee-misconduct-off-the-job/>

6. Lucas S. (2017). *An Employee Handbook Is Important For Companies Of Any Size*. Retrieved 23 February 2019 from <https://www.forbes.com/sites/adp/2017/12/06/an-employee-handbook-is-important-for-companies-of-any-size/#724b4c5874fa>
7. Malhotra O.P. (2004). *The Law of Industrial Disputes*. (p. 1149). Butterworths: LexisNexis.
8. Mohamed, A. A. & Baig F. B. (2009). *Procedure for Unfair Dismissal Claims in Malaysia*. Petaling Jaya: Lexis Nexis.
9. Pathmanathan N., Kanagasabai S. K. & Alagaratnam S. (2003). *Law of Dismissal*. Kuala Lumpur: Commerce Clearing House (Malaysia).

## THE QUALITY OF LIFE OF THE CITIZENS: THE RESEARCH IN THE CONTEXT OF THEIR SOCIAL WELL-BEING

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### ABSTRACT

*In the present article the development stages of the research techniques studying the life quality were considered. The reasons for the transition from the “purely objective” indicators of the living standard to the combined methods using the subjective evaluations of various factors determining people’s well-being were analysed. The reasons for the differences between the Western and the Russian research methodology of the social well-being were described. The problem of choosing the factors for the subjective evaluation of the social well-being was considered. The research results carried out in the city of Novosibirsk in 2018 were presented. The research showed that the subjective evaluations gave a better idea of the situation in the city than the objective data. According to the authors, the methodological problem of studying the social well-being is a diversity of the factors under consideration and their composition changes as well as the measurement method over time. Another problem is that the subjective meaning of the same factor can change in the respondents depending on a situation and that makes it difficult to compare the research results obtained at different times. To solve this problem it is necessary to define the essence of the social well-being and the connection of this essence with the factors measured in the research.*

**Keywords:** *life quality, objective factors of the quality of life, subjective factors of the quality of life, subjective well-being, well-being factors, social well-being, subjective evaluation, life satisfaction*

### 1. INTRODUCTION

Studying the quality of life is rather a developed both theoretically and methodically direction of the research in sociology. The data of the life quality research are used to estimate and forecast social expectations and electoral behaviour, as well as to develop the social policy and to plan the economic development of the whole country and specific regions.

## 2. LIFE QUALITY

The interest of foreign sociologists towards the research of “life quality” was formed in the late 1960s last century. The expansion of the USA economy throughout the world and the post-war reconstruction of Western Europe led to the situation when popular brands of the consumer demand and price competition ceased to conform to the real behaviour of consumers. On the other hand, the deficit of new solvent product markets made the producers artificially stimulate the consumer activity on the present markets encouraging the consumers to stop using the goods still suitable for exploitation in favour of the new ones. As a result, that caused the “consumer society” to appear. In the already changed socio-economic conditions the traditional, well-proven methods of measuring living standards and making forecasts of social, political and economic behavior of individuals and large social groups on their basis have started to lose their adequacy. It has become clear to scientists and practitioners that the models using only the objective factors of living standards (GDP per capita, average life expectancy, etc.) are too primitive to provide the necessary understanding of the motives of social subjects’ behaviour to make decisions. A. Campbell explained the weakness of the "objective" approach by the fact that for 15 years, from 1957 to 1972, the rates of living of Americans grew rapidly, and the proportion of those who considered themselves "very happy", especially among the richest Americans, steadily decreased. To describe the attitude of the respondents to their life situation more adequately, Campbell suggested three subjective measures: satisfaction with life, affective quality of life and perceived stress (Campbell, 1976). As a result, in the early 1970s, a new approach was formed, the specific character of which was that along with the objective factors characterizing the conditions of life, work and recreation of people, their subjective attitude to these conditions, as long as towards their change in the present and the future were started being taken into account. The Western, and especially the American research school developing this direction relied mainly on the tools of psychology, not sociology. This appears to have been influenced by the two factors. Firstly, because of traditional American individualism the object of the research was the social individual with their needs. The social group was perceived as a group of individuals, and its moods reflected the prevailing moods of individual members of this group. Secondly, psychology in the West occupying a strong position established scientific schools and had extensive experience of various researches. As a result, this direction of studying the subjective representations about the factors influencing the quality of life of the individual received the name “subjective well-being”. It is necessary to point out that social relations are significant in the study of the quality of life for sociology (Wnuk, Marcinkowski, 2012). In terms of psychology the phenomenon of the quality of life is connected with the subjective perception of the state of happiness (Anielski, 2007). As M. S. Tsapko specifies, the quality of life going beyond the financial security of a person is a category that distinguishes it from the standard of living. When studying them there should be an assessment of all conditions and characteristics of a human life-both objective and subjective-carried out. The objective factors include employment, professional demand, welfare, ecological situation, accessibility of cultural facilities, and the subjective factors are connected with life satisfaction, work and possibility of self-realization (Tsapko, 2017). It should be noted that domestic researchers are actively working on theoretical, methodological and practical aspects of studying the quality of life. (Toshenko, 2018; Choi, Oberemko, 2017; Rudneva, Mosyakina, 2016; Ilyinykh, 2016; Anisimov, Belova, Bulanova, Romanovsky, 2013; and many others).

## 3. SOCIAL WELL-BEING

Currently there are two approaches in the study of the social well-being that differ according to the scales used. The "comparative" approach is to assess the subject of different factors of one’s own life in comparison with the same factors in the life of others.



It means that a respondent evaluates the life satisfaction not on the basis of their own notions of "how we would like to" but comparing oneself with others. Accordingly, the statements used in the answers to the questions are "better than the others", "worse than the others". The "individualistic" approach uses absolute assessment scales of the satisfaction with the life factors by means of the statements - "I am respected", "nobody notices me".<sup>1</sup> Both approaches have similar theoretical and methodological problems that we will return to at the end of the article. The approach, which combines the measurement of the objective indicators with the analysis of the subjective estimations of the respondents, has been developed in the studies of the "social well-being" in the changing socio-economic conditions. And the concept of the "social well-being" itself has become the Russian equivalent of the western concept of the "subjective-being". Within the framework of this approach the objective factors are represented by such indicators as: standard of living, comfortable living, affordability of education, environmental pollution, crime rate, unemployment rate, availability and quality social services, etc. These indicators taken as a whole characterize the level of the well-being of the respondents. And the subjective estimations reflect the personal attitude of the respondents to these factors and the dynamics of their changes. The objective factors characterize the situation as a whole, and the subjective estimations are the perception of this situation by different social groups. The most debated issue of the theory and practice of the "subjective well-being" and the "social wellbeing" is the structure of the indicators, which should measure the subjective assessments of the respondents. The rich experience of the empirical researches of the social well-being is accumulated in the world practice. There are developed methodologies for studying the global and national social well-being. Based on the results of these studies, the integral indices of the social well-being in the world as a whole, the population of a particular country, a particular region, etc. are usually built. An example of such a technique is the "Global Wellbeing Index" developed in the United States. The research is conducted by the Gallup company in 160 countries. It measures five key indicators: success – job satisfaction and employment, etc.; social well-being – the presence of support and love from family and friends; financial well-being – satisfaction with the financial situation and confidence in the future; physical well-being – self-estimation of the health and life energy level; public well-being – a sense of security and pride for belonging to the society. (Kislitsina, 2016:25-26). One of the best known researches is the research "National calculations of well-being" carried out by the New Economics Foundation (NEF) in 22 European countries. It includes an assessment of the individual, social and professional well-being according to the following main indicators: 1. emotional well-being – balance between the frequency of positive and negative emotions; 2. satisfaction with life (positive assessment of life in general); 3. life energy (feeling of relaxation and healthy, physical activity); 4. resilience and self-esteem (optimism regarding the future, ability to cope with difficulties of life); 5. positive functioning (feeling of freedom to choose activities and availability of free time), competence (feeling of success in the business and ability to use their skills), involvement in the activity, meaning and purpose (a sense of value and usefulness of their activities); 6. social well-being (positive relationships with family and friends) and trust (trust towards the others, fair and respectful attitude on the part of the others, a sense of belonging to the society and support from people); 7. well-being at work (satisfaction from work, satisfaction from work and personal life balance, emotional experience of work, estimation of working conditions). Some experience of sociological researches of the quality of life and social well-being is also accumulated in Russia. A number of researchers study the social well-being of the population on the level of the country as a whole, individual regions and cities, in the context of various social and professional groups (by sex, age, social status,

<sup>1</sup>The updated Oxford Happiness Questionnaire is an example of this approach. <https://psycabi.net/testy/1076-obnovlennyy-oxfordskij-oprosnik-schastya-ohi-oxford-happiness-inventory-i-pervonachalnyj-variant-metodiki-testy-dlya-diagnostiki-urovnya-schastya>

employment, etc.). In all Russian researches such indicators of the social well-being are usually specified as: satisfaction with income level (prosperity), housing conditions, work and profession, possibility of a professional mobility (career) and education, satisfaction with family life, assessment of various threats to themselves and their families (poverty, unemployment, loss of health, environmental risks, crime, etc.), assessment of the level of safety, health and health care (Zudina, 2014; Kharitonova, 2009). In addition to these indicators Russian researchers include the measurement of the objective factors of socio-economic and political status of people (financial situation, level of welfare, migration and unemployment, forms of social protection, the nature of social relations, etc.), which are regarded as the determinants of the social well-being (Vishnevskiy, 2016:21). The specifics of the Russian approach is that in order to assess the social well-being in addition to the current state of the selected factors, the attitude of the respondents to the expected changes of these factors in the near future is described. This is due to the high level of unpredictability of living standards in Russia during the last three decades and the influence of this unpredictability on the social well-being of the population. In the research of the social well-being of the youth of Sverdlovsk Oblast, for example, the respondents assessed the dynamics of their social situation, comparing the past with the present and the expected future. The same approach was used to study the social well-being of students of St. Petersburg. The level of the overall satisfaction/dissatisfaction with the life situation (different aspects of life) and the level of optimism/pessimism estimating the nearest future (confidence in feasibility of their life plans, assessment of possible changes in the financial situation and life in general) (Vishnevskiy, 2016:51).

#### **4. THE RESULTS OF THE EMPIRICAL STUDY OF THE SOCIAL WELL-BEING**

The topical direction of the research in the modern Russian society is the study of the social well-being in the regions. In July 2018, the research was carried out in Novosibirsk, with the aim to identify the attitude of the city residents to various aspects of the quality of life influencing their social well-being. 1204 respondents<sup>2</sup> took part in the research. The analysis of the research results showed that in general it is possible to speak about rather a high level of the respondents' satisfaction with the objective indicators of the quality of life (beautification, work of housing and utilities, transport, affordability of education, possibility of leisure and recreation). The exception is the health care (36.5% of the respondents are not satisfied with the quality and affordability of medical services) and the ecology (about 20% of the respondents assessed them as unsatisfactory). As for the city's environmental problems air pollution, dust, debris and a high level of noise are the most alarming. These factors are pointed out by all the respondents regardless of their age, education and other factors. As for the subjective assessments most respondents are more likely to be satisfied with their lives. And this estimate is not very different for the native Novosibirsk residents and the visitors. Among the native residents of Novosibirsk 65.6% of the respondents are satisfied and rather satisfied with the life, which almost coincides with the estimates of those who moved from the countryside (60.4%) and immigrants from the CIS countries (64.8%). The satisfaction of the respondents who moved from other regions of Russia (70%) and small cities of Novosibirsk region (72.5%) is a little higher. The workers of scientific organizations (72.5%), agriculture (69.2%), employees of power structures (68.2%) and civil servants (63.6%) feel better than the others. The difference of the subjective estimations of the satisfaction of life of the respondents with different level of education is revealed. The highest levels of satisfaction are demonstrated by the graduates (58.6%) and postgraduates (66.7%), and the least- by the respondents without

<sup>2</sup>multi-stage sampling (administrative district of the city, street, house number), quota (gender and age). The study was funded by the Novosibirsk State University of Economics and Management's internal grant.

educational background (50.0%). The important aspect of the social well-being is confidence in the near future. Out of the surveyed 38.8% are confident and 31% are more confident in their near future (up to 1 year). However, different categories of the respondents show different levels of confidence in their immediate future. There is also a correlation between the level of the life satisfaction of today and the confidence in the near future. Of those who are fully satisfied with their lives today 71.2% of the respondents demonstrate a high confidence in the near future. The experience of conducting the research has shown that the subjective estimations allow to obtain a more adequate representation about the mood and the inquiries of the population than the conclusions on the basis of the objective indicators of the quality of life only. At the same time during the preparation and the conduction of the research the problem of defining the essence of what we measure with the help of different subjective indicators of the social well-being was revealed. It should be pointed out that not even a variety of the factors taken into account, but the fact that over time, their composition and method of detection change, although the objectives of the research remain the same. This means that either the former factors lose their informative nature as a measure of the social well-being, or the researchers themselves change the idea of the content of the phenomenon. As it was shown above in most foreign and domestic methods factors somehow related to the needs of people are used. And in some of them there is a direct connection with the hierarchical theory of needs of A. Maslow. But the needs of the "pyramid of Maslow" are inseparably linked to the individual – a social subject possessing a biological body, individual psychic and social status. Basic needs are directly derived from the need for a human physical survival as a biological species and to maintain their mental well-being within certain boundaries. But this, in turn, means that the needs, as the factors shaping the social well-being, are applicable only to one social entity – the individual. Meanwhile, there are other social actors – social groups. The group does not have its own biological body, as well as its own psychic, but there may be a change in the social well-being. For example, groups of football fans, whose dynamics of the social well-being strongly depends on the success of their favorite team, and not on the personal achievements -age, gender, educational, professional and other indicators of each individual fan. We can conclude from it that the social well-being is not directly related to any known needs of the people. This means that different social subjects (individuals and groups) have fundamentally different mechanisms for shaping the social well-being. Otherwise, the phenomenon of the social well-being is not associated with the specific biological, mental or social needs.

## 5. CONCLUSION

Thus, the problem of measuring the social well-being is revealed both in the instability of factors-measurers, and in their non-applicability to any social subjects, except individuals. In this situation two fundamentally different approaches are possible:

- 1) To recognize that there is no universal mechanism for the formation of the social well-being for individuals and groups, and to create some special research tools in each particular case. This is the way of the actual rejection of the theoretical comprehension of the phenomenon of the social well-being and understanding of the essence of the fact of what certain subjective factor in the past, present the respondent meant and what they will mean in the future. And the most important thing for the researcher is the loss of confidence that for the respondents the subjective essence of this factor has not changed over time, and the results of measurements received are comparable at different times.
- 2) To agree that the needs (whatever they may be) and the subjective feelings associated with them are not the real reasons for the social factors of well-being. In fact, the phenomenon of the social well-being is affected by a different essence, which can be common for all social subjects-not only individuals and groups, but also social institutions (political, religious, etc.). In this case it is necessary to define this essence and to find out, how the

qualities of this essence are connected to the needs measured in the researches. And if in the future this or that indicator ceases to reflect the desired quality, we must understand why it happens in each case, and what other indicator (or set of indicators) can be used for this purpose in the current situation.

Thus, to summarize it can be stated that today there is impressive experience of the applied researches using different indicators to measure the social well-being available, but theoretically the problem of the subject and the method of the research of the social well-being has not been solved yet.

#### LITERATURE:

1. Anisimov R.I., Belova N.I., Bulanova M. B., Romanovsky N.V., Toshenko Zh. T., Tsapko M.S. (2013) Quality of life of the Russian. The report on the results of the sociological research//Organization and self-organization of the intellectuals in the modern Russian society. M.: RGGU. pp. 421 – 482.
2. Anielski M. (2007) The Economics of Happiness: Building Genuine Wealth. Canada: New Society Publishers.
3. Campbell A. (1976) Subjective measures of well-being // *American Psychologist*. 31(2), p.117-124. [electronic document] URL: <https://psycnet.apa.org/record/1976-23875-001> (reference date 02.02.2019)
4. Choi V.I., Oberemko O.A (2017) The indicators of the quality of life in the regional centers of Russia// *Sociological Studies*. 6, pp. 57-67
5. Ilyinykh S.A. (2016) Quality of life: the study of the subjective evaluations of work// *Society: Sociology, Psychology, Pedagogy*. 3, pp. 21-24.
6. Kislitsyna O.A (2016) Measuring the quality of life/well-being: international experience. M.: Institute of Economics and RAS [electronic document] URL: [http://www.inecon.org/docs/Kislitsyna\\_paper\\_20160404.pdf](http://www.inecon.org/docs/Kislitsyna_paper_20160404.pdf) (reference date 03.02.2019)
7. Kharitonova T. V., Masterskikh I. P. (2009) Study of the quality of life of the population in the Russian Federation// *Practical marketing*.6 (148 in),pp. 3-24
8. Melnikhov M.V., Kolomenskaya A.S., Tevlyukova O.Yu. (2017) Daily relations in public places as an indicator of the quality of life of the population of the region (the example of the Novosibirsk region) // *Living Standards of the population of the regions of Russia*.3 (205), pp.100-105
9. Toshenko Zh. T (ed.) (2018) How do you live, the intellectuals? Sociological essays: Collective monograph. M.: The center for social forecasting and marketing.
10. Tsapko M. S. (2017) The quality of life of the Russian pensioner// *Bulletin of the RGU. "Philosophy. Sociology. Art studies "*. 3, pp. 60-71
11. Vishnevskiy Yu. R. (ed.) (2016) Social well-being of the youth of Sverdlovsk region in 2015: results of the sociological research: collective monograph. Yekaterinburg: Publishing house UMC UPI.
12. Wnuk M., Marcinkowski J.T. (2012). Quality of life as a pluralistic and multidisciplinary construct // *Problemy Higieny i Epidemiologii*. 93. URL: <http://phie.pl/pdf/phe-2012/phe-2012-1-021.pdf> (reference date 25.12.2018)
13. Zudina A.A. (2016) What lies behind the "average" self-evaluation? The analysis of the trajectories of the social well-being of the Russian in 2000 – 2014. -M.: Publishing house of the Higher School of Economics.

# INTERNET APPLICATION OPTIMIZATION WITH UPCOMING TECHNOLOGY

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## **ABSTRACT**

*This paper deals with the optimization of internet applications. It's aim is to familiarize the reader with current web technologies that are present in the world, what is in the background of any queries on the Internet, things which one application and Web server must make in order to display the desired and precisely how developers create and optimize those applications. This paper will show the upcoming technology and give a brief description of the benefits and opportunities that can be expected in the near future.*

**Keywords:** *http, http/2, spdy, tcp, udp, css, php, gnu, linux, nginx, optimization, application*

## **1. INTRODUCTION**

Computer science has far advanced, from the era when the first website was published in 1991. Computer power exponentially increased from the first computers that had a workstation of several kilobytes (KB), a processing power of several megahertz (MHz) to today's workstations / servers with a few TB workstations and dozens of CPUs. But even so much computing power is not enough to serve an increasing number of users, no matter how much they scalate computing power, vertically (stronger hardware), or horizontally (more servers), and have to resort to optimization methods. Optimization, in addition to resulting in higher performance, reduces hardware costs and allows the same result and work on smaller servers with the same number of users. Optimization is possible on multiple levels and in more ways. Whether it's optimization at the hardware or software level. This paper will describe the topic of communications protocol basics, web server architecture and internet application architecture, and web server and application optimization. The aim of this paper is to provide an overview of technologies that dramatically change the performance of network applications and work, and how these affect web application developers and their existing optimization methods.

## **2. METHODOLOGY AND PROBLEM ANALYSIS**

The purpose of this paper is to show the influence and purpose of software optimization. Optimization of the code is actually any method of change whose ultimate goal is to improve the code quality and efficiency of its execution on specific hardware and software libraries. The software can be optimized in several ways; It is smaller in size, consumes less computer resources, runs more and performs multiple computing operations at a certain time. The basic requirement for optimization is that the software behaves the same in terms of delivering the same results as before optimization, only in a shorter and better way. Optimization can work on multiple levels, high level and low level. High-level by modifiers in code or low level where the internal compiler otherwise converts the written code to the machine language. Non-optimized software can mean higher cost, customer dissatisfaction, unstable service, inability to upgrade and maintain, and a host of other things. By using the methodology of specialization, we come from a general concept to a newer, richer in content, more precise in the result and narrower in scope. This comes from broad concepts such as web server and web application optimization to specific language programming technologies and the core of operating systems like kernel and its optimization. Basics of HTTP - application communication protocol. HTTP (Hyper-Text Transfer Protocol) is an application protocol for communication over the Internet.

The current active version is HTTP / 1.1. HTTP defines how messages are formatted and broadcast (sent) between servers and clients. HTTP uses a model response response that works in principle that the client sends the request, the server (server) handles it and returns the response to the client. HTTP is a stateless protocol for its architecture - each request / command is processed regardless of the previous one, without any knowledge of it. The HTTP request is information in the form of text data sent by the user's Internet browser to the web server. In the current HTTP / 1.1 version, there are the following methods: GET, PUT, POST, DELETE, HEAD, OPTIONS, CONNECT, TRACE. While most commonly used are GET, PUT, POST, and DELETE

### **3. WEB SERVER ARHITECTURE**

GNU / Linux is an operating system: a series of programs that allow you to interact with your computer and launch other programs. GNU is actually an acronym for "GNU is not Unix!" And contains recursion in its name. The most important part of the operating system is the kernel. In the GNU / Linux system, Linux is a kernel component - the central part of the operating system that serves to communicate its hardware with the software. The Internet application is set to LEMP stack that represents a combination of 4 software. L - GNU / Linux, E - Nginx or engineX, M - MySQL, P - PHP. LEMP is a variant of the ubiquitous LAMP therefore used for the development and implementation of internet applications. Nginx or engineX is an open source software whose purpose is to serve Internet applications, it is the heart of the web server. Apart from the role of a web server alone, Nginx offers ops and proxy reversal options as one of the best known. Proxy is when a web server behaves as a special and dedicated computer / software system and acts as a mediator between devices at the end sites of the network. The advantage of a proxy server is that its memory can be used by all network users. That is, if an Internet application is accessed frequently, its content can be retrieved in proxy memory and available to all users / clients using that server. This part greatly accelerates the speed and performance of Internet applications for end users. Nginx was created from the need to serve more than 10,000 (ten thousand) 'concurrent connections / client connections to one web server. The problem known as the C10K problem is that web servers cannot serve so many customers at the same time without being left out of resources.

### **4. APPLICATION ARHITECTURE**

PHP programming language was developed in 1994 when Danish / Canadian developer Rasmus Lerdorf initially created a set of Perl scripts called "Personal Home Page Tools" to maintain its own internet application / web site. You copied those same scripts into CGI executables in C programming language and expanded them to work with web forms and communicate with databases. HTML is a computer language that allows you to create internet applications and pages. Hyper Text is actually a method of moving on the Internet - clicks in a special text called hyperlinks. It's called hyper, but it actually means it's not linear, so we can click on a link to go anywhere on the Internet - there's no specific order of things to do. Markup is what HTML tags work when the text inside them. HTML has also experienced several versions through its existence for years. The current version is HTML 5 that brings many improvements in terms of new functionality, better performance, and more quality code. HTML5 is not a unique entity. It contains many elements, including the fifth revision of HTML, CSS3, and many JavaScript APIs. Allows the use of a multimedia desktop experience on the Internet. CSS is a cascading stylus tag. It is the main tool for HTML code formatting on the Internet and design of internet applications. Cascading means that styles are applied as they are arranged and the last style at the same time has the greatest importance and will be displayed. CSS is continually evolving and is currently in version 3. CSS is usually a code stored in files with the .css extension.

## 5. WEB SERVER OPTIMIZATION

Most of the examples given are based on Debian flavored Linux distributions and these changes work within the `/etc/sysctl.conf` system file. One of the first settings that you should change is the built-in limit on the number of files that processes can use. Raising these limits is at the expense of getting a little more system memory. `fs.file-max = 100000`. For web servers that work with a large number of concurrent sessions, there are several TCP options that can be optimized. The limits for the maximum number of open connections are increased, the recycle time of the socket changes and the memory limit that the socket can use.

```
net.core.rmem_max = 16777216
net.core.wmem_max = 16777216
net.ipv4.ip_local_port_range = 1024 65535
net.ipv4.tcp_tw_recycle = 1
net.ipv4.tcp_tw_reuse = 1
```

Nginx was led by events in his design. This makes it easier for resources and is much more scalable. The Nginx process itself is in one thread, which is actually the smallest number of programmed instructions the process executes, but it can be divided into several auxiliary processes. Nginx processes / processes the requirements on the loop server and when the kernel sends the signal (event) that the data is ready to read from the socket. The settings that we will change are the number of processors / processes that will be generated from the main process and will process the requests. And their limit for the resources they can use. Nginx is very good for caching content while it is for the purpose of a proxy server.

```
worker_processes <NUM_CPU_CORES>; worker_rlimit_nofile <GB_RAM * 10000>;
events {
worker_connections <GB_RAM * 1024>;
multi_accept on;
use epoll;
}

proxy_buffering off;
proxy_buffer_size 128k;
proxy_buffers 100 128k;
```

## 6. APPLICATION OPTIMIZATION

It is recommended to use native or built-in PHP functions rather than self-written because they are internally optimized by declarations in the C programming language. Single quotes should be used instead of "double" if we do not use variables in the string. Because the parser checks within the double quotation marks the existence of the variable and adds it to the execution time of the script. The use of comparators by type "===" is more strict and faster than classical comparison with operator "==". Eliminate redundant loops and call functions within other functions. Using cache and memory (software like Memcached) reduces the number of unnecessary connections to the database and reduces the load on the server. It is recommended to close unnecessary connections to the scripts and database once they are no longer needed. Also deleting unnecessary variables in scripts after they're done with using reduces the need for memory resources. Native JavaScript code is compiled into the machine code by most scripting systems which provides very high performance. But interaction with host objects (Internet browsers) outside the native environment raises unpredictable and noticeable failures in performance, especially when dealing with DOM objects.

The solution is to use CSS instead of JavaScript for animations on DOM, clear HTML from overclaims, and select the right selectors to access objects. The most critical places in the code are just the iterations, that is the loops that repeat the unedogled. Iterations should be minimized and reduced call functions if they have them within these iterations. Internet browser and its own event / signal executives are an excellent tool for improving performance and user experience and reducing call depth on the stack (less recursive functions and functions that call other functions on several levels). It should be controlled to call events over user actions to reduce unnecessary calls in the code. Enable "Strict DTD" (Document Type Declaration) that HTML version validates the version of the standard used because Internet browsers can misread the version and unnecessarily slow parsing. Remove unnecessary whites that make it smaller and easier to load, remove unnecessary tags, and cut meta tags as much as possible. Reduce the number of tables and make sure all the tags are properly closed. Compression of images and videos to drastically reduce their size. Reducing their resolution and optimizing them in other formats. Images and videos meta data can also be extracted that are part of that same content. Some of the things that can be done are grouping CSS selectors, allowing web browsers to better parse and apply styles to HTML. Grouping multiple .css files into one to reduce the number of HTTP requests on the web server. There should be unnecessary comments and empty space / whitewash. Today's popular practice is the so-called minimization of code that is used by various services.

## 7. UPCOMING TECHNOLOGIES

SPDY ("SpeeDY" or "Fast") has already been suspended a project originally launched in Google, part of the "Let's make the web faster" initiative. This is an experimental protocol on the application layer for uploading content over the Internet. It is specially designed to reduce latency and speed up downloading of internet applications. SPDY is not a separate protocol but is upgrading to an existing HTTP protocol, using its capabilities with additional modifications Basic Opportunities SPDY Protocol:

- simultaneous multiplexed server-client requests can retrieve packets in an unlimited number of concurrent requests over one TCP connection
- prioritizing requirements - the web server prioritizes requirements that the client would not wait too long for a more important request than
- compressing HTTP requests - each application is compressed to save network traffic and the time it takes to transfer data

Advanced SPDY protocols:

- a web server request - a web server can, by special request send packages to a client and before requesting them to greatly increase the Internet application speed experience
- Hints from the Web Server - The web server hints the client through a special header that there are newer resources the client should have. At slower connections this reduces the time it takes for the client to discover that there is new content

Average duration in milliseconds (ms)			Acceleration
RTT u ms	HTTP	SPDY basic (TCP)	
20	1240	1087	12.34%
40	1571	1279	18.59%
60	1909	1526	20.06%
120	2927	2240	23.47%
200	4498	3293	26.79%

Table 1: Process optimization, average duration in milliseconds



The HTTP / 2 protocol is in the process of being created and it is precisely the SPDY stone founder that initiated this process. The goals are the same, utilizing TCP completely and reducing its shortage in favor of higher performance and speed of Internet application loading. It works in principle as SPDY; is used to establish a TCP connection that sends multiple requests to the server with maximum compatibility with the older version - HTTP / 1.x (1.0 and 1.1) protocols. HTTP / 2 reduces the number of packets needed for network packets - RTT and completely avoids the main line-lock dilemma by multiplexing and swiping unwanted requests.

## 8. PROJECT RESULTS AND CONCLUSION

Optimization methods were developed at the architecture and application level. Optimization should be done according to the needs of the application that is used and it is essential to work best practices from the very beginning of the project and at all stages of development. The same optimization is not possible in the absence, but it can be used to get up to 20% performance and 30% less cost. Regardless of the technique we choose, there is a rule that every code optimization attempt should follow: we always have to make optimization in a way that does not change the meaning of the code. The benefits of code optimization are growing in line with the growth of our project, and even small startup projects can become a long time, acquiring solid code-optimizing skills almost always has measurable positive results. Optimizing time, knowledge and other resources is not always possible, but it should be persistent because there is a lot of benefits from greater traffic to greater customer satisfaction. Also, the project is easier to maintain, debug, refactorize, new plugins are easier to integrate and have a lower technical burden for a smaller amount of work needed for any software work. We always need to always consider optimizing the program code using specialized tools and compilers (compilers) wherever possible but to do so with great care and be prepared for the probability of unexpected tricks from translators from time to time.

### LITERATURE:

1. Nicholas C. Zakas; High Performance JavaScript: Build Faster Web Application Interfaces, O'Reilly Media., 1076. str; 2011.; ISBN: 978-0596802790
2. Tweaked; Optimizing servers - Tuning the GNU/Linux Kernel, <https://tweaked.io/guide/kernel/> , 22.4.2017.
3. Tweaked; Optimizing servers - nginx speedup and optimization guide, <https://tweaked.io/guide/nginx/> , 22.4.2017.
4. Russell Chad, Stephens Jon; Beginning MySQL Database Design and Optimization; Apress; 2004.; ISBN: 978-1590593325
5. Padilla Armando, Hawkins DUPTim; Pro PHP Application Performance; Apress; 2011; ISBN 978-1-4302-2899-8.
6. Phillip G. Ezolt; Optimizing Linux Performance: A Hands-On Guide to Linux Performance Tools", 1st Edition; 2005.; ISBN-13: 978-0131486829;
7. M. Fowler, K. Beck, W. Opdyke; Refactoring: Improving the Design of Existing Code", 1st Edition; 2014.; ISBN-13: 978-020148567
8. "High Performance Web Sites: Essential Knowledge for Front-End Engineers", Steve Souders (2007.)
9. Šimec Alen, Tkalčec Siniša; Postgis kao suvremeni informacijski ekosustav; Polytechnic & Design; Vol. 2, No. 1, 2014.; ISSN 1849 – 1995
10. Šimec Alen, Davor Lozić; Extending PHP with modules; Polytechnic & Design; Vol. 3, No. 1, 2015.; ISSN: 1849 – 1995
11. Patrick Killelea; Web Performance Tuning 2nd Edition, O'Reilly; 2002.; ISBN: 978-0596001728

12. Eric A. Meyer; Cascading Style Sheets: The Definitive Guide, 2nd Edition, O'Reilly; 2000.; ISBN-13: 978-2952143417
13. Pagač Alen; Šimec Alen; Tepeš Golubić Lidija; Primjena Drupal CMS-a u izgradnji web sustava; Polytechnic & Design; Vol. 5, No. 2, 2017.; ISSN: 1849 – 1995

# CHANGING FACE OF THE EURO AREA MACROECONOMIC IMBALANCES

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## **ABSTRACT**

*Macroeconomic imbalances constitute one of the most important threats to the cohesion of the monetary union. From the beginning, external and internal imbalances pose a serious challenge for the euro area. The aim of the article is to examine the current state of imbalances with the use of the composite indicator of macroeconomic stability. The calculated composite indicators of macroeconomic stability allow to formulate the following interpretations regarding changes and the current level of macroeconomic imbalances in the euro area. 1. The pressure from macroeconomic imbalances in the euro area is currently the lowest in the whole period for which data is available - but only slightly smaller than in the period preceding the crisis, and the scale of differences between countries has not changed. 2. Since the year 2012, many flow variables have improved, while at the same time stock variables have stabilized at low level (or even worsening). 3. Significant reduction of imbalances occurred in the case of variables, which in the majority of interpretations were directly blamed for exacerbation of crisis events after 2007: current account balance, unit labor costs or credit/GDP growth. At the same time, imbalances in net international investment position and public debt have increased significantly.*

**Keywords:** *euro, macroeconomic stability, EMU, macroeconomic imbalance procedure*

## **1. INTRODUCTION**

Macroeconomic imbalances constitute one of the most important threats to the cohesion of the currency union. As of the beginning, the internal and external imbalances constituted a serious challenge to the euro area. Numerous measures, including the introduction of the Macroeconomic Imbalance Procedure (MIP) were aimed at restricting them. Therefore, a question arises as to what extent the risk related to macroeconomic imbalances has been successfully limited in the euro area. The aim of the article is to study the current state of imbalances with the use of the composite indicator describing the level of imbalances in an aggregated manner. The main benefit of this method consists in the possibility of studying aggregated, general tendencies which might not be visible with a large number of variables, even for an experienced researcher. However, using the composite indicator also entails numerous problems both, methodological and interpretative, connected with the aggregation of non-uniform features. The obvious and often discussed issues include a selection of the aggregation method, variables and weights. In the end, it always has to be of an expert character and result from a good knowledge of the nature of a studied phenomenon (OECD, 2008). A separate issue constitutes the fact that aggregated variables usually concern various layers of a theoretical understanding and/or a description of the given phenomenon. This is the case while forming the composite indicator describing macroeconomic imbalances, but also in the case of the majority of other similar indicators (such as e.g. European innovation scoreboard Summary Innovation Index, Composite Index of Leading Indicators etc.). While balancing the method's weaknesses (whereas, it would be naïve to believe that similar problems do not concern as commonly used measures as the GDP or HDI) and benefits, it can be stated that using the composite indicator is legitimate, whereas the study should be limited solely thereto and related to the detailed analysis of particular variables. The article has the following structure. The first part comprises a short description of the character of macroeconomic imbalances.

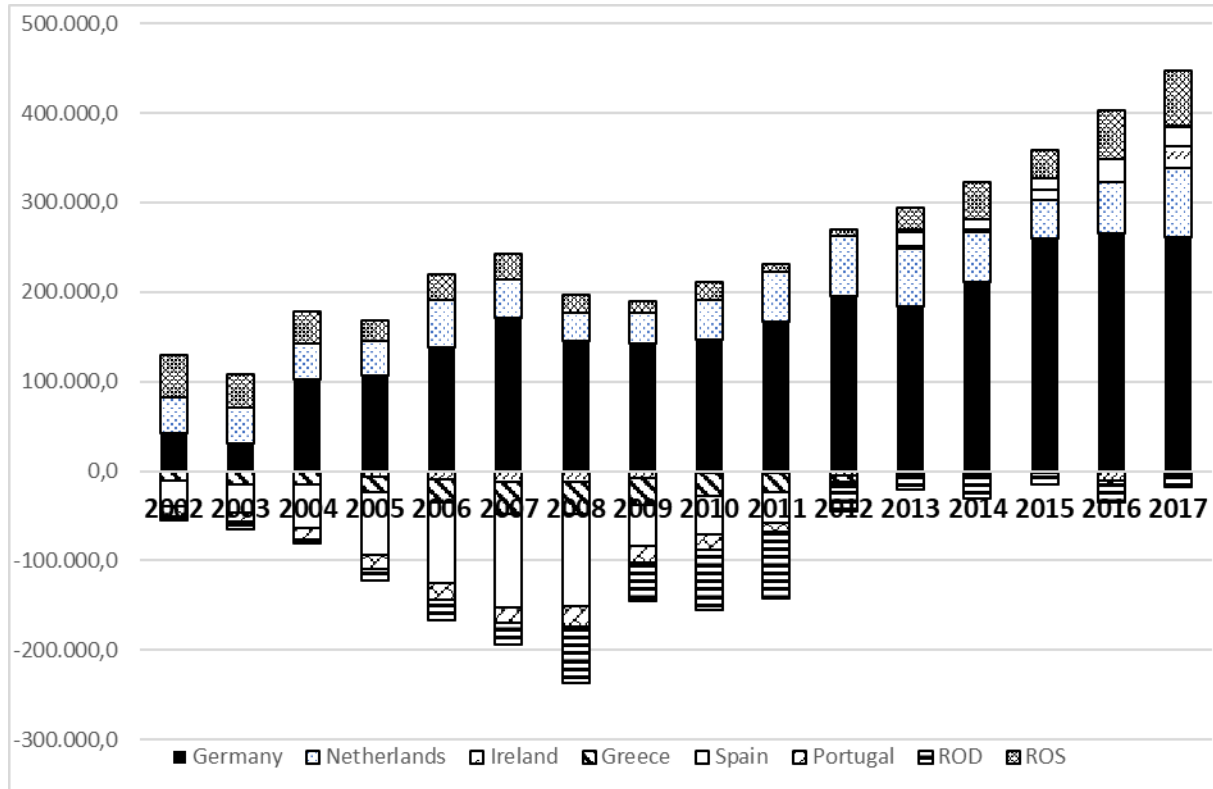
Then, the principles of calculating the composite indicator have been presented. The third part review an up-to-date status of imbalances with an indication of the change in their character.

## 2. MACROECONOMIC IMBALANCES

The character and scope of macroeconomic imbalances in the euro area and their impact on the crisis phenomena continue to constitute the subject of numerous discussions (Baldwin & Giavazzi, 2015; De Grauwe, 2016; Ederer & Reschenhofer, 2018; Febrero, Uxó, & Bermejo, 2018; Pietrucha, 2014; Pietrucha, Czech-Rogosz, & Tusińska, 2013; Unger, 2017). However, it is possible to present the basic stylized facts and basic interpretations with regard to which there is a relative agreement. Since the mid-90s macroeconomic imbalances covered, in particular, balance of payments' current account imbalance, credit boom (a large increase in the credit/GDP ratio) and public finances imbalance. A group of deficit countries was emerged (in 2006 especially: Greece, Spain, Portugal), characterised with deepening deficit in the current account, growing private and/or public debt, worsening international competitiveness (an increase in unit labour costs, real exchange rate appreciation). On the other hand, (few) countries with a surplus (especially Germany, Austria, Netherlands, Finland) were characterised with a lack of credit boom, stable public debt, growing surpluses in current account and stable or improving international competitiveness. Deficits in current account of deficit countries were closed with surpluses in financial account resulting from the inflow of capital related to refinancing of the private and/or public debt in international markets including, in particular, in surplus countries of the euro area. The imbalances were growing until 2008. Figure 1 presents cumulated data of the current account balance for surplus and deficit countries. Deepening imbalances caused that especially deficit countries became sensitive to the shock of the global financial crisis and the consequent sudden stop of the capital inflow. Furthermore, imbalances constitute a source of doom loop - relations of the imbalance in the banking sector with the imbalance in the public finances sector, i.e. a threat to the stability of the banking sector forced public support therefor, which affected the public finances balance, whereas, the worsening condition of public finances reinforced the imbalance in the banking sector with regard to the losses of banks holding public bonds. The doom loop paralysed the euro area especially around the year 2012. Then, economic management of the EU, which provided neither management mechanisms, nor monitoring of imbalances, did not cope with such a strong asymmetric reaction of particular countries of the euro area. In consequence, the crisis continued to spread and several mechanisms reinforcing the initial negative external impulse occurred.

*Figure following on the next page*

Figure 1: Balance of payments' current account imbalances (Eurostat, 2018)



*Balance of payments' current account balance in million EUR*

*ROD – rest of deficit countries*

*ROS – rest of surplus countries*

### 3. MACROECONOMIC IMBALANCES INDICATOR

A simple synthetic measure of macroeconomic imbalances was constructed. One of the key and at the same time causing the most issues of the stages of developing a synthetic measure is a selection of variables to study (OECD, 2008). It is inevitably always more or less arbitrary and of an expert character. The starting point for the indicator constructed for the purposes of this study was the scoreboard used by the European Commission in order to provide a level of macroeconomic imbalances within the Macroeconomic Imbalance Procedure (MIP). The MIP was a response to the shortages in the system of monitoring economic imbalances, which aggravated the course of the 2007+ crisis in the euro area. Macroeconomic imbalances are monitored as a part of the EU's annual cycle of economic monitoring and guidance starting from the year 2011. Within the scoreboard in its original form<sup>1</sup> especially the group of 11 headline indicators is observed, characterising internal and external macroeconomic imbalances: 3-year backward moving average of the current account balance as percent of GDP (CA), net international investment position as percent of GDP (NIIP), 5-year percentage change of export market shares (ES), 3-year percentage change in nominal unit labour cost (ULC), 3-year percentage change of the real effective exchange rates based on HICP/CPI deflators relative to 41 other industrial countries (REER), private sector debt in % of GDP (FD), private sector credit flow in % of GDP (CF); year-on-year changes in house prices relative to a Eurostat consumption deflator (HP); general government sector debt in % of GDP (PD), 3-year backward moving average of unemployment rate (U), year-on-year changes in total financial

<sup>1</sup> I.e. headline indicators added in 2015 (concerning the labour market) and auxiliary indicators were omitted. The latter, in fact, double the sources of imbalances included in the headline indicators. In the first case, the reason constituted the need of focusing on imbalances, which contributed to aggravating the 2007+ crisis in the euro area.

sector liabilities (FL). Of course, this is only one of potential sets of variables that can be used to assess the scale of the macroeconomic imbalance. Its advantage is that it has been used for almost a decade by the EU institutions and for that reason alone, it can constitute a useful point of reference. Therefore, in order to form the composite indicator a set of data compliant with the Macroeconomic Imbalance Procedure was used (Eurostat, 2018), as well as in the scope of definitions and initial transformations of particular partial variables (European Commission & Directorate-General for Economic and Financial Affairs, 2016). Some of the used variables required further transformation. In general, it was assumed that the deviances from the balance both, in minus and in plus are equally dangerous to the cohesion of the currency union. For example, the imbalance status is equally presented by a rapid increase in the private sector credit flow (e.g. credit/GDP ratio) or the house price index, as well as a decrease of these indicators. Thus, in the case of variable parts (for example: private sector credit flow, real effective exchange rate, private sector debt, house price index) value modules were used. Such transformation was not necessary for variable parts such as public debt or unemployment (they do not show negative values). The issue in the case of some variables is the fact that it is difficult to explicitly determine, if the variable is a booster or an inhibitor of the macroeconomic stability. For example the available literature indicated that the dependence between the level of financial depth (e.g. credit/GDP) ratio and the growth and volatility of the GDP is non-linear, i.e. to some extent the financial depth supports the GDP growth and decreases the amplitude of volatility thereof, however, upon exceeding the critical value it limits the growth and increases the scope of the volatility (Arcand, Berkes, & Panizza, 2015; Acedański & Pietrucha, 2019). The threshold is usually estimated at approx. 100-150% of the GDP (depending on the adopted measure). For the private sector debt (e.g. credit/GDP ratio) the European Commission proposes the threshold at a level of 133% of the GDP. Therefore, data regarding the private sector debt were converted in a manner that the absolute value of deviations from 133% was calculated. At another stage, all variables were subject to unitarization. The adopted manner of unitarization allowed converting all variables in macroeconomic stability boosters (i.e. values from the range of  $\langle 0,1 \rangle$ , whereas, 0 means the highest stated deviation from macroeconomic stability and 1 – value being the closest to the macroeconomic stability). Then, the synthetic indicator was calculated with the use of the formula:

$$W_i = \frac{100}{m} \sum_{j=1}^m \alpha_j x_{ij}$$

where  $m$  is a number of features,  $\alpha$  is a weight of  $i$  variable (equal weights were adopted),  $x$  is value of a variable.

Thus calculated indicator has the following features: adopts values within the range of  $\langle 0,100 \rangle$ , where 0 means the highest macroeconomic imbalance in the studied period and group of countries, and 100 means the highest macroeconomic stability in the studied period and group of countries. Apart from the indicators for particular European Union member states, indicators for the European Union covering member states according to the status at the end of 2018 (EU2018), the euro area covering initial 12 states (euro12) and the euro area as at the end of 2018 (euro2018) were calculated. Those indicators were calculated as arithmetic average and in the second version – as weighted average (GDP is chosen as a weight). Due to the availability of data, it was possible to calculate indicators since 2005 for the euro12, and since 2006 for the euro area as in 2018 (euro2018) and since 2007 for European Union as in 2018.

#### 4. MACROECONOMIC IMBALANCES IN THE EURO AREA

The values of the composite indicator of the macroeconomic balance for the European Union states have been presented in table 1. Table 2 includes values of the indicator aggregated for the whole European Union and for the euro area both, in non-weighted version and weighted version. Indicators' values are higher in the second case. It results from the fact that large countries were to a relatively lower extent affected with imbalances, whereas, significant imbalances mainly concerned smaller countries (Greece, Portugal, Cyprus etc.).

*Table 1: Macroeconomic stability indicators for the EU states*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	64	69	70	69	66	72	64	62	67	67	63	64	72
Bulgaria			30	25	25	46	62	60	67	64	66	64	75
Czechia			58	56	61	60	69	63	62	60	64	66	64
Denmark			73	66	59	74	72	67	76	79	81	86	89
Germany	78	81	80	83	81	77	75	72	83	84	86	88	92
Estonia		31	53	42	27	69	82	70	69	66	71	75	79
Ireland	48	49	55	28	26	23	3	0	19	4	27	42	58
Greece	23	29	34	38	24	20	19	8	8	8	4	15	18
Spain	38	35	38	37	33	37	28	14	27	31	34	38	46
France	54	60	63	66	64	63	59	57	62	60	63	62	62
Croatia			44	51	45	47	50	42	43	50	54	61	66
Italy	49	55	60	60	56	55	54	46	50	52	52	57	57
Cyprus		33	27	2	20	18	20	7	12	5	1	8	17
Latvia		18	26	25	20	58	72	54	52	53	58	56	62
Lithuania		40	39	56	30	52	64	58	63	61	57	52	58
Luxembourg	85	86	42	80	62	61	72	66	67	65	57	68	73
Hungary			46	42	42	51	47	46	49	48	49	50	73
Malta		56	54	62	71	76	64	72	79	84	89	91	100
Netherlands	69	74	71	75	65	69	68	63	68	72	73	73	78
Austria	75	78	79	80	78	76	75	70	76	75	75	75	80
Poland			15	50	56	55	48	49	50	61	65	63	71
Portugal	45	45	41	37	33	29	28	19	32	32	37	41	46
Romania			13	46	48	49	63	58	70	69	71	66	66
Slovenia		65	60	75	63	73	73	60	64	61	68	68	70
Slovakia		35	27	29	27	42	47	46	54	57	54	55	56
Finland	71	70	72	79	74	67	66	64	70	63	67	73	76
Sweden			72	73	65	70	73	64	63	64	61	63	68
UK			59	39	41	38	47	53	60	48	56	61	57

*Source: own calculations.*

*Note: The indicator adopts values within the range of <0,100>, where 0 means the highest macroeconomic imbalance in the studied period and group of countries, and 100 means the highest macroeconomic stability in the studied period and group of countries. The values have been rounded.*

The calculated indicators explicitly indicate the fact that the deepest breakdown in the macroeconomic balance in euro area countries occurred in the year 2012 and, what is more, it was definitely stronger than in the direct consequence of the 2007+ crisis. It is worth mentioning that the studies regarding the real sector also indicate the fact that the breakdown around the years 2012-13 was more severe in the euro area than in other developed economies. While analysing the current situation it is worth starting with the fact that imbalances, which constituted one of the hottest points of discussion - the current account balance - is greatly restricted. Currently, in literal sense, division into surplus and deficit countries can no longer be discussed. The question is, obviously, to what extent this situation is permanent i.e., e.g. to what extent the significant improvement of the balance in Greece reflects the structural change and to what extent current account reversal during recession or the short-term effect of the internal devaluation.

In the next part of the article, the division into surplus and deficit countries shall be used with a reservation that it rather refers to the historic situation around the year 2008, however, with explicit long-term consequences. General conclusions based on a composite indicator are similar. Until 2017 the level of imbalances significantly decreased in comparison to the worst level of 2012. It applies to both, data for particular countries and aggregated data at the level of the EU or the euro area. It is also lower than in the period directly preceding the 2007+ crisis, whereas, the difference amounts to only 2-5 percentage points. It is also worth mentioning that despite the average level of imbalances for the whole euro area as well as the EU (both, weighted and non-weighted) decreased, the distinction between the countries remained more or less at the same level (which is indicated by the calculated volatility indicators). Therefore, the pressure from macroeconomic imbalances in the euro area is currently the smallest in the whole period for which there is available data - but only a little smaller than in the period preceding the crisis and the difference between countries has not changed.

*Table 2: Macroeconomic stability indicators for the euro area and the EU*

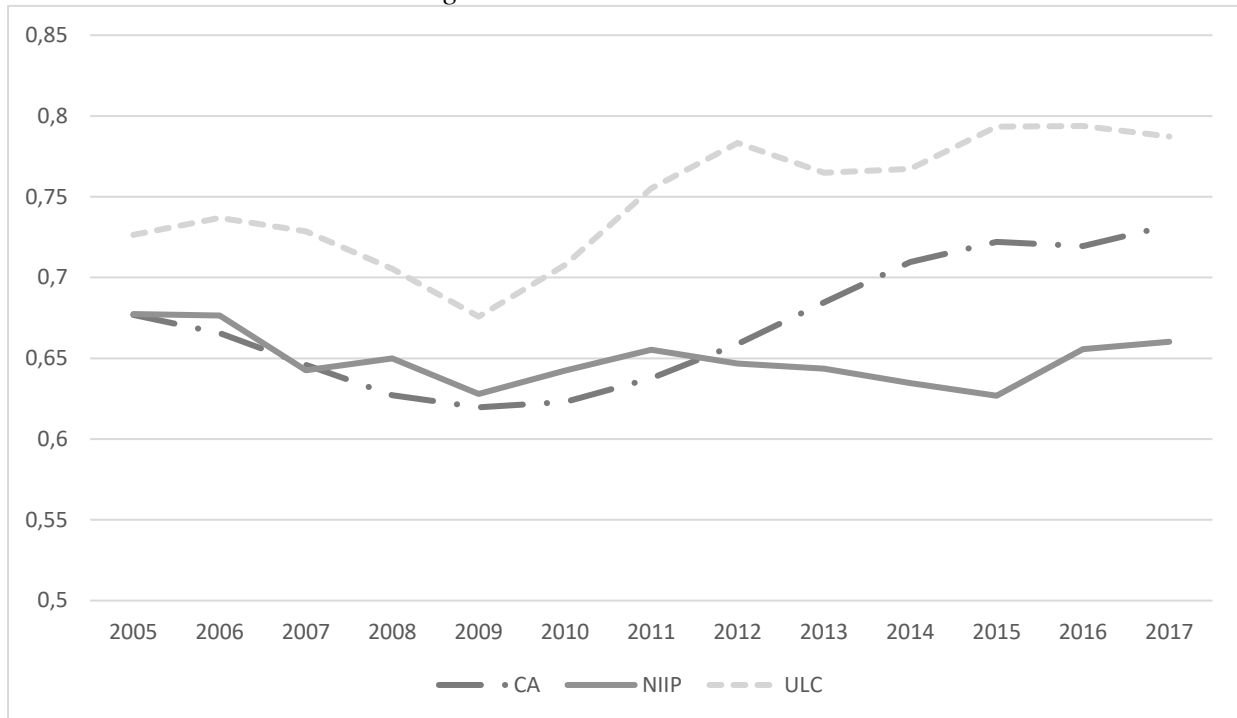
MII	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
euro12	58	61	59	61	55	54	51	45	52	51	53	58	63
euro2018		53	52	54	48	55	54	48	54	53	54	58	63
EU2018			50	53	49	54	56	50	56	55	57	60	65
euro12w	59	63	64	66	62	61	58	53	61	62	64	66	70
EU2018w			61	60	58	58	57	54	61	60	62	65	68

*Note: The indicator adopts values within the range of <0,100>, where 0 means the highest macroeconomic imbalance in the studied period and group of countries, and 100 means the highest macroeconomic stability in the studied period and group of countries. The values have been rounded.*

It is also worth analysing partial data from this point of view. In the case of external imbalances (figure 2) there was a relative improvement in the current account (gradual restriction of imbalances since 2012, the indicator value for the euro area was better than in 2005) and unit labour costs (a significant improvement since 2009, the value of the indicator in 2017 was much better than in 2005). The level of imbalances was not reduced in the case of the net international investment position. Throughout the whole period covered with the study the external debt was growing and only as of 2015 a slight improvement has been visible, however, the indicator remains at a much lower value than the initial one. Also in the case of the internal balance (figure 3) certain differences between particular variables are visible. In the case of the public debt and unemployment the level of imbalances is much higher than before the 2007+ crisis. The public debt had been growing in the euro area since 2007 and the imbalances growth was only stopped in 2013. Similarly in the case of the unemployment – it had been growing since 2008 and the negative trend slowed down in 2014. In both cases, since those values strongly depend on the economic situation, slowing down of the imbalances can rather result from the economic recovery than the long-term trend change. The level of the imbalance has not been reduced in the case of the private debt either.

*Figure following on the next page*



*Figure 2: External imbalances*

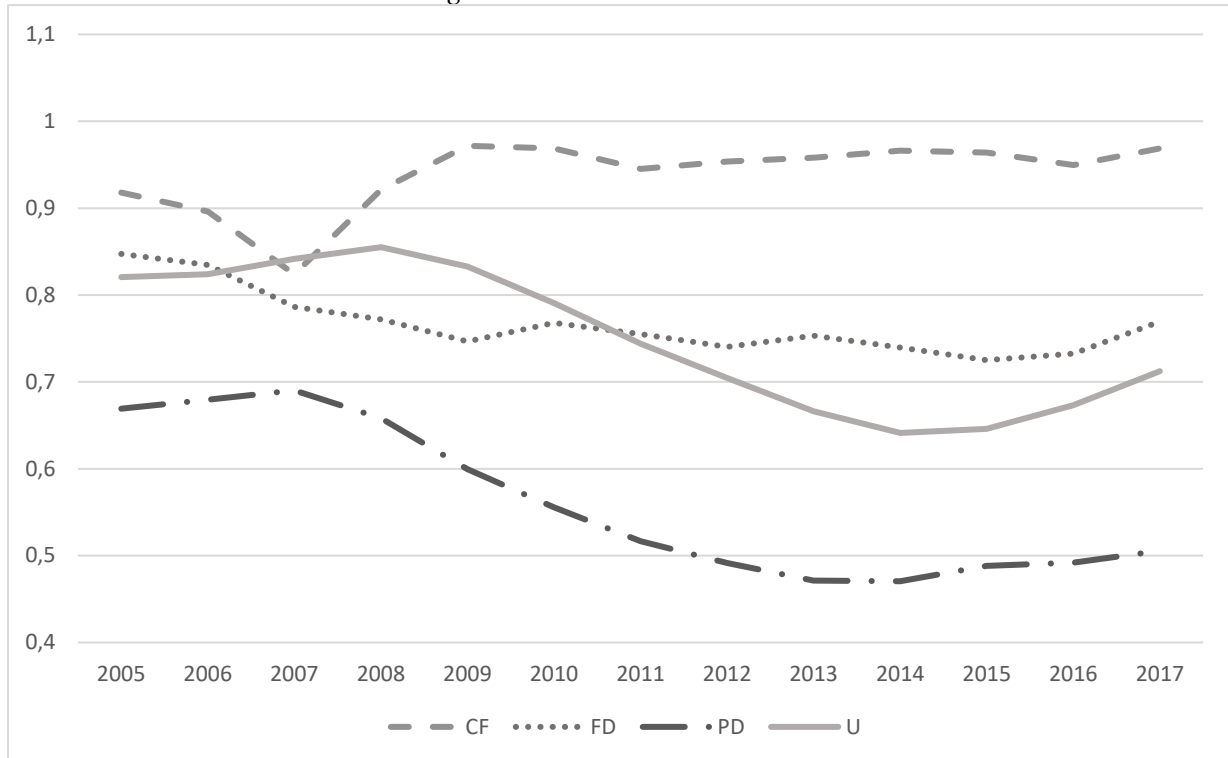
*Note: The indicator adopts values within the range of  $<0,1>$ , where 0 means the highest aberration of the macroeconomic imbalance in the case of a given variable, and 1 means the lowest stated level of imbalance in the case of a given variable. The values have been rounded.*

*CA - current account balance, NIIP - net international investment position, CF - private sector credit flow, ULC – unit labor cost*

It is worth underlining the change of the public debt's role in macroeconomic imbalances in the euro area. Admittedly, in the period preceding the crisis, it contributed to the total imbalance, however, it did not constitute a key phenomenon for the interpretation of then processes. In fact, the public debt growth was a part of increasing until 2007 macroeconomic imbalances only in Greece and Portugal. In Ireland and Spain the level of the public debt in this period of time significantly dropped (by several dozen percent points and in the year 2007 the public debt reached very low levels: 25% of GDP in Ireland and 36% GDP in Spain). Even in Greece the public debt was relatively stable (yet, high – approx. 100% GDP) until 2008. The role of public finances in the genesis of the crisis in the euro area is often excessively exposed. A significant worsening of the state of public finances in some countries in the euro area was rather a result of the first stage of the crisis than a reason therefor. Nevertheless, currently the public debt constitutes one of the key components of macroeconomic imbalances in the euro area. The value of the imbalance indicator for this variable not only has not improved in comparison with the period preceding the 2007+ crisis, but has definitely decreased despite several years of relative economic recovery.

*Figure following on the next page*

Figure 3: Internal imbalances



Note: The indicator adopts values within the range of  $<0,1>$ , where 0 means the highest aberration of the macroeconomic imbalance in the case of a given variable, and 1 means the lowest stated level of imbalance in the case of a given variable. The values have been rounded.

CF - private sector credit flow, FD - private sector debt, PD - general government sector debt, U – unemployment.

While interpreting the current macroeconomic imbalances in the euro area it is worth noticing one more issue. While using the division of flow variables and stock variables applied by the European Commission, it can be stated that more or less as of 2012 many flow variables have improved, especially those that constituted key challenges to the stability in the period preceding the crisis in 2007 (i.e. current account balance, unit labour costs, credit increase for the private sector). Especially strong adjustment occurred in deficit countries, which experienced the crisis. Simultaneously, stock variables stabilised at a low level (or even worsened). For example, imbalances in current account were restricted, which did not, however, translate into the improvement of the net international investment position. The public finances deficits were reduced and not the level of the public debt. Credit booms were inhibited, yet, a significant improvement of the private debt level has not observed. It partially results from the fact that in the case of some countries and variable parts the imbalances have indeed been decreased, yet, not eliminated. It can partially also result from the fact that positive trends in the scope of streams can affect stock variables later (which can be proved with a slight improvement in 2017).

## 5. CONCLUSION

The calculated synthetic indicators of the macroeconomic balance allow formulating the following interpretations concerning changes and current level of macroeconomic imbalances in the euro area. First of all, the level of imbalances is currently the lowest in the whole period for which the data is available. The differentiation between hitherto surplus countries and deficit countries has vanished to a large extent, however, the scale of differences between all countries

has not changed significantly. Second of all, there are significant differences between particular components of the macroeconomic balance indicator. A significant reduction of imbalances occurred in the case of variables, which in the majority of interpretations were directly blamed for aggravating crisis phenomena after the year 2007: current account balances, unit labour costs or the credit/GDP ratio increase. Simultaneously, imbalances in the scope of the net international investment position, public debt and unemployment increased significantly.

#### LITERATURE:

1. Acedański, J., & Pietrucha, J. (2019). Level and dynamics of financial depth: consequences for volatility of GDP. *Applied Economics*, 51(31), 3389–3400. <https://doi.org/10.1080/00036846.2019.1578857>
2. Arcand, J. L., Berkes, E., & Panizza, U. (2015). Too much finance? *Journal of Economic Growth*, 20(2), 105–148. <https://doi.org/10.1007/s10887-015-9115-2>
3. Baldwin, R., & Giavazzi, F. (Eds.). (2015). *The eurozone crisis a consensus view of the causes and a few possible remedies*. Retrieved from <http://www.voxeu.org/content/eurozone-crisis-consensus-view-causes-and-few-possible-solutions>
4. De Grauwe, P. (2016). The legacy of the Eurozone crisis and how to overcome it. *Journal of Empirical Finance*, 39, 147–155. <https://doi.org/10.1016/j.jempfin.2016.01.015>
5. Ederer, S., & Reschenhofer, P. (2018). Macroeconomic imbalances and structural change in the EMU. *Structural Change and Economic Dynamics*, 46, 59–69. <https://doi.org/10.1016/j.strueco.2018.04.002>
6. European Commission, & Directorate-General for Economic and Financial Affairs. (2016). *The Macroeconomic Imbalance Procedure: rationale, process, application: a compendium*. Retrieved from [http://ec.europa.eu/economy\\_finance/publications/eeip/pdf/ip039\\_en.pdf](http://ec.europa.eu/economy_finance/publications/eeip/pdf/ip039_en.pdf)
7. Eurostat. (2018). Retrieved from <https://ec.europa.eu/eurostat/web/macroeconomic-imbalance-procedure/indicators>, 15.12.2018
8. Febrero, E., Uxó, J., & Bermejo, F. (2018). The financial crisis in the eurozone: a balance-of-payments crisis with a single currency? *Review of Keynesian Economics*, 6(2), 221–239. <https://doi.org/10.4337/roke.2018.02.04>
9. OECD. (2008). *Handbook on Constructing Composite Indicators: Methodology and User Guide*. <https://doi.org/10.1787/9789264043466-en>
10. Pietrucha, J. (2014). Kryzys w strefie euro jako tło zmian w zarządzaniu gospodarczym. In J. Pietrucha & J. Żabińska (Eds.), *Zarządzanie gospodarcze w strefie euro*. Warszawa: Diffin.
11. Pietrucha, J., Czech-Rogosz, J., & Tusińska, M. (2013). *Nierównowaga zewnętrzna krajów strefy euro*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.
12. Unger, R. (2017). Asymmetric credit growth and current account imbalances in the euro area. *Journal of International Money and Finance*, 73, 435–451. <https://doi.org/10.1016/j.jimonfin.2017.02.017>

# THE IMPACT OF PRICE ON PURCHASING DECISIONS OF YOUNG BUYERS IN RAIL TRANSPORT

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## ABSTRACT

*The article will discuss issues related to the significance of the price in making purchasing decisions of railway transport customers. The price of railway tickets and the promotions affecting it is an important marketing instrument for rail transport, while being often a priority for their buyers. Due to the above, research was conducted, the subject of which was to determine the significance of price and price promotions in making purchasing decisions of buyers in this area. In the scientific study, it was verified whether the significance of the price of travel and price promotions correlate sociodemographic variables such as gender, education, household size, income, professional status and place of residence. The article presents the results of acquired correlations, at the same time identifying an interesting research problem indicating a significant relationship between the gender of respondents and the assessment of the importance of the price of travel in rail transport.*

**Keywords:** *price, price promotion, purchasing decisions, railway transport*

## 1. INTRODUCTION

Marketing activity throughout its history was shaped by the concept of precise reaching the customer. This process requires continuous adjustment of production and service offerings to the changing market realities and customer requirements as well as analyzing competitors' activities. Price as the marketing instrument will be an important aspect in the process of establishing and maintaining relations with clients, also in the railway transport analyzed in the article. In an attempt to compare the situation on railways in individual countries, the "utilization rate" was introduced. It is determined as the quotient of the number of passenger train journeys (given in the statistics as the number of passengers) and the number of inhabitants of a given area. The utilization rate is equal to the ratio of the number of passengers to the number of inhabitants of the country (Urząd Transportu Kolejowego 2017, p. 2). Using this method of calculation, it can be seen that the average European citizen travels by train 19 times a year, the Pole only 8. It can be seen that the use of railways is growing in Western Europe and is decreasing in Central and Eastern Europe. This article focuses on the segment of young people in literature included in the group of young adults (18-29 years old) who, because of continuing education outside their place of residence, taking up a job or for sightseeing reasons, often travel and are considered to be an important target group for railway carriers.

At the same time, these are people dependent on their parents or having low income from work (starting employees), which is why economic reasons are important to them. The purpose of the article is to determine to what extent price formation has an impact on the choice of rail transport through the segment of young adults. The issue of passenger transport, including rail transport, is analyzed in the literature by a relatively small number of authors (Wyszomirski 1994 (ed.); 1998; Paprocki 1996; Bąkowski, Szewczuk (ed.) 2000; Tomanek 2002; Taylor 2007; Engelhardt 2007; Długosz 2009, Buehler R., Pucher J. 2012; Rosa 2013, 2018; Fröidh, Byström, 2013; White 2016; Marinov 2018). The rail passenger transport market is undergoing transformations, mainly caused by changes occurring in the transport environment. Important reasons include the increasing phenomenon of congestion on roads, constantly increasing traffic and the resulting increase in travel time in the case of individual transport, but also mass road transport (buses). At the same time, there is a significant improvement in railway infrastructure, the emergence of modern rolling stock, equipped with solutions that enable travelers to use time productively during travel, but also provide great comfort and convenience. On the basis of the known literature, the following classification of factors shaping the demand structure in relation to the railway can be made (Gorlewski 2010, p. 15):

- socio-economic factors (price parameters, price of substitute services, income, seasonal factors, communication behaviors, other socio-economic factors); ,,
- qualitative factors (frequency of connections in a given relationship, travel time, availability of services, scope of additional services, level of service).

The activities of carriers such as: introduction of a train ticket common to various railway undertakings, the possibility of purchasing and presenting a ticket in electronic form, competitive prices and attractive price promotions that affect the competitiveness of railway carriers against road transport, especially the individual ones, are of great importance for the popularization of rail travels. Travelers considering the choice of means of transport take into account their own comfort, safety, cost and time of travel, which means that road transport is perceived as less attractive compared to other forms of transport - especially air transport for distant destinations, but also railways (especially when traveling for medium length distances)

## **2. PRICE FORMATION IN RAIL PASSENGER TRANSPORT**

The development of marketing of transport services was closely related to socio-economic changes in the world, which had a significant impact on the functioning of the transport services market and entities operating on it. Price is a marketing instrument appearing in connection with other instruments - service, distribution, promotion, service process, customer service and physical evidence. Price is a frequently used tool also by railway transport companies allowing for more effective adjustment to the current changes in demand. Therefore, this instrument must be an integral part of pricing strategies for enterprises. P. Waniowski (2012, p. 228) draws attention to the fact that not only the amount of the discount is important, but also how the price rebates will be presented to potential buyers. This has a direct impact on the sales volume and, consequently, also on the profits of a given company. The basic pricing methods refer to costs (fixed and variable, dependent and independent of the production volume, profitability and profit achieved), demand (in which the size and elasticity of demand is a reference), to the competition (in relation to the prices of competitors within a given branch). Service providers can implement the price impact through (Rosa, 2018):

1. application of an appropriate pricing strategy (low or high prices),
2. emphasis on specific price decisions (eg promotional prices, discounts, rebates, etc.),
3. differentiation.

In turn, the price level of transport services depends primarily on the following factors:

- number of entities offering a given type of services (competition),
- the level of the own costs of entities providing services,
- the level and diversity of demand for transport services,
- changes in the prices of basic energy carriers (gasoline, diesel oil, electricity),
- rarity of services,
- time of transport service,
- tax charges (e.g. VAT).

Practice shows that prices are shaped primarily by a highly competitive market. Transport costs are the main component of prices. As other authors also point out (Zajferd 2013, pp. 458, 464), people are perfectly able to assess what means of locomotion is optimal for them from the point of view of price, but also the time of travel and comfort. As a result, with the current traffic density, some residents resign from using the car despite having it. In passenger transport, especially in rail, air and bus transport, it is much easier than in transporting freight to get information about price levels, price discounts, to observe many price promotions, treated as price decisions, occurring within the pricing strategy applied, related to specific days travel, hours, number of people, etc. They are communicated to travelers in the form of information on the Internet, at stations, airports, in various types of advertisements. With competitive fares, enhanced transparency in prices, and availability of comparable products, the demand for products is no longer independent. The demand for a product depends on the prices and choices available at the time of purchase. (R.K. Amit, K. Balaiyan, A.K. Malik, X. Luo & A. Agarwal, p. 2). The differentiation is the third, very important factor of the marketing approach to prices. Differentiation in the prices of transport services consists in offering by service providers the same services to different types of buyers at different prices. The basic criteria for price differentiation of transport services can include (Rosa, 2018):

- type of route, line or connection (relationship),
- the space where services are provided,
- time of service provision and their quality characteristics (eg travel comfort, scope of additional services),
- size of one-time sale of services, contract,
- type of cargo,
- distance of transport,
- payment for services.

It should be noted that consumers use a certain reference price. This is the price they consider to be appropriate for a given product or service. If they conclude that the price offered to them is higher than the reference price, then they do not decide to buy [Falkowski, Tyszka, 2009, p. 404].

### **3. METHODOLOGY AND RESULTS OF OWN RESEARCH**

Our research was carried out from October 2017 to March 2018 on a sample of 350 people from all over Poland, deliberately selected in terms of age, so that they constitute a homogeneous, representative sample of "young adults" aged 18-29. While preparing the completed questionnaires, it turned out that 19 of them were incomplete and a sample of 331 people was accepted in the further development and inference (error 0.003 and  $\alpha = 0.95$ ). The aim of the research was to select the key features of railway passenger transport services, important for service recipients and obtaining assessments of the implementation of these features by entities providing passenger transport services in Poland.

In order to answer the research questions posed and test the hypotheses put forward, statistical analyzes were performed using the IBM SPSS Statistics version 25. It was used to analyze the basic descriptive statistics, the characteristics of the subjects using frequency analysis and a number of Pearson's Chi2 correlation analyzes, t student for independent samples, one-way analysis of variance, Pearson's r and regression analysis. The classical threshold  $\alpha = 0.05$  was considered the level of significance. The results of the test statistic probability at the level of  $0.05 < p < 0.1$  were interpreted as significant at the level of statistical tendency. In the first step, basic descriptive statistics were calculated along with the Shapiro-Wilk test examining the normality of the distribution of all measured variables on the quantitative scale. The result indicated that the distributions significantly differed from the Gaussian curve. However, the skewness of all variables did not exceed the range of  $-2 < Sk. > 2$ , by which it could be considered that the variables have distributions close to normal.

*Table 1: Descriptive statistics*

	<i>M</i>	<i>Me</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>	<i>Kurt.</i>	<i>Sk.</i>	<i>S-W</i>	<i>p</i>
<i>The significance of the travel price</i>	1,57	1,33	0,57	1	4	2,71	1,38	0,83	<0,001
<i>Assessment of travel price</i>	2,27	2,33	0,63	1	4	0	0,12	0,97	<0,001
<i>Overall assessment of rail transport services</i>	2,1	2,09	0,49	1	4	1,74	0,2	0,96	<0,001

In order to check which sociodemographic variables, statistically significantly, correlate with the preferences of rail transport, student's t tests for independent samples and one-way analysis of variance were performed. It was verified whether the sociographic changes such as gender, education, household size, income, professional status, student / schoolboy status and place of residence correlate with the assessment of the significance of the travel price. The t test for independent samples was used for sociodemographic variables with only two groups.

*Table 2: Relations of preferences regarding railway transport and sociodemographic variables*

		<i>t</i>	<i>p</i>	<i>d</i>	95% CL	
					<i>LL</i>	<i>UL</i>
Significance of travel price	Sex	-2,84	0,005	-0,02	-0,33	-0,06
	Professional status	-1,51	0,132	0	-0,3	0,04
	Status of schoolboy/student	-0,94	0,350	-0,01	-0,27	0,1

As can be seen in the data included in the table 2, only the relationship between sex and the significance of the price of travel turned out to be statistically significant and characterized by weak strength. The other correlations listed in table 2 were statistically insignificant. Then, a one-way analysis of variance was made several times, in which the opinions on the significance of the price of the travel in rail transport were the variables tested. The statistics were carried out for grouping variables, which were on the qualitative scale and included more than two groups. These sociodemographic variables include education, size of the household, income in the household and the place of residence of the respondents (table 3). Correlation strength was calculated using omega<sup>2</sup>.

*Table following on the next page*

*Table 3: Relations of preferences regarding railway transport and sociodemographic variables*

		<i>F</i>	<i>p</i>	$\omega^2$
Significance of travel price	Education	0,78	0,504	0
	Size of the household	0,57	0,684	-0,01
	Income	0,54	0,652	-0,01
	Place of residence	2,09	0,101	0,01

The results cited in Table 3 indicate the lack of a statistically significant correlation between the significance of the price of the travel and the education, place of residence, income and size of the household. The price was the category for which (among others) the preferences of the respondents were checked. According to the obtained mean value, it was the most important aspect in rail transport ( $M = 1.57$ ,  $SD = 0.57$ ). In addition, a statistically significant difference was found in the assessment of the ticket price, between women ( $M = 1.48$ ,  $SD = 0.47$ ) and men ( $M = 1.67$ ,  $SD = 0.66$ ). Women paid more attention to the price of travel in rail transport than men. Due to the significant correlation between gender and assessment of the importance of the price of travel in rail transport, it was decided to check the exact preferences of the respondents, while examining their relationship with gender. For this purpose, Pearson's Chi2 correlation analysis was used, and then, depending on the relevance of the relationship, a frequency analysis was performed for all respondents or it was broken down by gender. In this way, it was checked how important it is for the respondents to guarantee a refund of funds due to delays, price promotions and rail ticket prices. Table 4 presents the distribution of responses to the question regarding the validity of the features of passenger transport services.

*Table 4: Significance of the features of passenger rail transport services  
(Source: own research N=331)*

Significance / features of passenger transport services	Very significant %	Significant %	Less significant %	Insignificant%
Convenient connection times	75	18	4	3
Punctuality	73	19	5	3
Ticket prices	67	26	4	3
Duration of travel	69	22	6	3
Number of connections	69	23	5	3
Quality of services	63	29	6	2
Number of transfers	69	21	7	3
Price promotions	58	29	9	4
Purchase of a ticket using mobile devices	56	27	12	5
Way of presenting the offer (leaflets, folders, information, promotions)	13	33	34	20



The research shows that the most important features of passenger rail transport services (responses: very significant and significant) for young buyers (customers) are:

- convenient connection times (the most important feature),
- punctuality,
- ticket price,
- duration of the travel,
- number of connections,
- quality of services provided,
- number of transfers,
- price promotions,
- purchase of a ticket using mobile devices.

The method of presenting the offer (leaflets, folders, information, promotions), the ability to track information in social media, the well-known carrier's brand proved to be completely irrelevant to the respondents.

### 3.1. Significance of the ticket price in rail transport

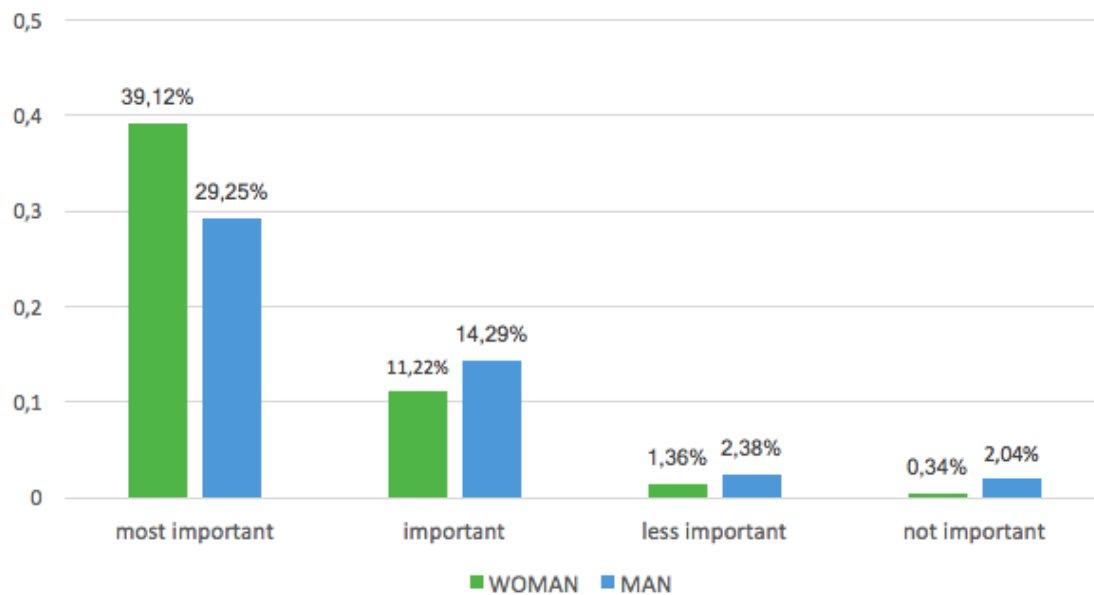
The research results indicate that the assessment of the significance of the price of railway tickets differs depending on the sex of the respondent [ $\chi^2(3) = 8,97$ ;  $p = 0,028$ ;  $V = 0,18$ ]. Additionally, due to the number expected smaller than 5 for, the calculations it was necessary to use the Fisher correction. The calculated relationship had a weak strength, and its direction was determined by frequency analysis.

*Table 5: Significance of rail tickets prices*

	<i>Women</i>	<i>Men</i>	Total
Very significant	75,2	61	67,4
Significant	21,6	29,8	25,5
Less significant	2,6	5	3,7
Completely insignificant	0,7	4,3	3,4

Respondents were most often of the opinion that rail ticket prices are very important. Again, women paid more attention to ticket prices than men. Only a few declarations about the lack of significance of rail ticket prices were observed (Figure 1).

*Figure following on the next page*

*Figure 1: Significance of ticket prices in rail transport by gender*

### 3.2. Summary of preferences regarding the price of travel in rail transport

The ticket price was the most important element of travel expense for the respondents ( $M = 1.4$ ). However, the assessment of the importance of the price varied depending on the gender. Women were more interested in the cost of tickets ( $M = 1.29$ ) than men ( $M = 1.52$ ).

Price promotions were on the second position ( $M = 1.54$ ). While women were more inclined to the opinion of the high importance of price promotions ( $M = 1.38$ ), men considered promotions usually as important but not as priorities ( $M = 1.73$ ). The least important of the price category was the guarantee of reimbursement for delays in rail transport ( $M = 1.78$ ). After all, it was still considered an important aspect in rail transport. In this question that the opinions of men ( $M = 1.8$ ) and women ( $M = 1.76$ ) were the most similar.

### 3.3. Assessment of the current implementation of rail transport services

After checking the priorities of the respondents regarding rail transport, it was decided to see how the respondents evaluate current services. The respondents rated individual elements of services from 1 to 4, where 1 meant very good and 4 very bad. After calculating the average of the ratings, it turned out that the respondents have good opinions about the services provided by rail ( $M = 2.1$ ,  $SD = 0.49$ ). Table 6 presents a detailed distribution of the answers to the question regarding the assessment of the implementation of the features of passenger transport services.

*Table following on the next page*

*Table 6: Assessment of the implementation of the characteristics of passenger transport services by rail (Source: own research N=331)*

Assessment of the implementation of the characteristics of passenger transport services by rail	Very good %	Good%	Bad%	Very bad %
ticket purchase by means of mobile devices	43	44	11	2
ticket price	<b>22</b>	<b>59</b>	17	2
way of presenting the offer (leaflets, folders, information, promotions)	17	57	20	6
number of transfers	19	54	23	4
price promotions	21	38	35	6
quality of services provided	16	58	20	6
travel duration	17	46	28	9
convenient hours of connections	17	46	31	6
number of connections	17	45	31	7

Over half of the respondents considered the current ticket price in rail transport as good (59.5%). The second most common answer was very good (21.8%), which means that respondents are usually satisfied with the ticket price. Definitely fewer people considered the ticket price as bad (16.5%) and only a few rated it as very bad (2.1%). In addition, it was decided to examine whether the preferences of the respondents are related to their opinion. To this end, the correlation between the general assessment of the respondents and their opinion on the importance of modern technology and the time and price of the trip has been analyzed. Due to the quantitative scale of variables and distributions close to the Gaussian curve, the calculations were based onr Pearson test.

*Table 7: Correlations of the assessment of the price of rail transport services with the preferences of the respondents*

	Assessment of rail transport services	
	<i>r</i>	<i>p</i>
<b>Significance of transport price</b>	<b>0,18</b>	<b>0,008</b>

It was noted that opinions on the price of the travel correlated significantly with the overall assessment of rail transport services. In addition, this relationship had a positive trend, which meant that with the increase in the importance of categories, the overall assessment of the respondents regarding rail transport increased. The only price element that had an average opinion for respondents, which was very important, was the price of a ticket in rail transport. Due to the priority importance of the cost of tickets, it was decided to take a closer look at the opinion on it. The regression analysis showed that, knowing the given preferences of the respondents, it is possible to predict approximately 7% of the variance of the overall assessment of rail transport [F (2,212) = 6,54; p = 0.002; R2 = 0.07]. For example, the importance of modern technology turned out to be an irrelevant predictor (t = 0.06, p = 0.952,  $\beta$  = 0, B = 0.06).

The only significant predictor was related to the opinion on the price of the travel ( $t = 2.49$ ,  $p = 0.013$ ,  $\beta = 0.07$ ,  $B = 0.17$ ). Because the value of B absolute term = 1.71, therefore the equation of the model is as follows:

$$\text{Railway transport assessment} = 1.71 + 0.17 * \text{opinion on the importance of the travel price}$$

#### 4. CONSLUSION

The impact on purchasing decisions of buyers during the increasing diversification of their needs and behavior requires the use of many marketing tools needed to shape these relationships. One of them is the price of the product / service which, if used properly, can contribute to the individualization of the process of establishing and maintaining relationships with various clients, especially as studies show that individual customer groups react differently to the level and structure of prices. The obtained data show that the price according to the obtained mean was the most important aspect affecting purchasing decisions in rail transport ( $M = 1.57$ ,  $SD = 0.57$ ). In addition, a statistically significant difference was found in the assessment of the ticket price, between women ( $M = 1.48$ ,  $SD = 0.47$ ) and men ( $M = 1.67$ ,  $SD = 0.66$ ). Women paid more attention to the price of travel by rail transport than men. After calculating the mean of the ratings, it turned out that the respondents have good opinions about the services provided by rail ( $M = 2.1$ ,  $SD = 0.49$ ). The research shows that passenger transport prices are not too high, while price promotions have been assessed rather low. An analysis of purchasing behavior has shown that rail passengers expect a timetable that is tailored to their needs and a competitive price. The competitive situation on the market means that at the same time they expect comfortable and functional trains, adequate point infrastructure (stations, stops), integrated transfer hubs and an appropriate level of service. Railway is a system in which every element of it is important and can affect the final choice of means of transport by passengers, but still as research shows, price is the key factor influencing the choice of means of transport.

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#### LITERATURE:

1. Amit, R. K., Balaiyan, K., Malik, A. K., Luo, X. & Agarwal, A. (2019), *Joint forecasting for airline pricing and revenue management*, Journal of Revenue and Pricing Management.
2. Bąkowski, W., Szewczuk, A. (red.) (2000), *Strategie konkurowania na rynku transportowym*, Ogólnopolska Konferencja Naukowa „Ekstra 2000”, Fundacja na rzecz Uniwersytetu Szczecińskiego, Szczecin.
3. Buehler, R., Pucher, J. (2012), Demand for public transport in Germany and the USA: an analysis of rider characteristics, *Transport Reviews* 32,5.
4. Długosz, J. (2009), *Systemy transportowe, transport intermodalny*, (w:) Kisperska-Moroń D., Krzyżaniak S. (red.), *Logistyka*, „Biblioteka Logistyka”, Instytut Logistyki i Magazynowania, Poznań.
5. Engelhardt, J. (2007), *Transport kolejowy*, (w:) Liberadzki, B., Mindur, L. (red.), *Uwarunkowania rozwoju systemu transportowego Polski*, Wydawnictwo Instytutu Technologii Eksploatacji – PIB, Warszawa – Radom.
6. Falkowski, A., Tyszka, T. (2009), *Psychologia zachowań konsumenckich*, GWP.
7. Fröidh, O., Byström, C., (2013), Competition on the tracks – Passengers’ response to deregulation of interregional rail services, *Transportation Research Part A*, 56.

8. Gorlewski, B. (2010), Czynniki kształtowania popytu na przewozy pasażerskie kolejami dużych prędkości - aspekt teoretyczny, TTS Technika Transportu Szynowego, R.16, nr 9, Instytut Naukowo-Wydawniczy "TTS" sp. z o.o., Radom.
9. Paprocki, W. (1996), Marketing usług kolejowych, Kolejowa Oficyna Wydawnicza, Warszawa.
10. Rosa, G. (2013), *Konkurencja na rynku usług transportowych*, C. H. Beck, Warszawa.
11. Rosa, G. (2018), *The concept and assessment of the implementation of an integrated rail ticket on the passenger transport market*, *European of Service Management*, 3 (27/2), 363-370,
12. Taylor, Z. (2007), *Rozwój i regres sieci kolejowej w Polsce*, IGiPz PAN, Warszawa
13. Tomanek, R. (2002), *Konkurencyjność transportu miejskiego*, Prace Naukowe Akademii Ekonomicznej w Katowicach, Katowice.
14. Urząd Transportu Kolejowego (2017), *Wykorzystanie i potencjał kolejowych przewozów pasażerskich w Polsce*, Warszawa.
15. Waniowski, P. (2012), Różnicowanie cen jak wyraz orientacji na klienta, *Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 710, Problemy Zarządzania, Finansów i Marketingu nr 24*, Szczecin.
16. White, P.R. (2016) , *Public Transport. Its Planning, Management and Operation*, London.
17. Wyszomirski, O. (red.) (1994), *Rynek przewozów pasażerskich*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.
18. Wyszomirski, O. (1998), *Funkcjonowanie rynku komunikacji miejskiej*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.
19. Zajfert, M. (2013), Kolejowe przewozy pasażerskie o charakterze użytku publicznego - doświadczenia ostatnich 20 lat transformacji kolei w Polsce, *Studia Ekonomiczne 1 Economics Studies nr 3 (LLXXVII)*, Instytut Nauk Ekonomicznych Polskiej Akademii Nauk, Warszawa.

## CONNECTING EMPLOYEE PERFORMANCE TO THE FIRM'S FINANCIAL RESULT VIA GOAL SETTING

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### **ABSTRACT**

*In case of demand labor market situation, firms may suffer from human resource shortage. It is crucial that the best employees are attracted and kept within the company. Employees have wider range of opportunities to choose from. Therefore, besides ensuring their own profitability, firms must be attractive in two ways. They have to provide meaningful jobs and competitive compensation. Employee performance is generally considered as how she fulfills the job description and how much comply with the competence and behavioral requirements connected to the job or the organization. Extensive amount of research have been made on individual performance management. These articles focus on the phases, types of goals and the way of setting goals. While research focusing on the content of the goals is rarer. Previous research showed the improved employee performance leads to improved financial performance of the firm although these two are not directly connected to each other. The aim of this article is to define a construct that makes performance management satisfy the needs of both the company and the employees. This article proposes a model based on goal characteristics, employee attributes and organizational structure that help transforming the goal of individuals that are directly connected to the firm's financial performance. Besides establishing the direct link, the new model would lead improved employee satisfaction with the performance management process as the subjectivity and issues connected to the human behavior may be eliminated. This article contains a theoretical model based on the literature review without any empirical validation which may be subject of further research.*

**Keywords:** *goal setting, financial results, individual performance*

### **1. INTRODUCTION**

In case of demand labour market situation, firms may suffer from human resource shortage. It is crucial that the best employees are attracted and kept within the company. Employees have wider range of opportunities to choose from. Therefore, besides ensures their own profitability firms must be attractive in two ways. They have to provide meaningful jobs and competitive compensation. Performance management is one of the relevant human resource management processes. Performance management is an extensively researched area. The goal setting theory was tested in over 1000 of scientific articles (Latham et al., 2016) and a widely used process. It is implemented by most of the organizations (e.g. Kanij et al, 2014). Managers manage employees' performance to learn, develop and meet organizational objectives (Schaerer et al., 2018). If performance management implemented properly, it has benefits such as is a great help for organizations to achieve strategic targets (Weimei & Feng, 2012) or companies with performance management practices outperform their peers as the changed employee behavior improves the performance via understanding, motivation and focus (de Leeuw & van den Berg, 2011). Effective practice leads to improved employee productivity, job satisfaction and commitment (Pälli & Lehtinen, 2014).

Job satisfaction is a moderator between job security, organizational support, psychological contract and employee performance (Latorre et al., 2016). Aguinis et al. (2011) listed a number of benefits for employees e.g. increased self-esteem, identify ways to maximize their strengths and minimize their weaknesses; for managers e.g. greater insights to their subordinates, their employees become more competent, clearer communication of performance; for organizations e.g. make organizational goals clearer, reduced employee misconduct, increased employee commitment, and engagement. Critical success factors are identified connected to all elements of the performance management system (Ratnawat & Jha, 2013). Despite of its benefits performance management is not a liked process. It brings little value and demotivating (Canedo et al. 2017), is seen as waste of time and resources (Aguinis et al., 2011); is not transparent enough, employees lack information (Babelová et al., 2015). Only 5% of employees and 2% of HR professional believed their managers are skilled in performance management (Schaerer et al., 2018). Performance management affects the firm's performance on three levels, organization, team and individual level (Tseng & Levy, 2018). In contrast to the firm level, where the performance is financial results, individual's performance is evaluated based on predefined criteria how much the given employee fulfills her duties described as job specification (Apaka et al., 2016) or it may be seen as productivity (Delery and Shaw, 2001). Performance has outcome and behavioral aspects (Sonnentag & Frese, 2005). Individual performance is usually rated and measured on a few item scale (de Andrés et al., 2010; Truss et al., 2013). There are three generally used performance measures such as overall job performance which includes task performance i.e. fulfilling duties in job description and contextual performance i.e. going beyond the job obligations and make impact and help achieving the organizational goals (Lado & Alonso, 2017; Sonnentag & Frese, 2005). Another job performance measures are being often absent from work, making few mistakes at work, completing tasks efficiently (Yuen et al, 2018), employee's accuracy, speed or ability to solve problem (Shamsuddin & Rahman, 2014). Individual performance management links individuals to the mission of the work unit (Platts & Sobótka, 2010). Individual performance management has several benefits as it improves the communication; establish trust between employees and their managers; links individual performance to strategy; identify training and professional development needs; it is a tool for performance improvement (O'Boyle, 2013). Performance management process consists of the following main steps: goal setting, monitoring, evaluation, feedback and application of the evaluation (Frese & Fay, 2001; Weimei & Feng 2012; Stanciu, 2014). The aim of this article is to define a construct that makes performance management satisfy the needs of both the company and the employees. The basic idea is to eliminate the unliked and subjective elements of the performance management and change them with elements which connect the employee performance to the financial results of the firm.

## **2. LITERATURE REVIEW**

### **2.1. Goal setting**

There is a causal relationship between goals and performance which is affected by goal commitment in the expectancy theory (Ceresia, 2011). The goal commitment comes from attractiveness of goal attainment and expectancy of goal attainment. Setting specific and challenging goals leads to higher performance. The difficulty of the goal is linear to the performance (Latham et al., 2016). Goals may be defined in multiple ways it can be as a "do as many you can" or can exactly specify the value. The vague and easy goals results the worst performance while difficult goals yield better performance and the impossible goals results the best performance (Landers et al. 2017). Getting employee commitment to difficult goals may be an issue; participation is needed for agreeing higher goal (Islami et al., 2018). Specific challenging goals do not, necessarily lead to such desirable personal and organizational

outcomes (Heslin et al. 2009). Rather, the results from goal setting depend on goal commitment, task complexity, goal framing, team goals, and feedback (Heslin et al. 2009). Goal may be set in three ways based on employee participation. (1) supervisor proposes, (2) dialog between subordinate and supervisor (3) summarizing earlier discussions (Pälli & Lehtinen, 2014). Self-set goals are usually lower which results in worse performance (Latham et al. 2016). Subconsciously primed goals lead to higher self-set goals and better performance (Latham et al. 2017). Basically, there are three types of goals: learning, performance and behavior (Latham & Seijts, 2016). Ford (2017) defined a three steps process for enhancing employee performance. The first steps makes 8 distinct categories and suggest if the different type of goals should be lighter or heavier. Eight goal setting category is made of three dimensions: newly hired or existing employee; experienced or inexperienced employee; customer facing or structural jobs. On complex tasks when acquiring knowledge is difficult, learning goals lead to better performance than difficult learning goals. Learning goals leads to performance in case of cognitive ability commitment, appraisal and goal congruence (Latham et al., 2016). Performance goals focus on the outcome while learning goal is for gaining insight and knowledge of the way to perform (Seijts & Latham 2012). Focusing on both goals on the same time may not be appropriate (Chen & Latham, 2014). Goals may be organized in to a hierarchy as superordinate, intermediate and subordinate goals (Höchli et al. 2018). Superordinate goals are close relation with someone's values and cannot be exactly measured such as "be healthy". While subordinate goals may be exactly measured example provided as "do 40 push-ups on Wednesday afternoon". People are more likely to successfully pursue their goals over the long run when they focus on both superordinate and subordinate goals. Traditionally goal setting is cascaded top down, which has two issues. First, it is time consuming. Individuals need to wait for organizations on higher levels to set their goals. Second, the cascading erodes the original organizational objectives (Mueller-Hanson & Pulakos, 2015). They suggest a new approach, linking up, when each organizations and individuals set their own goals linking to the organizations objectives. The authors make further recommendations for goal setting such as employee and managers should cooperate; job relevant goals to be set, e.g. in R&D there may be multi-year projects; setting meaningful goals. Seijts & Latham (2012), proposes ten goal settings principles based on more than 1000 studies in goal settings such as employees need to understand the rationale behind the goals, constraints needs to be removed or ineffective employee behavior must be seen via monitoring activities. Goal orientation is more important in services organizations than in manufacturing. Both learning goal orientation and performance goal orientation have significant relationship with financial performance in services organizations and not significant in manufacturing sector based on the Malaysian Productivity Corporation database (Che-Ha et al., 2014).

## **2.2. Improvements to performance management**

Personal initiative is an active performance measurement which builds on employees who are self-starting, proactive and persistent to overcome obstacles in achieving goals (Frese and Fay 2001). The concept may results in high performance on both individual and organizational level and has positive effect also on the competitiveness and innovation as creative employees may succeed with implementing ideas. In contrast to the traditional performance management, where for good performance, employee must perform the task as it is described. The job design may be changed by high initiative employees to better match the goals (Frese and Fay 2001; Gruman & Saks, 2011). The antecedents of personal initiatives are described as environmental support, KSA (knowledge, skills and abilities), personality and orientation (Frese and Fay 2001). Participation in definition of performance measures affects employee initiative via attitude, social pressure and capability (Groen et al., 2012). On the other hand there are a number of cases when personal initiative does not work, such as in case on inadequate skills



and knowledge, on an area where initiative is not needed or if someone does not give up the initiative however it is rather harmful. Initiatives often has effect only on long run while on short or middle run they may have negative effect, the supervisor of the initiator stops the initiative before it shows positive effects. Bouskila-Yam & Kluger (2011) suggest a Strength-based performance appraisal (SBPA) with a three-fold requirement. First, it should help the organization to improve its performance and business results. Second, it should focus on employees' strength. Third, it should reflect the double meaning the appreciation as valuing people and increase the value e.g. stock.

### **2.3. Issues with performance management**

Key performance criteria in many cases are not connected to the outcome but rather behavior, aptitude, skills or potential (Moona et al., 2010). Too many criteria for evaluation performance, some of them do not express the performance e.g. self-image (Espinilla, 2013). Job performance is measured as existence of key competences or using behaviorally anchored rating scales (Lado & Alonso, 2017). The performance KPIs are unscientific (Weimei & Feng, 2012). The performance is measured on a subjective scale (Babelová et al., 2015), it is the judgement of the evaluators who are not professional (Weimei & Feng, 2012). The ratings are usually inflated for several reasons, e.g. avoid confrontation, takes time away from other important processes, organizational norm, promote problematic employee out of the organization or desired to motivate (Spence & Keeping, 2011) or leniency bias (Marchegiana et al. 2016). Ratings are deflated to communicate poor performance and support firing an employee (Spence & Keeping, 2011). Individuals rate themselves higher, therefore they expect higher rates (Harari & Rudolph, 2017). Managers overestimate the clarity of the feedback (Schaerer et al., 2018). Levy & Williams (2004), list a number of further rater errors and biases based on literature review like severity central tendency, similar to me, liking, friendship first impression or recency. One of the weaknesses of the studies is that employees are asked about their attitude, perception and behavior. (Latorre et al., 2016). Individual performance management has challenges when used for performance related pay (O'Boyle, 2013) Performance appraisal does not lead to performance improvement and it destroys the relationship between the employee and her manager (Bouskila-Yam & Kluger, 2011). The above list of issues with performance management suggests that the goals and evaluation criteria are not defined in the way as they can be objectively evaluated. In contrast with the company financial results which are well defined indicators that are objectively measures i.e. in monetary terms. Even when the individual goal or contribution is not able to measure in monetary terms, it should be measured on a numeric scale instead of a Linkert-scale ranging from "not at all" to "Absolutely" or from "completely disagree" to completely agree". As an economic entity, the firm wants to achieve financial results. From the firm's point of view, better employee performance is relevant as it leads to improved financial results. This suggests financial results are what make the firm be satisfied with performance management. Profit per employee is an appropriate measure for a study focusing on employee-related disclosures (Kent & Zunker, 2017). The employee has a need at a given time to be fulfilled. The need may be earning certain amount of money or self-actualizing. The employee satisfaction may be connected to fulfilling her needs. As the needs are changing over time, performance management, especially goal setting may be the right means for defining the need and measuring its achievement.

## **3. MODEL BUILDING**

### **3.1. Key elements to performance management**

The literature review suggests that there are three main elements that need to be considered when creating the model. First the employee itself can play an active role in both defining and attaining the goals.

The employee initiative concept (Frese and Fay, 2001) is an active performance management method. Self-efficacy is defined as an individual's belief that a specific task can be mastered (Seijts & Latham 2011). Two dimensions in goal setting model defined by Ford (2017) are connected to employees. These are newly hired or existing employee; experienced or inexperienced employee. Out of the five personality factors, emotional stability and conscientiousness predicts all performance measures, however conscientiousness predicts contextual performance less than the other two measures. Extroversion showed large validity with overall and contextual performance (Lado & Alonso, 2017). Second element is the goal and its characteristics. Goals should have a connection to corporate objective and allow individuals to formulate goals according to their own interest within the organizational context (Gruman & Saks 2011). The goal should be built on employee strengths (Bouskila-Yam & Kluger, 2011). The subjective elements such as writing self-report and rating needs to be eliminated (Mueller-Hanson & Pulakos, 2015). Employee participation in goal settings is summarized in a letter to managers (Ford, 2017) which includes boss' job mission and goals as well as employee job mission. Goals may be framed positively as a challenge or negatively as a threat (Heslin et al. 2009). Goal commitment is a moderator to the performance. One of its factor is how important the goal to the individual (Locke & Latham 2002). The third element is needed the form structure itself. The organizations may vary on a wide range, however there are a number of characteristics that may be used to describe them. There may be special appraisal models for certain job roles, e.g. software testers (Kanij et al, 2014) or the same criteria may be used for all employees within the organization. Employees may be grouped, e.g. divided as sales and non-sales (Espinilla, 2013) or assigned to customer facing and structured jobs (Ford, 2017). Another grouping of job type is line versus staff department (Yanagizawa & Furukawa, 2016). Line jobs are directly related to the firms products and services while staff departments plays supporting role. The goal characteristics line and staff function are also different. The goals of line personnel are (1) more directly linked to company goals (2) connected to statistics rather quantitative (3) high task interdependence, members discuss goals frequently (Yanagizawa & Furukawa, 2016). Lee (2018) argued to deny the hierarchy within the firm. The firm may be viewed as a nexus of contracts between internal rather than a hierarchy.

### 3.2. The model

The financial performance from the firm point of view is the relevant performance measure. The employee performance is usually defined as fulfilling the job requirements. Combining these two types of performance, employee goals may be better connected to financial results of the company. The goals of individuals may be characterized by the following criteria:

1. Value definition  
The goal may be directly connected to the customer value or the business value or it may be non-value non value goal.
2. Connection to the firm's mission  
If the goal is a type of value based goal it may be directly connected to the firm's mission statement or it may be independent.
3. Connection to the individual  
The goal may formulated completely from the employee point of view, it can describe what the employee want to achieve what is the need she want to get fulfilled. On the other end of the scale, the individual's goal is purely derived from the company targets and cascaded down to the employee via the organizational structure.
4. Connection to supervisor's goals  
As the goal setting procedure is the joint activity of the individual and her supervisor, it may happen that the supervisor's goals are completely revealed and the individual goals are

connected to them. On the other extreme, the supervisor's goals may remain hidden for the employee when setting her goals. Any combination of the above may happen.

5. Measurement of the goal

As the literature shows performance appraisal is usually measured on a Linkert scale ranging from completely disagree to completely agree. The goals may be done as a textual evaluation which is as subjective as a Linkert scale but not only predefined responses may be given. As for the objective measures, there could be any numeric measure or a financial measure.

Proposition 1: The goal characteristics of the employees predict the firm's profit per employee.

The above goal characteristics suggest that the subjectivity may be eliminated from the performance appraisal, which is one of the reasons why the employees hate the process. Therefore the following proposition is made.

Proposition 2: The goal characteristics construct predicts the individual satisfaction with the performance management process.

The individual performance largely depends on the individual herself. Therefore, the individual's attributes must also be examined:

1. Self-starting (Frese & Fay, 2001)

The self-starting employees does not wait until someone tells her what needs to be done, takes initiative and do them. They are active in setting goals instead of having assigned goals.

2. Proactive (Frese & Fay, 2001)

Proactive employee anticipates the future challenges and opportunities and act accordingly, she does not wait for the demand to come.

3. Persistent (Frese & Fay, 2001)

Persistency is needed to reach the goal, especially when there are changes that make the goal achievement more difficult.

4. Level of expertise in the job

Mastering a job takes time. During the work, the individual gains both theoretical and practical expertise. The expertise effect how fast or what quality work she does which effects the overall performance.

Proposition 3: The employee attributes within the firm predict the firm's profit per employee.

Finally, the individual's place within the organization plays a key role on how much effect she can make on the firms performance. There are a lot of types of organizational structures. The number of different implementations is even far more. For defining the model the following items are used as the definition of the organizational structure.

1. Employee activity in the lifecycle

From the financial performance point of view the sales is an important milestone. It is a sign that the company will have revenue. The delivery is tightly connected as it is important for the firm to obtain the revenue. Based on these two important milestones three phases are defined: presales, delivery, post-delivery. All three phases affects the firms profit in a certain way.

2. Connection to the customer

An employee may have a direct connection with the customer e.g. sales or customer support. She may be part of a team that works directly with the customers but not involved in the

customer interaction, e.g. back office. Finally there may be activities and individuals who may not be connected to customers in any way, e.g. administration or internal services.

3. Distance from the CEO

The Chief Executive Officer of any company is the ultimate responsible for the company financial results. She definitely has effect on the financial performance. Some part of the responsibility is delegated in the organization. The further an individual is from the CEO the less responsibility she gets, therefore the chance for the contribution also reduces.

4. Receiver of the outcome

The firm's financial results primarily comes the customers as revenue. The more work's receiver is the customer itself, the better chance is for the higher financial performance. However, individuals may work on activities and have goals which have an internal customer, i.e. a colleague.

5. Role in the team

Most of the activities are executed in a team, most of the goals achieved as teamwork, therefore the individuals role in the team is an important factor. She may have a special and rare role. Therefore her achievements may easier be recognized. There may be several similar roles within the team whose contribution may not be differentiated. Finally there may be achievements that remain hidden even for the team mates and impossible to recognize.

6. Job type

One obvious way of differentiating the jobs is distinguishing managers and experts. The latter, usually produces the output while the first one provides the prerequisites and makes sure the experts are able to perform their tasks.

Proposition 4: All positions within the firm may be described in this structure

Proposition 5: Within the firm, there is a relationship between the goal characteristics and organization structure on individual level.

Proposition 6: The organizational structure predicts the firm's profit per employee

#### 4. SUMMARY

Employee performance is generally considered as how she fulfills the job description and how much comply with the competence and behavioral requirements connected to the job or the organization. Previous research showed the improved employee performance leads to improved financial performance of the firm although these two are not directly connected to each other. This article proposes a model based on goal characteristics, employee attributes and organizational structure that help transforming the goal of individuals that are directly connected to the firm's financial performance. Another benefit would be the improved employee satisfaction with the performance management process as the subjectivity and issues connected to the human behavior may be eliminated. The goal itself and its characteristics are in the center of the model. Therefore this article contributes to the literature as the content of the goal is not frequently researched topic within goal settings. Contribution to the practice is the firms may be able to increase their profit via managing their employees more directly connected to the financial results. Moreover, the individual performance rating may be used for performance pay even in case of the teamwork is promoted. This article contains only a theoretical model without any empirical validation that still needs to be done. The construct requires data collection from an entire firm or majority of its employees to prove the proposition 1, 3 and 6 as well as at several point of the time.

**LITERATURE:**

1. Aguinis, H, Joo, H and Gottfredson, R K. (2011). Why we hate performance management – And why we should love it. *Business Horizons* 54, 503 - 507
2. Alfes, K, Truss, C, Soane, E C, Rees, C and Gatenby, M. (2013). The relationship between line manager behavior, perceived HRM practices, and individual performance: Examining the mediating role of engagement. *Human Resource Management*, 52(6), 839-859.
3. Apaka, S, Gümüş, S, Önerç, G and Gümüş, H G. (2016). Performance appraisal and a field study. 5th International Conference on Leadership, Technology, Innovation and Business management. *Procedia - Social and Behavioral Sciences* 229, 104 – 114
4. Babel'ová, Z, Kučerová M and Homokyová M. (2015). Enterprise Performance and Workforce Performance Measurements in Industrial Enterprises in Slovakia. *Procedia Economics and Finance* 34, 376 – 381
5. Bouskila-Yam, O and Kluger, A N. (2011). Strength-based performance appraisal and goal setting. *Human Resource Management Review* 21, 137–147
6. Canedo, J C, Graen G and Grace, M. (2017). Let's make performance management work for new hires: They are the future. *Organizational Dynamics* 642
7. Ceresia, F. (2011). A model of goal dynamics in technology-based organizations. *Journal of Engineering Technology Management* 28, 49–76
8. Che-Ha, N, Manondo, F T and Mohd-Said, S. (2014). Performance or learning goal orientation: implications for business performance. *Journal of Business Research* 67, 2811-2820
9. Chen, X and Latham, G P. (2014). The effect of priming learning vs. performance goals on a complex task. *Organizational Behavior and Human Decision Processes* 125, 88–97
10. de Leeuw, S and van den Berg, J P. (2011). Improving operational performance by influencing shopfloor behavior via performance management practice. *Journal of Operations Management* 29, 224-235
11. Delery, J E and Shaw, J. D. (2001). The strategic management of people in work organizations: Review, synthesis, and extension. *Research in Personnel and Human Resources Management*, 20, 165-197
12. Espinilla, M, de Andres, R, Martinez F J and Martinez, L. (2013). A 360-degree performance appraisal model dealing with heterogeneous information and dependent criteria. *Information Sciences* 222,459–471
13. Ford, R C. (2017). Combining performance, learning, and behavioral goals to match job with person: Three steps to enhance employee performance with goal setting. *Business Horizons* 60, 345—352
14. Frese, M and Fay, D. (2001). Personal Initiative: An Active Performance Concept for Work in the 21st Century. *Research in Organizational Behavior*, 23, 133-187.
15. Groen, B A C, Wouters, M J F and Wilderom, C P M. (2012). Why do employees take more initiatives to improve their performance after co-developing performance measures? A field study. *Management Accounting Research* 23, 120-141
16. Gruman, J A and Saks, A M. (2011). Performance management and employee engagement. *Human Resource Management Review*, (21) 2, 123-136,
17. Harari, M B and Rudolph, C W. (2017). The effect of rater accountability on performance ratings: A meta-analytic review. *Human Resource Management Review* 27, 121-133
18. Heslin, P, Carson, J and Vandewalle, D. (2009). *Practical Applications of Goal Setting Theory to Performance Management*. Book chapter: Performance management: Putting research into action Publisher: Pfeiffer Editors: J. W. Smithers & M. London
19. Höchli, B, Brügger A and Messner, C. (2018). How Focusing on Superordinate Goals Motivates Broad, Long-Term Goal Pursuit: A Theoretical Perspective. *Frontier Psychology*, 9:1879

20. Islami, X, Mulolli E and Mustafa, N. (2018). Using Management by Objectives as a performance appraisal tool for employee satisfaction. *Future Business Journal* 4, 94 - 108
21. Kanij, T, Grundy, J and Merkel, R. (2014). Performance appraisal of software testers. *Information and Software Technology* 56, 495–505
22. Kent, P and Zunker, T. (2017). A stakeholder analysis of employee disclosures in annual reports. *Accounting and Finance* 57, 533–563
23. Lacetera, N and Zirulia, L. (2012). Individual preferences, organization, and competition in a model of R&D incentive provision. *Journal of Economic Behavior and Organization* 84, 550– 570
24. Lado, M and Alonso, P. (2017). The five-factor model and job performance in low complexity jobs: A quantitative synthesis. *Journal of Work and Organizational Psychology* 33, 175–182
25. Landers, R N, Bauer K N and Callan, R C. (2017). Gamification of task performance with leaderboards: A goal setting experiment. *Computers in Human Behavior* 71
26. Latham, G P. and Seijts, G H. (2016). Similarities and Differences Among Performance, Behavioral, and Learning Goals. *Journal of Leadership and Organizational Studies* (23) 3
27. Latham, G P, Seijts, G H and Slocum, J. (2016). The goal setting and goal orientation labyrinth: Effective ways for increasing employee performance. *Organizational Dynamics* 45, 271 – 277
28. Latham, G P, Brcic, J and Steinhauer, A. (2017). Toward an Integration of Goal Setting Theory and the Automaticity Model. *Applied Psychology: an International Review*, 66 (1), 25–48
29. Latorre, F, Ramos, D G J and Gracia, F J. (2016). High commitment HR practices, the employment relationship and job performance: A test of a mediation model. *European Management Journal* 34, 328 - 337
30. Lee, J. (2018). Contracts and Hierarchies: A Moral Examination of Economic Theories of the Firm. *Business Ethics Quarterly* 28:2
31. Levy, P E and Williams, J R. (2004). The Social Context of Performance Appraisal: A Review and Framework for the Future. *Journal of Management* 30 (6) 881–905
32. Locke, E A and Latham, G P. (2002). Building a Practically Useful Theory of Goal Setting and Task Motivation: A 35-Year Odyssey. *American Psychologist*, Vol. 57, No. 9, 705–717
33. Marchegiana, L, Reggiani, T and Rizzolli, M. (2016). Loss averse agents and lenient supervisors in performance appraisal. *Journal of Economic Behavior and Organization* 131, 183–197
34. Moona, C, Lee, J and Lim, S. (2010). A performance appraisal and promotion ranking system based on fuzzy logic: An implementation case in military organizations. *Applied Soft Computing* 10, 512–519
35. Mueller-Hanson, R A and Pulakos, E D. (2015) Putting the “Performance” Back into Performance Management. *SIOP-SHRM Science of HR White Paper Series*
36. O’Boyle, I. (2013). Individual Performance Management: A Review of Current Practices. *Asia-Pacific Management and Business Application* 1 (3) 157 - 170
37. O’Boyle, E. and Herman, A. (2012). The Best And The Rest: Revisiting The Norm Of Normality Of Individual Performance. *Personnel Psychology*, 65
38. Pälli, P and Lehtinen E. (2014). Making objectives common in performance appraisal interviews. *Language & Communication* 39, 92–108
39. Ratnawat, R G and Jha, P C. (2013). A Commentary on Effectiveness of Performance Management. *International Journal of Scientific & Engineering Research* 4 (3)

40. Schaerer, M, Kern, M, Berger, G, Medvec, V and Swaab, R I. (2018). The illusion of transparency in performance appraisals: When and why accuracy motivation explains unintentional feedback inflation. *Organizational Behavior and Human Decision Processes* 144, 171–186
41. Seijts, H G and Latham, G P. (2011). The Effect of Commitment to a Learning Goal, Self-Efficacy, and the Interaction Between Learning Goal Difficulty and Commitment on Performance in a Business Simulation. *Human Performance* 24, 189-204
42. Seijts, H G and Latham, G P. (2012). Knowing when to set learning versus performance goals. *Organizational Dynamics* 41, 1-6
43. Shamsuddin, N and Rahman, R A. (2014). The Relationship between Emotional Intelligence and Job Performance of Call Centre Agents. *Procedia - Social and Behavioral Sciences* 129, 75 – 81
44. Sonnentag, S and Frese, M. (2005). *Performance Concepts and Performance Theory*. Book chapter, 10.1002/0470013419.ch1.
45. Spence, J R, Keeping, L. (2011). Conscious rating distortion in performance appraisal: A review, commentary, and proposed framework for research. *Human Resource Management Review* 21, 85–95
46. Stanciu, R D. (2014). Do Romanian small and medium-sized enterprise use performance management? An empirical study. *Procedia Social and Behavioral Sciences* 124, 255-262
47. Tseng, S T and Levy, P E. (2018). A multilevel leadership process framework of performance management. *Human Resource Management Review*, in print
48. Weimei, Z and Feng, T. (2012). Analysis of performance Management in Small and Medium Enterprises. 2012 2nd International Conference on Mechanical, *Industrial, and Manufacturing Engineering*, IERI Procedia 8 – 12
49. Yanagizawa, S and Furukawa, H. (2016). Fitness of Job Type and Management by Objectives: Mediating Effects of Perception of Effectiveness and Goal Commitment and Moderating Effects of Supervisor’s Behavior. *Japanese Psychological Research, Volume* 58, No. 4, 297–309
50. Yuen, K F, Loh, H S, Zhou, Q and Wong, Y D. (2018). Determinants of job satisfaction and performance of seafarers. *Transportation Research Part A* 110, 1–12

## MATURITY MODELS AND SUCCESS IN PROJECT MANAGEMENT – REVIEW OF THE LITERATURE

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### **ABSTRACT**

*Project management, as a set of tools, techniques and practices based on knowledge, and used for making products and providing services, has become a recognized and applied discipline in all types of contemporary organizations across many industries. It helps an organization to reduce the time necessary for placing the product or service on the market, adequately use limited human and other resources, control technical complexities, as well as satisfy stakeholders and increase competitiveness by rapidly reacting to the impulses coming from the customers. Therefore, taking into account the rising strategic importance of project management, the need for developing competence and abilities is a matter of opportunity for organizations. However, although it is desirable for a contemporary organization to achieve maturity and excellence in project management, the sole utilization of project management, even for a longer period of time, will not necessarily help the organization to achieve its goal. Instead, it can result in recurring mistakes, or learning from its own instead of others' mistakes. Thus, the aim of this paper was to provide an overview of past research on maturity models in the context of project management. The authors collected and analyzed a number of key articles published in general and project management literature. Literature was further classified in order to address and analyze different elements of project management maturity and their relevance in the project and project management success.*

**Keywords:** *critical success factors, maturity models, project management, project and project management success, project success criteria*

### **1. INTRODUCTION**

In the past couple of years, business organizations are, more than ever, competing in creating value to survive and accomplish a competitive edge in an extremely dynamic market (Anantatmula and Rad, 2013), thus putting the emphasis on strategic goals with the ability to translate them into results (Jugdev and Thomas, 2002). Their goal orientation, as well as continuous changes that are undertaken to achieve them, put project management practices into focus as part of organizational strategies of successful competition (Bargaoanu and Calinescu, 2008; Andersen and Jessen, 2003). Consequently, the need for professional management of projects, programs and portfolios became a necessity. Nonetheless, many managers are still uncertain or have no good perception of the current level of the project management application in their organization (Ibbs and Kwak, 2000). Although projects are considered to be the basic building material of business value, it is still necessary to understand the complex relationship between project management and its value as a strategic asset (Jugdev and Thomas, 2002), as well as to understand the abilities organizations possess and to know where they are in relation



to competitors and the best organization in the field (Toffler, 1984). This is where maturity models come into place for quantifying the value and developing classification systems that could serve as support (Kerzner, 2001). Thus, to get a deeper insight into the topic, this paper starts with a brief overview of project management maturity models and their structure (elements and levels). The focus is then placed on key project management success factors. Moreover, in the last part of the paper, a desk-research was undertaken in order to analyze available studies on project management maturity models in relation to project and project management success, and several research questions that can potentially fill in the gaps present in the literature were revealed.

## **2. PROJECT MANAGEMENT MATURITY AND MATURITY MODELS**

The term project maturity might be used as an indication or a measurement of the organization's ability to use projects for different purposes (Andersen and Jessen, 2003). The level of maturity of project management is also the acceptance of project management practices in the organization which can be estimated by the development of the processes and procedures required for planning and project progress (Skulmoski, 2001). Given that in practice companies cannot be fully mature and cannot achieve the maximum stage of development, it makes sense to talk about a certain degree of maturity, and measure or characterize the maturity of project management (Ibbs and Kwak, 2000). Over the last two decades, numerous maturity models have emerged in literature as concrete and tangible ways of assessing aspects of project management maturity, giving a comprehensive approach to strategically develop organization's project management structures and competence (Albrecht and Spang, 2014; Crawford, 2006; Grant and Pennypacker, 2006). Since maturity model as a concept has its origin in the field of quality management, in which process management is central, and due to the fact that most of them were inspired by the Capability Maturity Model (Cooke-Davies and Arzymanow, 2003), project management maturity models are consequently process-oriented to a large extent. This means that maturity assessments focus on whether different project management processes are defined, established, applied, controlled and continuously improved (Bushuyev and Wagner, 2014). In this way, they should provide resources to determine the steps to be taken, tasks to be completed and sequence events to achieve meaningful and measurable results, and help companies to compare explicit project management competencies to the standard and each other (Judgev and Thomas, 2002; Judgev and Müller, 2005; Mullaly, 2006). By comparing the results of maturity assessment with descriptions in the maturity model, organizations can gain insight into their strengths and weaknesses and determine the priorities of their activities to make improvements (Kwak and Ibbs, 2002; Demir and Kocabaş, 2010). Any model chosen to measure project maturity must highlight a logical path for progressive development, i.e. create a strategic plan to strengthen project management in the organization (Andersen and Jessen, 2003). To do so, several specific uses of maturity models are distinguished (De Bruin et al., 2015; Maier et al., 2009; Fraser et al., 2002): (1) descriptive assessment of the current state where the capabilities for the subject in scope are evaluated in relation to the given criteria (the maturity model is used as a diagnostic tool and assigned maturity levels disseminated to internal and external stakeholders); (2) prescriptive – maturity model shows how to determine the desired maturity status and provide guidelines for measuring the improvement (specific and detailed directions of action are suggested); (3) comparative - maturity model allows internal and external benchmarking (with enough historical data from a large number of participants of the assessment it can be compared to maturity levels of similar business units and organizations). Project management maturity of an organization may be depicted by a (1) number of maturity levels following the logic that maturity develops in time through certain steps or stages (ladder-based models like CMM, CMMI, IPMA Delta, P2MM, OPM3, P3M3...), (2) percentage to allow more differentiation in describing the necessary project

management competencies shown as a spider web-diagram (e.g. Maturity Model of the Project-Oriented Company), and/or (3) bar chart (e.g. Project Management Institute) (Anderssen and Jessen, 2003). Usually, the models include areas like institutionalization of project management within the organization, support of the top management, project management related activities of human resource development, the availability and consistent application of a project management terminology and competencies for project, program or portfolio management within the organization (Andersen and Jessen, 2003). Also, to assess how mature the organization is, the maturity models include basic elements such as description of the level of maturity for the assessor to know what to look for within the company, in order to determine the level of maturity (usage of more elements increases the accuracy with which the assessors determine the company's maturity and keep the consistency of the measurement); roles (describing the functions of individuals who should be responsible for executing certain activities) and competencies (minimum level of knowledge and skills for individuals to be able to carry out the activities they are responsible for); referent domain and process areas (scope being evaluated, assessing the extent to which maturity model describes the domain of project management) and estimation methods (how to carry out the assessment of a certain requirement and how maturity levels are assigned to each element of the reference domain model) (Hammer, 2007; Ofner et al., 2009). According to Simonsson et al. (2007), a good model for maturity evaluation must also be valid, reliable and cost-effective, and Becker et al. (2009) further add an empirical foundation, a software tool support, standardization, flexibility/adaptability, comparability, certification, detection of potentials for improvement and evidence of correlation between the maturity and performance model.

### **3. PROJECT AND PROJECT MANAGEMENT SUCCESS, PROJECT SUCCESS CRITERIA AND CRITICAL SUCCESS FACTORS**

#### **3.1. Clarification of the key terms**

Project and project management success are some of the most common topics in the field of project management, but there are still no generally accepted definitions (Shenhar et al., 2001). However, regardless of the level of interconnection, the term project success is considered different from the term project management success. While the first is measured against the overall objectives of the project, the second is measured against the traditional gauges of performance such as completing a project within time, cost and meeting quality/performance (scope) (De Wit, 1988; Jugdev and Müller 2005). Also, due to the fact that the concept of project success remains vague and ambiguous, and a broader consensus on the definition has not been reached, it is also important to know there is a difference between project success criteria as the measures by which success or failure of a project or business will be judged, and critical success factors as those inputs to the management system that lead directly or indirectly to the success of the project or business (Cooke-Davies, 2002). Project success criteria may, therefore, refer to a group of principles or standards used to determine or judge project success, and critical success factors refer more specifically to conditions, events, and circumstances that contribute to project results (the process itself) (Ika, 2009). Even though sometimes projects are delivered within time, cost and quality, they can still be considered failures (Shenhar et al., 2005), while the others that have exceeded time or cost constraints can still be considered successful (Pinto and Slevin, 1988). This dichotomy is very important because, in terms of this review, it enables us to draw a distinction between articles that discuss success as project management success from those discussing project success while keeping in mind that some researchers use a hybrid acting as a bridge between the two or the term as a synonym or a combination of both.

### 3.2. Research gaps and recommendations

Project management maturity models are based on an assumption that the higher the degree of maturity is obtained, the more advanced the projects will be in terms of project effectiveness and efficiency, with a higher possibility to be completed more consistently and successfully (Cooke-Davies and Arzymanow, 2003; Anantatmula, 2013; Mullaly, 2014; Cleeland and Ireland; Kerzner, 2005). In several previous research, benefits from the maturity models related to the context of project and project management success were found, such as: transparency of the project management structures (Thomas and Mullaly, 2008), improved project management capabilities resulting in better ROI (Demir and Kocabaş, 2010; Qureshi et al., 2009), reduced cycle development time (Griffin, 1997), better organizational performance (Torres, 2014; Yazici, 2009), and better project performance in software development (Jiang, et al., 2004). Still, there is not enough empirical proof that the level of maturity significantly affects project success or correlates with success dimensions on the project management level (Besner and Hobbs, 2008), although a number of benefits from the maturity models were generally accepted (Hillson, 2003; Andersen and Jessen, 2003). Past research efforts did not find evidence of project management maturity's influence on: success of an organization (Grant and Pennypacker, 2006); project success based on cost and schedule performance (Ibbs and Kwak, 2000; Jugdev and Thomas, 2002; Besner and Hobbs, 2013); project performance (Yazici, 2009; Kwak and Ibbs, 2000; Ibbs and Reginato, 2002; Besner and Hobbs, 2008; Backlund, 2014; Mullaly, 2014; Pretorius et al.; Brooks et al.); competitive advantage (Jugdev and Thomas, 2002; Mullaly, 2006), ROI (Ibbs, Reginato and Kwak, 2004), and competency (Skulmoski, 2001). Ultimately, there is minimal evidence supporting that improvements in project management maturity, as it is currently defined, actually result in increased organizational value. From the analysis of the studies that include maturity models and certain aspects of project success, several conclusions and research gaps were identified as follows. First of all, it is of the utmost importance to define how the theoretical construct of the project management maturity is or should be composed. According to Pennypacker and Grant (2003) the number of maturity models constructed in the last two decades exceeds 30, while Iqbal (2013, in Görög, 2016) estimates it to be at least twice as much. In addition, Cooke-Davies (2007) stressed that environmental differences with regard to the project business might also affect the benefits of applying project management maturity models, as well as the benefits of a certain level of maturity. Even though each organization has to analyze its own results and find the areas in which to benefit from project maturity, it is important that the assessment itself is repeatable, provides consistent measurements and results, and ensures the possibility for some degree of benchmarking with other organizations (Hillson, 2003). Maturity models should go beyond a limited focus on uniform processes and defined standards, and consider the broader organizational and contextual factors that influence the way projects are managed (Mullaly, 2014; Torres, 2014; Andersen and Jessen, 2003). Also, there is still a necessity to understand project management as a strategic enabler (Mullaly, 2006), the degree to which project managers and organizations care about the concept of maturity, since most of the previous research predominantly reveal organizations on a low level (Grant and Pennypacker, 2006; Mullaly, 2006; Pennypacker and Grant, 2003; Yazici, 2009), as well as the evolution and sustainability of project management maturity through time (Grant and Pennypacker, 2006). Therefore, future research should continue to focus on understanding the project management maturity models and their application in different organizations for projects of different level of uncertainty. Furthermore, the methods for the project management maturity assessment have to be standardized, since many of the maturity models are currently based on anecdotal material, case studies or best practices (Jugdev, 2004; McBride et al., 2004), while in most cases their reliability is not empirically justified (Torres, 2014). Finally, a clear understanding of what project success and project management success are must be established in order for researchers

to take these concepts and develop meaningful and measurable constructs in their studies, as well as to justify why they position success as a dependent or independent variable in their contributions. In the last two decades, Atkinson (1999), Cooke-Davies (2002) and Wateridge (1997) argue that the concepts of success and the associated criteria and factors should correspond with the multifaceted concept of project and project management. Still, some researchers conceptualize them as a unidimensional construct concerned with meeting budget, time and quality (Bryde, 2008; Fortune et al., 2011; Müller and Turner, 2007), whereas others consider them a complex, multi-dimensional concept encompassing many more attributes (Atkinson, 1999; Jugdev and Müller, 2005; Shenhar et al., 2001). Research in the area of success criteria and critical success factors has demonstrated that it is impossible to develop an exhaustive list that will meet the needs of all projects due to the fact that success criteria and critical success factors can significantly differ from one project and company to another, and only a limited agreement between the authors on them exists (Wateridge, 1997; Fortune et al., 2011). Since project success is a many-sided phenomenon (Cooke-Davies and Arzymanov, 2003), a broader approach to its assessment would be needed.

#### 4. CONCLUSION

In this paper, we presented a review of relevant work on project management maturity models and project success, as well as project management success. Due to the fact that organizations embraced projects as a way of doing business to achieve and strengthen their competitive position, they require the necessary infrastructure, which includes processes (methods and techniques), governance structures, people's competencies and tools to achieve them successfully. As the development of such infrastructure may take several years, organizations wanting to know their exact position in the process started to perceive project management maturity models as a useful tools for determination, sophistication and optimization of project management, giving a comprehensive approach to strategically develop the organization's project management structures and competence. After the analysis of relevant studies trying to link project management maturity with the project and project management success, the conclusions were drawn and several research gaps for future empirical research in this field were identified.

#### LITERATURE:

1. Albrecht, J. C. and Spang, K. (2014) Linking the benefits of project management maturity to project complexity: Insights from a multiple case study, *International Journal of Managing Projects in Business*, 7(2): 285-301.
2. Anantamula, V. and Rad, P. (2013). Linkages Among Project Management Maturity, PMO, and Project Success, *2013 International Conference on Engineering, Technology and Innovation (ICE) & IEEE International Technology Management Conference*: 1-12.
3. Andersen, E. S. and Jessen, S. A. (2003). Project Maturity in Organisations, *International Journal of Project Management*, 21: 457-461.
4. Atkinson, R. (1999). Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria, *International journal of project management*, 17(6):337-342.
5. Backlund, F., Chronéer, D., and Sundqvist, E. (2014). Project management maturity models – A critical review: A case study within Swedish engineering and construction organizations, *Procedia-Social and Behavioral Sciences*, 119: 837-846.
6. Bargaoanu, A. and Calinescu, L. (2008). Romania as a project-oriented society, *Management & Marketing*, 3(1): 81-94.

7. Becker, J., Knackstedt, R. and Pöppelbuß, J. (2009). Developing Maturity Models for IT Management – A Procedure Model and its Application, *Business & Information Systems Engineering (BISE)*, 1(3): 213-222.
8. Besner, C. and Hobbs, B. (2008). Discriminating contexts and project management best practices on innovative and noninnovative projects, *Project Management Journal*, 39(1): S123-S134
9. Besner, C. and Hobbs, B. (2013). Contextualized project management practice: A cluster analysis of practices and best practices, *Project Management Journal*, 44(1): 17-34.
10. Brookes, N., Butler, M., Dey, P., and Clark, R. (2014). The use of maturity models in improving project management performance: An empirical investigation, *International Journal of Managing Projects in Business*, 7(2): 231-246.
11. Bryde, D. (2008). Perceptions of the impact of project sponsorship practices on project success. *International journal of project management*, 26(8): 800-809.
12. Bushuyev, S. D. and Wagner, R. F. (2014). IPMA Delta and IPMA organisational competence baseline (OCB): New approaches in the field of project management maturity", *International Journal of Managing Projects in Business*, 7(2): 302-310.
13. Cleland, D. I. and Ireland, L. R. (2002). *Project Management – Strategic Design and Implementation*, New York: McGraw-Hill.
14. Cooke-Davies, T. (2002). The “real” success factors on projects, *International Journal of Project Management*, 20: 185-190
15. Cooke-Davies, T. J. and Arzymanow, A. (2003). The maturity of project management in different industries: An investigation into variations between project management models, *International Journal of Project Management*, 21: 471-478.
16. Cooke-Davies, T. J. (2007). Project management maturity models., in Morris, P.W.G. and Pinto, J. K. (Eds), *The Wiley Guide to Project Organization and Project Management Competencies*, New Jersey: Wiley, 290-31.
17. Crawford, J. K. (2006) The project management maturity model, *Information Systems Management*, 23(4): 50-58.
18. De Bruin, T., Rosemann, M., Freeze, R. and Kulkarni, U. (2005). Understanding the main phases of developing a maturity assessment model, *Proceedings of the Australasian Conference on Information Systems (ACIS)*, 8-19
19. De Wit, A. (1988). Measurement of project success, *International Journal of Project Management*, 6(3): 164-170.
20. Demir, C. and Kocabaş, I. (2010). Project Management Maturity Model (PMMM) in educational organizations, *Procedia - Social and Behavioral Sciences*, 9: 1641-1645.
21. Fortune, J., and White, D. (2006). Framing of project critical success factors by a systems model, *International journal of project management*, 24(1): 53-65.
22. Fraser, P., Moultrie, J. and Gregory, M. (2002). The use of maturity models/grids as a tool in assessing product development capability, *Proceedings of the IEEE International Engineering Management Conference*: 244-249.
23. Görög, M. (2016). A broader approach to organisational project management maturity assessment. *International Journal of Project Management*, 34(8): 1658-1669.
24. Grant, K. and Pennypacker, J. (2006). Project management maturity: an assessment of project management capabilities among and between selected industries, *IEEE Transactions on Engineering Management*, 53(1): 59-68.
25. Griffin, A. (1997) PDMA research on new product development practices: Updating trends and benchmarking best practices, *Journal of Product Innovation Management*, 14(6):429-458.
26. Hammer, M. (2007.) The Process Audit, *Harvard Business Review*, 85(4): 111-123.

27. Hillson, D. (2003). Assessing organizational project management capability, *Journal of Facility Management*, 2(3): 298-311.
28. Ibbs, C. W. and Kwak, Y. H. (2000). Assessing Project Management Maturity, *Project Management Institute*, 31(1): 32-43.
29. Ibbs, C. W. and Reginato, J. (2002). *Quantifying the Value of Project Management: Best Practices for Improving Project Management Processes, Systems, and Competencies*, Newtown Square: Project Management Institute.
30. Ibbs, C. W., Reginato, J. M., and Kwak, Y. H. (2004). *Developing project management capability: Benchmarking, maturity, modeling, gap analysis, and ROI studies*, in Morris P. W. G. and Pinto J. K. (Eds.) *The Wiley guide to managing projects*, New Jersey: John Wiley & Sons: 1214–1233.
31. Ika, L. A. (2009) Project success as a Topic in Project Management Journals, *Project Management Journal*, 40(4): 6-19
32. Jiang, J. J., Klein, G., Hwang, H. G., Huang, J. and Hung, S. Y. (2004). An exploration of the relationship between software development process maturity and project performance, *Information & Management*, 41(3): 279-288.
33. Judgev, K. and Müller, R. (2005). A Retrospective Look at Our Evolving Understanding of Project Success, *Project Management Journal*, 36(4): 19-31.
34. Judgev, K. and Thomas, J. (2002). Project management maturity models: A silver bullets of competitive advantage?, *Project Management Journal*, 33(4): 4-14.
35. Kerzner, H. (2001). *Strategic Planning for Project Management using a Project Management Maturity Model*, New York: John Wiley and Sons.
36. Kerzner, H. (2005) *Using the Project Management Maturity Model*, Hoboken: Wiley.
37. Kwak, Y. H. and Ibbs, C. W. (2002). Project Management Process Maturity (PM)<sup>2</sup> Model, *Journal of Management in Engineering*, 18(3): 150-155.
38. Kwak, Y. H., and Ibbs, C. W. (2000). Calculating project management's return on investment, *Project Management Journal*, 31(2):38-47.
39. Maier, A. M., Moultrie, J. and Clarkson, P. J. (2009). Developing maturity grids for assessing organisational capabilities: Practitioner guidance, *Proceedings of the 4th International Conference on Management Consulting - Academy of Management (MCD)*
40. McBride, T., Henderson-Sellers, B. and Zowghi, D. (2004). Project management capability levels: an empirical study, *Proceedings of the 11th Asia-Pacific Software Engineering Conference*: 56-63.
41. Mullaly, M. (2006). Longitudinal analysis of project management maturity, *Project Management Journal*, 36(3): 62-73.
42. Mullaly, M. (2014) If maturity is the answer, then exactly what was the question?, *International Journal of Managing Projects in Business*, 7(2): 169-185.
43. Müller, R., and Turner, R. (2007). The influence of project managers on project success criteria and project success by type of project, *European management journal*, 25(4): 298-309.
44. Ofner, M. H., Hüner, K. M. and Otto, B. (2009.) Dealing with Complexity: A Method to Adapt and Implement a Maturity Model for Corporate Data Quality Management, *Proceedings of the Americas Conference on Information Systems (AMCIS)*: 1-12.
45. Pennypacker, J. S., and Grant, K. P. (2003). Project management maturity: An industry benchmark, *Project Management Journal*, 34(1): 4-11.
46. Pinto, J. K., and Slevin, D. P. (1988). Project success: Definitions and measurement techniques, *Project Management Journal*, 19(1): 67–72.
47. Pretorius, S., Steyn, H., and Jordaan, J. C. (2012). Project management maturity and project management success in the engineering and construction industries in Southern Africa, *South African Journal of Industrial Engineering*, 23(3):1-12.

48. Qureshi, T. M., Warraich, A. S., and Hijazi, S. T. (2009). Significance of project management performance assessment (PMPA) model, *International Journal of Project Management*, 27(4): 378-388.
49. Shenhar, A. J., Levy, O. and Dov, D. (2001). Project success: A multidimensional Strategic concept, *Long Range Planning*, 34(6): 699-725.
50. Shenhar, A. J., Dvir, D., Guth, W., Lechler, T., Milosevic, D., Panatakul, P., Poli, M. and Stefanovic, J. (2005). *Project strategy: The missing link*, in Shenhar et al. (Eds), Linking project management to business strategy, Newton Square: Project Management Institute, 57-75.
51. Simonsson, M., Johnson, P. and Wijkström, H. (2007). Model-based IT Governance Maturity Assessment with CobiT, *Proceedings of the European Conference on Information Systems (ECIS)*: 1276-1287.
52. Skulmoski, G. (2001). Project maturity and competence interface, *Cost engineering*, 43(6): 11-18.
53. Thomas, J. and Mullaly, M. (2007). Understanding the value of project management: First steps on an international investigation in search of value, *Project Management Journal*, 38(3): 74-89.
54. Toffler, A. (1984). *The adaptive corporation*, London: McGraw-Hill.
55. Wateridge, J. (1997). Training for IS/IT project managers: a way forward, *International Journal of Project Management*, 15(5): 283-288.
56. Wateridge, J. (1998). How can IS/IT projects be measured for success?, *International journal of project management*, 16(1): 59-63
57. Yazici, H. J. (2009). The role of project management maturity and organizational culture in perceived performance, *Project Management Journal*, 40(3):14-33.

# IMPORTANCE OF CONTINUOUS RESEARCH OF EMPLOYER'S NEEDS IN VIROVITICA COUNTY FOR ADEQUATE WORKFORCE STRUCTURING

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## **ABSTRACT**

*The current economic environment of the globalized market requires employers to carefully consider all aspects of their business. One of the key aspects is certainly the workforce and the present and future needs of the business entity for the workforce. Every entrepreneur considering his long-term strategy should also take into account the future needs he will have for work force in the short term, but equally in the medium and long term. Regional self-government units are the founders of educational institutions offering high school education, but through their scholarship policy they can also influence the stimulation / discouragement of highly educated staff in their area. They are therefore obliged to align their educational programs with the current labor market. If a regional self-government unit wishes to be in the service of all entrepreneurs who carry out their business activities in the area of a county, they would have to listen to the needs of these entrepreneurs as employers as to which human resource structure they will need in future periods in order to expand and improve their business. The aim of the paper is to investigate the current and future needs of employers from the area of Virovitica County (focusing on the analysis of the level of education and the profession of employees) and their impact on the creation of education policy and then the structure of the labor force and the level of employment / unemployment in the future. The research was conducted in the period from January to April 2019, and based on research results and recommendations, Virovitica County will have the opportunity to create and guide development and education policy in the next 5-10 years.*

**Keywords:** *employer's needs, work force structure, education policy, market research*

## **1. INTRODUCTION**

People are carriers of differentiation of enterprises, and their knowledge, abilities, skills and competence are the key component of any organization. All property, other than humans, is inert and requires human application to create additional value. Therefore, it is clear that the basic task of every modern organization is to attract and retain the best people. In order to achieve competitive advantage, the importance of labor competitiveness is emphasized, and its strongest determinant is definitely the education system of the country. The current economic environment and the eminent decrease of the inhabitants on the territory of the Republic of Croatia, and in particular its interior (which also includes the Virovitica County), further emphasizes the problem of finding adequate personnel. Therefore local self-government units, which are also the founders of educational institutions offering high school education, should necessarily direct the staff to the areas that are in the market in deficit and are therefore in need



of developing entrepreneurship in the region and the economy in general. Likewise, it is also necessary to activate measures to discourage certain occupations in order to reduce the number of such personnel, especially given the fact that the number of inhabitants affected by the Republic of Croatia has been reduced in the last 20 years. From the aforementioned, there is a visible link between managing the education system and managing human resources in organizations. However, it raises the question of how to adequately manage the education system to serve as a measure to improve the competitiveness of economic entities and the economy as a whole.

## **2. IMPORTANCE OF MANAGING HUMAN CAPITAL FOR COMPETITIVENESS OF THE COMPANY**

The human factor is becoming increasingly important. The significance of human resources is emphasized in the first half of the 20th century, when the importance of motivation, informal relationships and leadership style has been recognized, and official literature begins with significant analysis of this topic (Blažević, Špoljarić, Britvić, 2014). Many authors have already emphasized the importance of constant investing in employees at an earlier stage, so in the 18th century Adam Smith emphasized the importance of individual education for society as a whole, and in the 19th century, Karl Marx put expertise and craftsmanship as the first factor in the analysis of productivity factors. Barro and Sala-i-Martin (1995) also introduced a somewhat deeper analysis and demonstrated that the level of education of the workforce (measured in years of education) and the separation of the public education sector is highly correlated with the growth rate of real per capita income, while Benhabib and Spiegel (1994) found that the level of education contributes to economic growth, mostly with the speed of acceptance and dissemination of new technologies (Bejaković, 2006: 402). Although the study of the importance and the role of knowledge can be studied further, the first scientifically tried to put knowledge, experience and skills of employees into some frameworks was Frederick Taylor who published the work "The Principles of Scientific Management" in 1911. Joseph Schumpeter of 1934 in his work "Theory of Economic Development", studying economic changes, claimed that "recombination" of knowledge is important for the emergence of new products (Bontis, 2002). However, only in the 20th century, research is aimed at demonstrating the link between education and economic performance, emphasizing the importance of the role of "human capital" and investment in it in achieving the goals of economic development (Bahtijarević-Šiber, 1998: 121). Thus, the concept of human resource management implies "a series of interconnected activities and tasks of management and organizations aimed at ensuring the adequate number and structure of employees, their knowledge, skills, interests, motivations and forms of behavior needed to achieve the current, developmental and strategic goals of the organization" (Bahtijarević-Šiber, 1999: 16). Economic theory emphasizes the importance of expertise and knowledge of employees for achieving competitive advantage and economic growth (Aghion and Howitt, 1998). Theoretically, the importance of development and management of career development for the organization's capital is argued as the basis for creating greater competitive advantage of the organization (Vemić-Đurković, Marić, Đurković, 2011: 193) therefore it is, in dynamical economical environment, development of employees and gaining of new best employees from the market a constant process that an employer needs to start. McCourt and Eldridge (2003: 2) define managing human resources as "a way in which organizations manage their staff and affect their development and specialization". Therefore, it can be concluded that employee education and investment in their training are positively related to the development of the organization (Meier and Rauch, 2000), but also the economy as a whole. Nowadays, education plays a very important role in improving the quality of services, and improving strategic business success factors is primarily through better education and human resources management (Heskett, 1988).

The relationship between career management and planning at the organization level of a clear court gives two Baruch's strategic approaches - two distinctive strategies (Baruch, 2004: 27) vertical integration and horizontal coherence. Career development of each individual is taking place within the working and wider social environment (Babić, Kordić, 2011: 251), and based on the strategy of vertical integration are identified the needs of the human resources of the organization. Due to the lack of career management of employees in organizations, there is no optimal investment in competency development, no promotion in the profession and hierarchy within the organizational structure based on competence, no optimal business results for organization and sustainable success (Drljača, 2012: 254).

### **3. THE ROLE OF LOCAL SELF-GOVERNMENT UNITS IN CREATING THE EDUCATION SYSTEM AND CREATING A BETTER ECONOMIC ENVIRONMENT**

Human capital is the key determinant of competitiveness and economic development. Educational institutions and the level of education of the population influence the creation of human capital and the strengthening of social benefits. Thus Porter (1990, 628) clearly states that education and training in the long term improves the economy and the lives of citizens. Education has a significant impact on finding employment easier, mitigating long-term unemployment, reducing social welfare spending, and redirecting individuals to programs to stimulate economic development (Bejaković, 2006). Such development of human capital produces positive externalities (externalities), and within the economy, new knowledge is also being created (Straubhaar, 2000), which is why the overall economy is progressing better. Better educational structure of the population and employees and lower government expenditures improve the attractiveness of the country for foreign investors (Sachs, Zinnes and Eilat, 1999). All this has a reversal effect on the increase of educational requirements and stimulates the competitiveness of the economy (Bejaković, 2006). Education undoubtedly provides adverse non-market effects but also improves employability and competitiveness of the labor force (Bejaković, 2006). It is well known that the educational system in Croatia is traditionally rather rigid, and its quality is influenced by states, teachers, administrative staff, employers, students and other stakeholders, mostly professional groups. Although a large number of authors (Benhabib and Spiegel, 1994, Barro, 1998) claim that return on investment in education is greater than the return on any other investment, it is not a guarantee of economic development. Namely, the work force may be insufficient or inadequately educated. For this reason, educational systems must not encourage the acquisition of knowledge and skills related to certain tasks, but should instead focus on the development of decision-making skills and problem solving. Such education can influence the productivity and competitiveness of the national economy and improve living standards (World Bank, 2002). The educational structure of the population and the employees is in line with the economic needs is a crucial determinant of competitiveness and economic development (Bejaković, 2006). For this reason, the local self-government unit continuously analyzes the needs of the economy, to provide timely interventions in the education system with adequate workforce compatible with the needs of the market, thus affecting the development of the economy.

### **4. EMPIRICAL RESEARCH ON THE FUTURE NEEDS OF EMPLOYERS FOR THE STRUCTURE OF THE WORK FORCE IN VIROVITICA COUNTY**

The aim of empirical research of future employers' needs was to get answers to what current needs of the Virovitica County labor market are and how employers see the need for future labor force in the short term or in the next year. Likewise, the aim of the research was to point out the needs of the mid-term and long-term period from the point of view of employers who participated in the research. The survey was conducted from January to April 2019, on a sample of 109 respondents.

The respondents were all trading companies, trades and institutions from the area of Virovitica County, which according to the data of the Croatian Chamber of Commerce currently active 1554<sup>1</sup>. According to the data of the Croatian Pension Insurance Institute, the total number of registered employees in Virovitica County on 31 March 2019 amounted to 20 816<sup>2</sup> employees. Respondents who participated in the research have a total of 2,365 employees, accounting for 11.36% of total employees in Virovitica County. The structure of the employed with all employers surveyed was as follows:

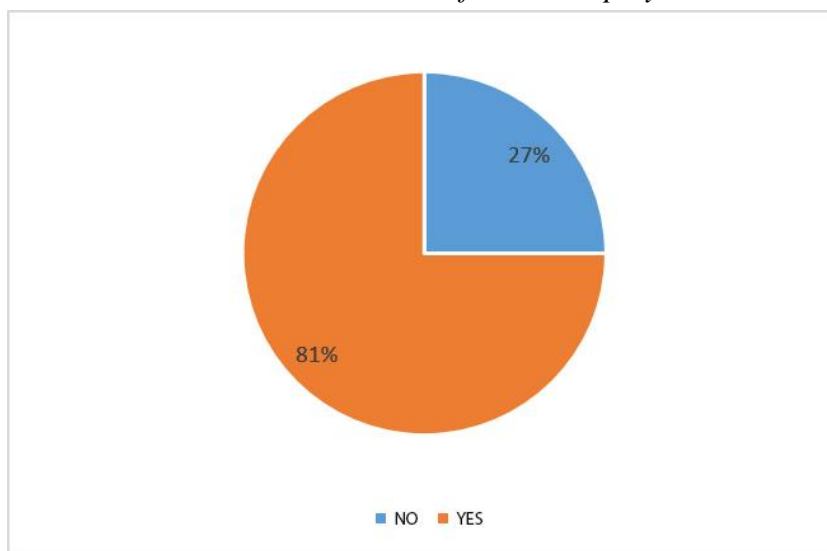
*Table 1: Educational structure of employees in respondents*

<b>TOTAL</b>	unskilled work force	high school educated work force	university educated workforce	Masters and PhDs
<b>2 365</b>	345	1 446	547	27
<b>100%</b>	14,6%	61,2%	23,1%	1,1%

*Source: created by the authors*

When asked whether they have the need for workers now, or if they would have adequate workforce available at the present time, if you would hire additional staff, 81% of respondents responded positively.

*Picture 1: Current need for new employments*



*Source: created by the authors*

Responses to respondents are directly correlated with currently open calls for vacancies, which are dated 8 May 2019 in the area of Virovitica County there were altogether 85 open vacancies. When it comes to the structure of the employees according to the highest level of education currently in need of employment, if available in the labor market, the structure would be as follows:

*Table 2: The educational structure of employees for which employers currently have need*

<b>TOTAL:</b>	unskilled work force	high school educated work force	university educated workforce	Masters and PhDs
<b>594</b>	120	374	98	2
<b>100%</b>	20,2%	63%	16,5%	0,3%

*Source: created by the authors*

<sup>1</sup> <https://www.hgk.hr/documents/aktualna-tema-poslovnj-subjekti-po-zupanijama5a9e9a2f40e6c.pdf> (10th May 2019)

<sup>2</sup> [www.hzmo.hr](http://www.hzmo.hr) (8th May 2019)

From the stated needs for employment, according to the required professions and the level of education, the structure of the currently sought jobs was as follows:

*Table 3: the structure of the required high school educated work force*

<b>Occupation high school educated work force</b>	<b>Number of workers requested</b>
any type of high-school profession	26
driver	20
nurse	19
carpenter	20
builder	16
waiter	17
cook	16
economical technician	24
plumber	13
gas and central heating installer	12
wood technician	12
engineering technician	12
carpenter	12
CNC operator	11
car mechanic	11
construction technician	12
baker	10
other	111
<b>TOTAL</b>	<b>374</b>

*Source: created by the authors*

Table no. 3 shows the most sought-after secondary vocational qualifications for which employers currently need, and if available at the labor market, they could immediately employ them. Table no.4 shows the structure of the requested employees of the Higher Professional Qualifications. From current needs for masters and doctors of science, current needs account for 0.3% of total respondents' responses, referring to the profession of electrical engineering and computing.

*Table 4: the structure of the required university educated work force*

<b>Occupation university educated work force</b>	<b>Number of workers requested</b>
Physician	14
Building	10
Pharmacy	11
Wood technology	10
Engineering	10
Electrotechnics	10
Computer Science	7
Graphic Artists	3
Nutritional Technology	2
Economy	4
Law	2
Architecture	2
Journalism	1
other	12
<b>TOTAL</b>	<b>98</b>

*Source: created by the authors*

If the data of the Croatian Employment Bureau are being viewed, the number of vacancies and active advertisements in the area of Virovitica County is 85, while since the beginning of this

year 965<sup>3</sup> job advertisements have been opened. It should be noted that all employers who are in need of employment do not publish tenders through the Croatian Employment Bureau, but try to find workers through other channels. Data from the Croatian Employment Bureau fully correlate with the data obtained through empirical research, as the largest number of competitions related to simple service occupations in construction, agriculture and manufacturing industries. If we look at the current structure of the unemployed in the area of Virovitica County, the total number of unemployed persons registered with the employment office on 31st March 2019 amounted to 5164 unemployed persons. Out of that, 140 persons had completed a degree, a master's degree or a doctorate. The largest number of unemployed persons with a graduate degree was 36 graduate economists, 16 graduate lawyers, 14 graduate agronomists, which represents an extremely large deviation from all other professions with a maximum of three unemployed and usually are people who do not wait for a job for a significant amount of time. When it comes to a higher level of vocational qualification with a first degree in vocational or university studies, there are currently 183 unemployed, most of whom are attorneys currently with 18 unemployed, and agricultural engineers with 12 unemployed persons. The situation with the unemployed persons who completed high school education, as of 31.3.2019 there are currently 2979 unemployed persons. Of these most notable are 324 sellers, 166 economic officers, 143 administrative officers, 70 commercialists, 55 economists, 61 high school graduates, 106 chefs, 61 chefs, 50 waiters, 54 hairdressers, 30 cosmetologists, 49 agricultural technicians, 89 farmers and forestry workers, 34 florists, 38 wood technicians, 30 carpenters, 36 auxiliary carpenters, 59 saws and tailors, 18 forestry technicians, 16 food technicians, 13 mechanic technicians, 29 electrical engineers, 14 nurses, 13 technicians, 12 computer technicians etc.. Significant number of unemployed people are left to only persons with completed elementary school or without elementary school and currently there are 1862 such persons<sup>4</sup>. One of the aims of the research was to predict the future needs of employers for workplaces according to their forecasts for a year, and then required to try to predict the need for the next 5-7 years. A significant part of employers could have provided their predictions with fairly accurate results for the next year, and for five to seven years, more than 30% of employers concluded that it was about too long period of time in question to give their predictions. Such responses make a conclusion that can be observed through two dimensions:

- A significant proportion of employers do not have a long-term strategy of hiring and planning human resources, which has a profoundly negative effect on their competitiveness and long-term viability.
- Business environment in the Republic of Croatia, and consequently in Virovitica County, is extremely unstable and it is very difficult to work out planning indicators and overlook the future directions of business

Entrepreneurs who have clearer strategies and vision for future human resource management, predictions of future needs, were as follows:

*Table following on the next page*

<sup>3</sup> <https://statistika.hzz.hr/Statistika.aspx?tipIzvjestaja=4> (8th May 2019.)

<sup>4</sup> <https://statistika.hzz.hr/Statistika.aspx?tipIzvjestaja=1>

*Table 5: employers' predictions of the needs of high-school educated work force in the next year*

<b>Occupation high school educated work force</b>	<b>Number of workers requested</b>
electricians	10
nurse	10
tailors and upholsterers	24
driver	11
carpenter	12
builder	13
waiter	13
cook	12
economical technician	16
plumber	5
lathe operator and machinists	11
sellors	9
wood technician	8
engineering technician	7
carpenter	6
CNC operator	4
car mechanic	5
construction technician	7
baker	3
other	41
<b>TOTAL</b>	<b>227</b>

*Source: created by the authors*

Out of professions with college and university education, most employers expressed the need for civil engineers, mechanical engineers, electrical engineers, computing, pharmacy and economics engineers. There is also an interest in doctoral medicine, foreign language teachers and educators, primarily in English and German. Speaking about the prediction period in the next 5-7 years, the situation is quite similar in terms of poor predictability of future needs, but employers who were able to foresee future needs were the following:

*Table 6: employers' predictions of the needs of high-school educated work force in the next 5-7 years*

<b>Occupation high school educated work force</b>	<b>Number of workers requested</b>
electricians	12
tailors and upholsterers	30
driver	6
nurse	5
carpenter	37
builder	11
waiter	11
cook	15
economical technician	21
plumber	15
lathe operator and machinists	23
sellors	12
wood technician	16
ICT technician	8
carpenter	8
CNC operator	4
forestry technician	20
construction technician	13
agricultural technician	20
other	34
<b>TOTAL</b>	<b>321</b>

*Source: created by the authors*

Of the professions with a university degree, respondents to the survey responded mostly to the predictions for the next year, meaning that the most current profession was the profession of STEM area, ie engineers of construction, mechanical engineering, electrical engineering, computing, physician, pharmacy and economics.

## 5. CONCLUSION

Based on the survey of the situation and structure of employment / unemployment in the area of Virovitica Podravina County, there is a noticeable disparity between the labor supply of the labor market and the labor force needs expressed by the employers. For some occupation such as drivers, car mechanics, plumbers, cooks, waiters, there is a certain need, while for those very jobs there is a significant number of unemployed people who cannot find a job. The above indicates a deeper disorder and illogicality that is the specificity of the Croatian society with a not so long tradition of market economy. The reluctance of a person to change their place of residence and daily migration on a business trip longer than 20 kilometers for a significant number of people will be an insurmountable obstacle to finding an adequate job. On the other hand, insufficient awareness of employers that the worker is not a commodity and that adequate work demands and adequate compensation in the form of wages with the total contributions paid, paid overtime, travel costs, is still a good deal of goodwill for a significant number of employers unilaterally determined solely on his side. The work is not appreciated in a sufficient extent and it is still not a resource that is key to the quality and success of any business in any business to do exist. In the Croatian economy as a whole and consequently in the economy of Virovitica County, there is a noticeable trend of seasonality in such a way that during the summer months and the tourist season there is a significant change in the image of the labor market, because a very large number of persons find employment during the season and sufficiently ensure the out-of- during the winter months and therefore refuses the jobs and does not accept them at less paid places in the place where they live in the winter. The social welfare system is arranged in a way that does not stimulate job finding and is based on very poor criteria and is in no way consistent with the market economy in a way that encourages unemployed people to find employment rather than to disadvantage them. The system of education is not sufficiently aligned with the labor market and demands rooted in changes in ways of discouraging certain occupations in order to avoid future disparities between supply and demand for work force. Some professions and occupations need to be further encouraged through the opening of new schools, the policy of scholarships and routing students from elementary school age. Secondary education must become a standard below which it is not allowed to go and it is important to proactively act so that all persons, regardless of material opportunities, have the opportunity to complete a minimum of high school education. According to data from the analysis of the structure of employment and the needs for work places in the area of Virovitica County, it can be concluded that educated politics and endeavors should necessarily be directed towards stimulation of secondary vocational education related to wood technology such as carpenters and wood technicians, CNC operators, representing an interdisciplinary area, construction professionals such as carpenters, masonry, mechanics, welders, lathes, and car electricians and repair and maintenance experts and complex electronic equipment. For professions that require higher education, in the first place, those are branches of science that fall into the STEM field, i.e. natural science, engineering, information technology and mathematics. Additionally, the studies of medicine and foreign languages, especially English and German, are of particular importance. From the professions that necessarily need to be distributed through the scholarship policy and reduce the number of enrollment quotas in secondary schools, it primarily applies to economists, commercialists, salespeople, agricultural technicians and hairdressing professions.

Higher education also requires the reduction of certain quotas that can be regulated through scholarship policies, and this includes, in the first instance, economics, law and teacher professions that are clearly not needed to the extent that is currently being predicted or forecasted in some future mid-term and long-term period.

#### LITERATURE:

1. Aghion, P., Howitt, P. (1998.), *Endogenous Growth Theory*, Cambridge, Mass, The MIT Press.
2. Babić, L., Kordić, B. (2011). Nacionalna kultura i karijerni razvoj, 8. Naučni skup sa međunarodnim učešćem Sinergija, 250-256
3. Barro, J. R. (1998.), *Determinants Of Economic Growth, A Cross-Country*
4. Barro, J. R., Sala-i-Martin, X. (1995.), *Economic Growth*. New York, McGraw-Hill.
5. Baruch, J. (2004). *Managing Careers: Theory and Practice*, Harlow, Financial Times, Prentice Hall.
6. Benhabib, J., Spiegel, M. (1994.), *The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data*, *Journal of Monetary Economics*, 34 (2): 143 -173).
7. Bejaković, P. ( 2006) Uloga obrazovnog sustava u postizanju zapošljivosti i konkurentnosti radne snage u Hrvatskoj, *Društvena istraživanja*, 3 (83), Zagreb, str. 401: -425).
8. Blažević, Z., Špoljarić, M., Britvić, J. (2014) Influence of career management system on customer relationship management in higher education, *Economic and Social Development 5th International Scientific Conference) Book of Proceedings / Primorac, D. Jovancai, A. (ed). – (ISBN: 978-953-6125-08-1) Belgrade, Development and Entrepreneurship Agency Megatrend University (str. 518-528)*
9. Bontis, N. (2002). *World Congress on Intellectual Capital Readings*, Butterworth Heinemann KMCI Press, Boston.
10. Bahtijarević-Šiber, F. (1998). Informacijska tehnologija i upravljanje ljudskim potencijalima, *Slobodno poduzetništvo*, Zagreb, 7/98., 121-130
11. Bahtijarević-Šiber, F. (1999). Menadžment ljudskih potencijala, Zagreb, Golden marketing.
12. Drljača, M. (2012). Upravljanje karijerom u funkciji kvalitete sustava upravljanja, *Zbornik radova VII. znanstveno-stručne konferencije s međunarodnim sudjelovanjem Menadžment i sigurnost, Upravljanje ljudskim resursima i sigurnost, Hrvatsko društvo inženjera sigurnosti, Čakovec, Sveti Martin na Muri*, 253-264.
13. Heskett, J. (1988). *Management von Dienstleistungsunternehmen (Management of service enterprises)*. Wiesbaden: Gabler.
14. McCourt, W., Eldridge, D. (2003). *Global Human Resource Management*, UK, Cheltenham, Edward Elgar,
15. Meier, M. G., Rauch, E. J. (2000.), *Leading Issues In Economic Development*, New York i Oxford, Oxford University Press.
16. Porter, M. (1990.), *The Competitive Advantage of Nations*, London: Macmillan.
17. Straubhaar, T. (2000.), *International Mobility of the Highly Skilled: Brain Gain, Brain Drain or Brain Exchange*, Hamburg: Hamburg Institute of International Economics, Discussion Paper No. 88, <http://www.hwwa.de/>
18. Sachs, J., Zinnes, C., Eilat, Y. (1999.), *Benchmarking competitiveness in transition economies*, Harvard Institute for International Development, Washington DC, United States Agency for International Development.
19. Vemić-Đurković, J., Marić, R., Đurković, T. (2011). Analiza razvoja menadžerske karijere u Srbiji, *Industrija, Univerzitet EDUCONS, Sremska Kamenica, Fakultet poslovne ekonomije*, 39/4, 193-208



20. World Bank (2002.), *Constructing Knowledge Societies: New Challenges for Tertiary Education*, Washington, D. C., World Bank.

## BALANCE SHEET MODEL FOR SMALL ECONOMIC ENTITIES

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### **ABSTRACT**

*Financial reporting still raises doubts and concerns among large and small entrepreneurs. When analyzing financial statements, the recipient often asks whether the current comprehensive forms of financial statements are not too vague and confusing. Data disclosed in the financial statements are often not easily read by ordinary users or even analysts. Maybe now it is worth looking for other new solutions that will allow business managers to obtain basic financial information from the financial reports in a quick and immediate way. The increase in competition and financial crises caused the largest number of bankruptcies in the group of small and medium enterprises. And it is to these small economic entities that it is worth facilitating the process of analyzing financial data. For this group of enterprises, it is worth highlighting in the financial statements those data that may inform about risks in conducting and continuing further operations. The article presents a balance sheet model for small business entities. Its layout and formula is designed to lighten the picture of the company's financial situation and provide the most important information on the company's financial safety.*

**Keywords:** *SMEs, balance sheet, financial security*

### **1. INTRODUCTION**

Financial reporting is one of the main accounting functions, as emphasized by C. Paczuła (Paczuła, 2005, p.232), stating that "both theoreticians and practitioners draw attention to one of the main accounting functions in the unit, what is the reporting function". Also E. Walińska (Walińska, 2012, p.28) stated that "the reporting function plays the most important role in the information system of the economic entity". At the same time, it is recommended that the reports prepared and presented should be useful in assessing the management of the unit and management's responsibility for the resources entrusted, and should enable economic decisions to be made. How to prepare a report in such a way that the information is legible, transparent for investors, etc. and serves management purposes for management? Over the years, the information content and the construction of financial reports have changed significantly. Their shape and compactness were not detailed in the regulations and therefore their content resulted from the information needs of recipients (Jędrzejewski et al. 2012, pp.14-28). Does the intelligibility of information mean that the data presented in the financial statements should be easily used in the process of making business decisions by their users? According to the author, the report should contain only such information that is necessary for external users and they will make the decisions they need, while the information for internal decisions is a completely different kind of report.

### **2. REVIEW OF THE LITERATURE**

Currently, the debate on the adequacy of disclosed information by companies is growing. Among the possible available funds, management reports are important to enable investors and other users to formulate a reasoned opinion on the company operations and situation (García,

2012, pp.12-16). The data presented in the financial statements are hard to read for ordinary users, and for many analysts a bit unclear (Gotti 2016, pp. 452-463). These authors believe that they are illegible and provide low-quality information, even the adoption by German or Spanish companies IFRS does not improve their readability (Chen et.al 2010, pp.220-278; Van Tendello, Vanstraelen 2005, pp.155-180; Ahmed et al., 2013, 1344–1372., Palea, 2017, pp.1-14;, Caleo, 2007, pp.148-178). Readability of reports and short information flow could protect many entities from the risk of bankruptcy (Chłodnicka, Zimon, 2017, pp. 309-318, Sadowska, 2018, pp. 225-246). This is particularly true for small business entities that do not benefit from simplifications. The structure of entities which in the years 2010-2017 declared bankruptcy including their legal form was presented as follows: sp. Z o.o. (58.4%), natural person (22.6%), joint-stock company (7.8%), general partnership (4.2%), limited partnership (2.6%), cooperative (2.1%), a civil partnership (1.4%), others (0.9%) (Dankiewicz, 2018, p.61). The reasons are different. In general, payment delays and poorly selected short-term receivables management strategy badly affects the financial security of enterprises,(Zimon,Zimon, 2019a, pp.47-51 ; Zimon, Zimon, 2019b,pp.60-73; Zimon, 2018, pp.163-170). For many years, entities that are limited liability companies constitute the largest share among bankrupt entities. Therefore, it is important to look at these smaller business entities to have their information available one that would save them from bankruptcy.

### **3. THE ESSENCE OF ECONOMIC ENTITIES**

The definitions, essence and classification of these smaller entities, i.e. micro, small and medium ones, are presented in table 1.

*Table following on the next page*

*Table 1: Classification of business entities*

Legal act	Criterion	Type of entity
Accounting Act JOL 2019 item 351. Article 3, paragraph 1c, point 1  Art.3 paragraph 1a point 1	did not exceed at least two of the following three values: <ul style="list-style-type: none"> <li>• 10 people - in the case of average annual employment in full-time equivalents,</li> <li>• PLN 3,000,000 - in the case of net revenues from the sale of goods and products for the financial year;</li> <li>• PLN 1,500,000 - in the case of total balance sheet assets at the end of the financial year</li> </ul> they have not exceeded at least two of the following three volumes: <ul style="list-style-type: none"> <li>• 50 people - in the case of average annual employment in full-time equivalents,</li> <li>• PLN 51 million - in the case of net revenues from sales of goods and products for the financial year,</li> <li>• PLN 25 500 000 - in the case of total balance sheet assets at the end of the financial year,</li> </ul>	micro
	they have not exceeded at least two of the following three volumes: <ul style="list-style-type: none"> <li>• 50 people - in the case of average annual employment in full-time equivalents,</li> <li>• PLN 51 million - in the case of net revenues from sales of goods and products for the financial year,</li> <li>• PLN 25 500 000 - in the case of total balance sheet assets at the end of the financial year,</li> </ul>	small
Entrepreneurs Law 2018 item 646 art.7. paragraph 1, points 1, 2, 3	an entrepreneur who, in at least one year of the last two financial years, met all of the following conditions: <ul style="list-style-type: none"> <li>• employed on average less than 10 employees per year and</li> <li>• has achieved annual net turnover from the sale of goods, products and services and from financial operations not exceeding the PLN equivalent of EUR 2 million, or</li> <li>• the total assets of its balance sheet prepared at the end of one of these years did not exceed the PLN equivalent of EUR 2 million</li> </ul>	micro
	an entrepreneur who, in at least one year of the last two financial years, met all of the following conditions: <ul style="list-style-type: none"> <li>• employed annually less than 50 employees and</li> <li>• has achieved annual net turnover from the sale of goods, products and services and from financial operations not exceeding the PLN equivalent of EUR 10 million, or</li> <li>• the total assets of its balance sheet prepared at the end of one of these years did not exceed the PLN equivalent of EUR 10 million</li> </ul>	small
	an entrepreneur who, in at least one year of the last two financial years, met all of the following conditions: <ul style="list-style-type: none"> <li>• employed annually less than 250 employees and</li> <li>• has achieved annual net turnover from the sale of goods, goods and services and from financial operations not exceeding the PLN equivalent of EUR 50 million, or</li> <li>• the total assets of its balance sheet prepared at the end of one of these years did not exceed the PLN equivalent of EUR 43 million</li> </ul>	medium
Annex I to the Regulation of the UNION Committee EUROP (EU) 800/2008	an entrepreneur who met all the following conditions: <ul style="list-style-type: none"> <li>• employed less than 10 employees and</li> <li>• the annual turnover or total balance sheet does not exceed EUR 2 million</li> </ul>	micro
	an entrepreneur who met all the following conditions: <ul style="list-style-type: none"> <li>• fewer than 50 employees and</li> <li>• annual turnover of 10 million euros or</li> <li>• the total annual balance does not exceed EUR 10 million</li> </ul>	small

*Source: author's own study based on the above-mentioned laws*

As shown in the table, the criteria for division according to the Entrepreneurs' Law duplicates the criteria developed in the European Commission Regulation. Different criteria for the division of economic entities are presented in the Accounting Act, and according to these criteria, financial reporting applies. However, when analyzing the above criteria for medium-sized entities defined in other acts, such reporting will apply as for small entities in accordance

with the Accounting Act. Many simplification changes have been introduced, especially for micro and small entities, but here too the application criteria have been introduced. As it follows from art. 7 par. 2b of the current year, a micro, small and an entity may resign from the prudence principle when valuating individual assets and liabilities in the area of impairment write-downs of assets and provisions for known risk, losses and the effects of other events. In turn on the basis of art. 32 par. 7 and 33 par. 1 and art. 39 par. 6 these units may also (the Accounting Act):

- make depreciation or redemption write-offs on tangible and intangible fixed assets according to the rules set out in tax regulations,
- do not create passive accruals of expenses related to future employee benefits, including retirement benefits (Chłodnicka 2018, pp.53-62)].

The above simplifications, however, do not apply to limited liability companies, limited joint-stock partnerships and general or limited partnerships whose all partners with unlimited liability are capital companies, limited joint-stock partnerships or companies from other countries with a legal form similar to those of the companies. The conclusion is that instead of increasing the limits for operating micro and small entities and allow a simplification, it may be worth considering changing the formula of the full report and making changes so that individuals who cannot benefit from simplifications also had easier to prepare, read and analyze financial statements. The submitted financial statements (Lew, 2016, pp.185-215; Sadowska, 2014, pp.61-73) have a negative impact on the information environment.

#### **4. BALANCE SHEET MODEL FOR SMALL ENTITIES**

Doubts about the clarity of informational financial statements caused an attempt to build a new balance sheet formula (table 2).

*Table following on the next page*

Table 2: Information system in the unit balance sheet

ASSETS	LIABILITIES
<b>A BASIC OPERATIONAL ACTIVITY - part A</b>	
<b>A. Fixed assets:</b> - Intangible assets - Tangible fixed assets - Long-term receivables: - Long-term investments <ul style="list-style-type: none"> <li>• Estates</li> <li>• Intangible assets</li> <li>• loans granted</li> </ul> - Long-term prepayments	<b>A. Equity:</b> - Share capital - others, including : Revaluation reserve - Net profit (loss) - profits retained
<b>B. Current asstes:</b> - Inventory - Receivables; <ul style="list-style-type: none"> <li>• trade</li> <li>• other</li> </ul> - loans granted - Money at hand and in bank accounts from operating activities cash in hand and at bank - Settlement of construction contracts - other assets	<b>B. Liabilities</b> <b>- Long-term liabilities:</b> <ul style="list-style-type: none"> <li>• credits and loans</li> <li>• othes</li> </ul> <b>- Short-term liabilities:</b> <ul style="list-style-type: none"> <li>• credits and loans</li> <li>• trade liabilities</li> </ul> - Settlement of construction contracts - Special funds
<b>RETURN TO SECURITIES - part B</b>	
<b>Financial instruments:</b> - Long-term financial assets - Short-term financial assets - Money from trading in securities	<b>Equity:</b> - Financial instruments issued - others, including: • from the revaluation - Net result on trading in financial instruments - retained earnings <b>financial liabilities</b>
<b>Off-BALANCE SHEET INFORMATION - part C</b>	
<b>Assets</b> - Inventory stocks - Interest on overdue receivables - Due payments for principal (fund) - Own shares	<b>Liabilities</b> <b>- Provisions</b> <ul style="list-style-type: none"> <li>• long-term</li> <li>• short-term</li> </ul> - overdue loans - overdue liabilities secured on assets - remunerations not paid on time - overdue liabilities: • public law liabilities <ul style="list-style-type: none"> <li>• trade liabilities</li> <li>• other liabilities</li> </ul> interest

*Source: author's own study*

As it can be seen from the table, the proposed formula consists of three parts:

- A - regarding operating activities.
- B - regarding trading in securities.
- C - related to information that may be a threat to going concern as part of off-balance sheet information.

Part A is the part where only information on operational activities would be presented, which would help entrepreneurs to assess quickly the situation of this activity. In this part, no short-term settlements, both active and passive, have been specified.

It seems that they do not have a significant impact on the assessment of the financial situation, and most of the recipients simply do not see such information, so they can be recognized as other assets or other liabilities. In addition, the provisions of the Accounting Act in the article 39 make passive settlements virtually a non-active item. Important information related to interim short-term settlements is the settlement of long-term contracts, but it can be demonstrated as a separate item. When asked, entrepreneurs who run this type of activity did not know where the settlement of construction contracts is currently being reported. The elimination of a separate item of accrued expenses means that it would be illegible to demonstrate negative goodwill. Negative goodwill - it would be worth considering whether to use international solutions and not to include this value in the balance sheet only as a gain on a bargain acquisition and recognized as a result of acquisition, but only for related entities. Separation of cash separately for operating activities and operations from trading in securities seems to be very clear information. In addition, financial liquidity and net working capital will play a very important role in analyzing the financial security of enterprises. However, for these measures, one needs to pay attention to part C of the balance sheet, i.e. off-balance sheet information. The basic capital from part A is capital injected in the form of cash, goods or shares. The elimination of provisions in Part A will reduce the manipulation of the financial result. Provisions would be included in part C, and at the moment of actual occurrence would become a real obligation. The financial result in part A is a purely operational result. The level of basic capital would be important information, especially for the environment on the company's competitive position. Its high level would raise the company's reputation, which would allow the company to gain an advantage over the competition, the growth and aggressive policy of which strongly impairs the management of the enterprise. Part B would concern investment in securities trading. The specification of this information would belong to the entity, depending on the nature, scope of such transactions. Many entrepreneurs do not have this type of operation, so this part would be zeroed for them, which would be a clearer part of A. Including such instruments together with operating activities may in many cases improve the overall picture of the entity and improve indicators. Trading in securities creates a greater risk. The results created from their turnover may be short-term, due to the various influencing external factors, which affects their value. Such instruments have a varying degree of risk, so this information is not needed at the moment in the main part of the report, that is part A. From interviews and consultations with entrepreneurs it follows that most do not know what is in the balance in their current form, because it's too much. The basic capital from part B is the capital created for the transfer of value through securities. An application of part C to the main part of the report would facilitate a quick assessment. A lot of information can be found in the additional information. The intention of the new formula is to present information in the balance sheet. Additional information is constantly growing, and this causes that often entrepreneurs do not want to explore even the basic part of the report, but only to read additional information. The new formula allows to clearly present possible threat signals as well as the current situation of the business entity. The disclosure in Part C above all may be helpful to the entity, it will mobilize to descend from such positions, it will be possible to react to the deterioration of the assessment results, and it will be possible to find a shorter, faster way to look for the investor. Even an investor who has such information can offer help himself. Inventories, whether receivables shown in part A for which revaluation write-offs have been made do not inform exactly what value in detail for inventories and receivables, the general value is read from the profit and loss account. One could also opt out of revaluation write-offs, and obsolete stocks, overdue receivables or interest on receivables set out in Part C provide detailed information. Then the result on the operating activity would be clean, without artificially created costs. Write-downs would be made at the time of inventory management, expiry of receivables, etc.

Presentation of off-balance sheet items on the side of assets and liabilities can change the quality of the indicators of the assessment of the financial situation. The refinement of individual parts would depend on the given entity. We hope that the formula proposed will be the beginning of a discussion on this subject, as well as changes in financial reporting in Poland and in the world. The US Steel Report of 1920 is a small, 40-page document, while its counterpart from 2012, in the best, had 174 pages, which certainly obscured the information picture. In the report for 2012 there are a lot of different analyzes, charts, financial data exhibits that adorn the report (Lev, Feng 2016, p.4).

## 5. CONCLUSIONS

The accuracy of economic decisions depends on the quality of financial information, mainly derived from financial statements prepared by business or other entities. It happens that among the participants of economic turnover the information presented remains unintelligible. In this respect, it is expected that universal, transparent, readable, short financial reports will be a reliable source of information. Therefore, in order primarily to protect the diverse interests of recipients of this information, it is extremely important to adhere to the quality features that should be met by created information. The proposition of the authors of the article refers primarily to small units that cannot use simplifications in financial statements. Currently, many things are transferred to additional information and explanations. Its volume is growing every year and who actually reads it. The balance sheet model presented in a transparent way features the most important information that the company managers should clearly and legibly receive.

## LITERATURE:

1. Ahmed, S., Neel, M., Wang, D., (2013). *Adoption of ifrs improve accounting quality? Preliminary evidence*. Contemp. Account. Res., pp. 1344–1372.
2. Callao, S., Jarne, J. I., & Lainez, J. A. (2007). *Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting*. Journal of International Accounting, Auditing and Taxation, 16(2), pp. 148–178.
3. Chen, H., Tang, Q., Jiang, Y., Lin, Z., (2010). *The role of international financial reporting standards in accounting quality: evidence from the European Union*. J. Int. Financ. Manage. Account. 21, pp. 220–278.
4. Chłodnicka H. (2018), *System informacyjny a przydatność sprawozdań finansowych*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu z. 513, pp. 53-62.
5. Chłodnicka, H., Zimon G., (2017). *Financial Situation Assessment Dilemmas of Selected Capital Groups* [in:] Proceedings of the 2nd International Scientific Conference: Central European Conference in Finance and Economics (CEFE 2017): September 20-21, 2017: Herľany, Slovak Republic, (ed.) Beáta Gavurová, Michal Šoltés, 2017, Koszyce: TECHNICAL UNIVERSITY OF KOSICE, pp. 309-318
6. Dankiewicz R. (2018). *Zjawisko upadłości przedsiębiorstw w Polsce. Kierunki i przyczyny zmian*, Economic Policy in the European Union Member Countries, Silesion University in Opava p. 61.
7. García, P. (2012). *La supervisión de la información financiera y corporativa de las entidades cotizadas y otros aspectos relacionados*. Aeca, 100, diciembre, pp.12-18.
8. Gotti, G., (2016). *Discussion of Segment Disclosure Quantity and Quality under IFRS 8: Determinants and the Effect of Financial Analysts Earnings Forecast Errors*, The International Journal of Accounting 51, pp. 452–463.
9. Jędrzejewski, S., Urbaszek M., Kowalczyk M., (2012). *Ewolucja systemu rachunkowości polskiej w okresie dwudziestolecia międzywojennego*, SIZ, Łódź pp. 14-28.
10. Lew, G., (2016). *Sporządzanie sprawozdań finansowych*, [w]: Rachunkowość. Zasady i metody. Polskie Wydawnictwo Ekonomiczne, Warszawa , pp. 185-215.



11. Lev, B., Feng G., (2016). *The End of Accounting and the Path Forward for Investors and Managers*, New Jersey, John Wiley and Sons, p.4.
12. *Międzynarodowe Standardy Sprawozdawczości Finansowej*, 2013, SKwP, IASB, Warszawa, MSSF 3.
13. Paczuła, C.,(2005). *Rachunkowość, finanse i bilanse w praktyce przedsiębiorstw*, LexisNexis, Warszawa, p. 232.
14. Palea, V., (2014). *Taxation Are IFRS value-relevant for separate financial statements? Evidence from the Italian stock market*, Journal of International Accounting, Auditing and Taxation 23 (2014) pp. 1–17.
15. Sadowska, B. (2018). *Rachunkowość zarządcza jako element zintegrowanego systemu informacyjnego jednostki gospodarczej*. Zeszyty Teoretyczne Rachunkowości, (98),pp. 225-246.
16. Sadowska, B. (2014). *Znaczenie i warunki stosowania zintegrowanych systemów informatycznych w sferze budżetowej*. Zeszyty Teoretyczne Rachunkowości, (76), pp. 61-73.
17. Ustawa z dnia 29 września 1994 r. o rachunkowości. (Dz. U. 2019 poz.351).
18. Van Tendeloo, B., Vanstraelen, A., (2005). *Earnings management under German GAAP versus IFRS*. Euro. Account. Rev. 14, pp. 155–180.
19. Walińska E., (2012). *Rachunkowość. Rachunkowość i sprawozdawczość finansowa*, Wolters Kluwer Warszawa, p. 28.
20. Zimon, G., (2018). *Influence of group purchasing organizations on financial situation of Polish SMEs*, OECONOMIA COPERNICANA, vol.9, Issue: 1, pp.87-104
21. Zimon G., Zimon D., (2019a). *An Assessment of the Influence of Nominalized Quality Management Systems on the Level of Receivables in Enterprises Operating in Branch Group Purchasing Organizations* . QUALITY-ACCESS TO SUCCESS Volume: 20 Issue: 169 pp. 47-51.
22. Zimon D., Zimon G., (2019b). *The Impact of Implementation of Standardized Quality Management Systems on Management of Liabilities in Group Purchasing Organizations* QUALITY INNOVATION PROSPERITY-KVALITA INOVACIA PROSPERITA Volume: 23 Issue: 1, pp. 60-73.

# IT'S ALL IN THE MIND - UNLEASHING THE POWER OF EMOTIONAL INTELLIGENCE AND ITS ABILITY TO CREATE POSITIVE CUSTOMER MEMORIES

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## **ABSTRACT**

*Interest in customer emotions continues to grow. Much of this interest is focused on the prediction, interpretation and management of customer emotions along the customer's journey. This paper recognises the importance of emotion in the delivery of meaningful customer experiences. It does, however, challenge customer experience practitioners to reconsider their understanding of emotions, the inclusion of emotion in customer journey mapping techniques and encourages them to revisit the concept of customer memory. There are also suggestions for ways customers could develop stronger emotional connections with brands when employees use their skills of emotional intelligence. The paper goes on to outline some of the organisational issues which may prevent employees using their skills in emotional intelligence. The science of emotion and established theories of emotional intelligence are examined in this paper. Ideas are derived from psychology, neuroscience and behavioural science. The paper starts with a new definition of customer experience to stimulate discussion. It concludes with a description of on-going research to test a series of hypotheses.*

**Keywords:** *Customer Experience, Customer Journey Mapping, Emotional Intelligence*

## **1. INTRODUCTION**

“People won’t remember what you did, they won’t remember what you said, but they will remember how you made them feel”. (Evans, 1984, pp. 84). This quote encapsulates the essence of this paper as it offers new ideas for people in customer experience roles should they choose to adopt a scientific approach to their discipline and potentially achieve better results. Within this paper we share two behavioural science theories which give us better insight into decision making (Kahneman, 2011. Verduyn & Lavrijsen, 2015). We also include details of recent findings from neuroscientists (Feldman Barrett, 2017) who have discovered new concepts from observing brain activity which aids our understanding of emotions (Adolphs & Anderson, 2018). The topic of emotion in customer experience continues to gain interest (Swinscoe, 2017) and this is expected to intensify with the emergence of AI and the need for our species to invest further in the development of ‘soft skills’ (Chataway, 2019). While businesses are at different stages of their customer experience management maturity, the ideas included in this paper could apply to all of them. While it is useful for customer experience practitioners to share what they have learned from their experiences in role, it is hoped that this paper triggers a discussion around education in the discipline. It is felt that a thorough understanding of emotion, emotional contagion, memory and emotional intelligence could help organisations design more effective customer journeys and better evaluate present business practices. These are some of the concepts introduced in this paper and it is likely that more discussion will focus on these areas for years to come. Eager to contribute to this discussion, the author has commenced investigations to test hypothesis formulated during the research undertaken for this paper. It is hoped that insight from these tests, and the results themselves will inform changes in common customer experience practices such as customer journey mapping.

## **2. A NEW CUSTOMER EXPERIENCE DEFINITION – TO STIMULATE DISCUSSION**

This definition is intended to stimulate discussion. Its purpose is not to replace the multitude of definitions which already exist. The language used should remind customer experience practitioners of the cognitive processes customers experience. It aims to set out the clear relationship between emotion, thoughtfulness, memory and emotional intelligence. The proposed definition is as follows: “Successful customer experiences are the result of a mutual value held between your customers and your business. These are achieved when customers establish an emotional connection with you and hold only positive memories of your brand. As a consequence of the emotional intelligence you have shown throughout their journey, customers continue to use you willingly as they appreciate your thoughtfulness and perceive that you add value to their life.”. The definition reflects the key points expressed in this paper and it is hoped that it will prompt customer experience practitioners to further investigate the science outlined within it.

## **3. CUSTOMER EXPERIENCE IS EMOTIONAL**

### **3.1. Differentiation through experiences**

The discipline of customer experience was borne out of the idea that consumers had more choice and businesses needed to differentiate in order to grow. (Pine & Gilmore, 1999). Brands were widening their product and service offerings and markets were becoming saturated. (Hyken, 2018). Products and services had become commoditized and weaving an emotional intervention into their offering meant that customers would recognise the valuable distinction the brand offered. Consumer expectations were growing significantly with the expansion of media channels and greater access to information. They were becoming better informed, better connected and more influential. (Webb, 2016) Rather than continue to offer similar products and services, Pine and Gilmore recommended that businesses create experiences for their customers. This triggered the start of the “Experience Economy” and a significant opportunity for brands. It was now time for brands to reevaluate their proposition and design the types of experiences that were difficult to replicate. By ‘taking to the stage’ and ensuring that everyone in the organization was part of the production (Pine & Gilmore, 1999) customers would be more immersed in the experience of the brand. The objective of this immersion was for the brand to create an emotional response from the customer. This would be achieved as the experience would be unexpected and perceived as a positive extension to the product or service. The effectiveness of the experience would be tested [along with feedback surveys] when customers were tempted by a competitor’s offering. If the experience delivered had created an emotional connection between the brand and customer, it was expected that the customer would stay loyal. The loyalty was a reward for the customer feeling involved and valued. (Webb, 2016). Brands benefited when impactful and positive experiences were shared by customers, this became an effective addition to the marketing effort. Equipped with camera phones and global networks, customers held the power to influence the perceived value of an experience in an instant. This put brands under pressure as they strived for positive coverage through happy customers. As Daniels (2018) explains, “Experiences make people happier than possessions” (Daniels, 2018, pp.103). This explains why customers increasingly seek new experiences and create their own. Their ability to connect to others, to express their emotions and carve an identity for themselves continues to escalate. All of this has been aided by technology which facilitates activities such as ‘iphonegraphy’; when anyone with a phone can televise their lives. Not only does this satisfy the instant gratification customers receive from the experience, it also provides social recognition and as a consequence the quest to source experiences worthy of the next Instagram story heightens (Gray, R. 2012).

While Pine and Gilmore focused on the strategic choices organisations need to make to differentiate their products and services, Schmitt (1999) presented similar ideas to marketing teams. Believing that customers were bombarded with promotional messages, Schmitt proposed ‘Experiential Marketing’ as a way for brands to be noticed. Writing in the *Journal of Marketing Management* practitioners were advised to move away from the “engineering-driven, rational, analytics view of the customer” (Schmitt, 1999, pp. 55). Schmitt described how customers were starting to ignore brands that lacked the skill to engage. Customers would pay attention to ‘Experiential Marketing’ as it would stand out in a space filled with noise. Recognising that “most of us think of ourselves as thinking creatures that feel, but we are actually feeling creatures that think” (Taylor, 2019, pp. 23) Schmitt wanted customers to feel connected to the brand. He talked about the development of experiences which “provide sensory, emotional, cognitive, behavioural, and relational values that replace functional values” (Schmitt, 1999, pp. 56). Calling on cognitive science and the ‘philosophy of the mind’ Schmitt advised marketing teams to consider “sensory, affective, creative and physical experiences along with behaviours, lifestyles and social-identity” (Schmitt, 1999, pp. 60).

### **3.2. The Experience (R)evolution**

The “Experience (R)evolution” is now in full flow. (Watkinson, M. 2013. Smith, K. Hanover, D. 2016) Customer expectations and the availability of offerings continue to grow. Customers often choose to switch brands instantly when their experience falls short of their expectations. This puts pressure on brands to meet expectations and occasionally, exceed them. (Webb, 2016). To achieve this, businesses are recruiting more customer experience roles, commissioning more consultancies and investing in software solutions to help them design, deliver and continually improve experiences customers will value.

#### *3.2.1. Sentiment analysis*

When customers value their experiences with a brand they are more willingly to provide repeat business and in some cases they will bring additional business through recommendation. Typically, businesses would ask customers questions at various stages of their journey to understand whether their experience is meeting their expectations. They could do this through quantitative (surveys) or qualitative (interviews) methods but these offer retrospective views, often lack emotional insight and provide superfluous information due to their design and delivery. Recognising the need to understand more about customer emotions and the influence they have on decision making, businesses have started to invest in customer insight through an approach known as sentiment analysis. This is a review of various customer data sourced from what the customer has said (web, social media, call centre, survey responses) and behavioural data from what actions the customer has taken, based on transactions the business tracks (web, retail, etc). Sentiment analysis is facilitated through software packages provided by specialist vendors. They collect, collate and present data from places along the customer’s journey known as ‘touchpoints’. The data is presented on a dashboard with ‘real-time’ information ready for interpretation. This means that the business could make instant decisions based on insight they derive from the analysis. The term sentiment analysis is growing in popularity. (Hyken, 2018). It is, however a different name for a customer insight approach called the Voice of the Customer, which involves the same collection, collation, presentation and interpretation stages. The author believes that the growing popularity of sentiment analysis is because customer experience practitioners are captivated by the topic of customer emotions. (Swinscoe, 2017). They are also responding to an increased interest in emotions taken by senior leaders (Villani, 2019). This is evident from the growth of emotion related publications and opinions, an inaugural customer experience and emotions conference (Grimes, 2019) and the growing conversation about emotions in customer experience communities.

### *3.2.2. Representing emotion in customer journey mapping*

Almost all businesses undertake a process called ‘customer journey mapping’. This is usually a series of workshops involving different departments across the business. They come together to create a visual representation of the stages the customer takes when it does business with the brand. Some businesses invite customers to these workshops and others undertake the exercises with colleagues representing the departments responsible for different stages of the journey. The workshops will conclude with two maps. One shows what is happening now and the other represents the ideal future map. Both maps will include a section for ‘customer emotions’. (Golding, 2018). Workshop participants will add a word or a symbol to represent the emotions they perceive the customer expresses on their present journey. The customer emotion shown on this map helps customer experience practitioners decide what they need to fix on the journey. With the future map, participants add words or symbols to represent the emotion they intend to evoke from the customer on their journey. This is supported by Shaw who argued that only businesses with an “Enlightened Orientation” were capable of achieving an emotional connection with their customers. An enlightened orientation means the business truly understands the emotions they wish to evoke in customers and that they know how to do this. (Shaw, 2005). While sentiment analysis provides a wealth of data and businesses use simplified descriptions of complex emotions, the author questions the quality of decision making using these methods. It is felt that these techniques should be informed by a thorough understanding of emotions, their formation and how emotion and memory influences customer behaviour. The author is concerned that the type of data sourced for sentiment analysis and the assets used to describe emotions in customer journey mapping workshops is limiting our ability to create true value in customer experiences.

## **4. EMOTION IS NOT WHAT YOU THINK IT IS**

There is no widely held or accepted definition of emotion (Feldman Barrett, 2017). Recent observations of brain activity through the advanced capability of fMRI scanners have however helped scientists understand how the brain operates in an emotional state. These findings are challenging beliefs which have been held on this topic for centuries. This presents customer experience practitioners with an opportunity to rethink emotion, the ability to influence it and review how they design experiences for their customers.

### **4.1. The Basic Emotions**

The founder of Basic Emotions, Ekman, proved through experiments he carried out in pre-literate communities in New Guinea, that emotions were not culturally specific or learned. (Ekman, 1999). Instead Ekman found that six emotions were universal and innate. These emotion states were; anger, disgust, fear, happiness, sadness and surprise and it was accepted that they were hardwired into our neural circuitry. Ekman based his findings on the recognition and mirroring of facial expressions by individuals. These were in response to six images of actor’s faces depicting the six different emotions Ekman believed existed. The experiments were later repeated in Japan and Korea and the findings were the same. Since the publication of Ekman’s basic emotion list others have added to it including; trust and anticipation (Plutchik, 2002) and the categories of love, joy, hostility, annoyance, jealousy and contempt. (Fischer, 1998).

### **4.2. Emotions are simulations – they are predictions, they are not hardwired**

Research to replicate Ekman’s findings has been undertaken over the last decade at Northeastern University in the United States. Despite following exactly the same procedures as Ekman, neuroscientists were unable to arrive at the same results. This failure to arrive at consistent findings led to new discoveries into emotion, their formulation and the language used

to describe them. (Feldman Barrett, 2017). Neuroscientists vigorously scoured extensive documentation, used fMRI scans, and other technologies. Failing to match the output, they concluded that an error must have occurred in the information presented to the respondents within Ekman's experiment. A "Theory of Constructed Emotion" emerged instead. Feldman Barrett asserts that individuals are the 'active constructor of their emotions'. Her research explains that emotions are not built in, but made from a composition of factors that vary by culture and individual circumstance. This is a complete contrast to Ekman who claimed that emotions were hard wired. Using fMRI to demonstrate brain activity, Feldman Barrett describes emotion is a mental concept. This is a consequence of the following factors; neural patterns in an individual's brain representing their past experiences; a consideration of the context of the event which has stimulated the emotion and the familiarity the individual has with the event. Feldman Barrett clarifies by saying "You aren't at the mercy of your emotions, in every waking moment, your brain uses past experience, organised as concepts to guide your actions and give your sensations meaning. When the concepts involved are emotion concepts, your brain constructs instances of emotion." Rather than the individual expressing an emotion from a limited pre-categorised list, which is what happened with Ekman, Feldman Barrett explains that the brain is guessing what is happening during an event and it creates a simulation. These findings have been received with skepticism and distrust by scientists across the globe and they have not been widely accepted because they are so radical. As she continues to provide evidence to support her Theory of Constructed Emotion, Feldman Barrett's discovery presents new challenges to business. As emotion becomes more important to organisations, their understanding of it must improve. Presenting a small selection of pre-defined words or symbols to customers is replicating the approach taken by Ekman. It could be argued that the selection is too narrow, open to wide interpretation and very high levels of subjectivity. If people do create simulations, the approach taken by customer experience practitioners will need to be a varied as the simulations themselves. Instead of trying to predict which emotion the customer may present at any interaction through an Enlightened Orientation (Shaw, 2005) and designing an experience around it (Golding, 2018), the author suggests that the organisation should equip its employees with emotional intelligence. Emotional Intelligence is: "Your ability to recognize and understand emotions in yourself and others and your ability to use this awareness to manage your behavior and relationships. Emotional Intelligence is the something in each of us that is a bit intangible. It affects how we manage behaviour, navigate social complexity and make personal decisions that achieve positive results." (Goleman, 1999, pp. 16). These skills enable individuals to understand their own emotions, the emotions of others and how to grow valued relationships. This way the business has the confidence to receive whichever simulation the customer presents. Employees could respond to a customer in a considered and thoughtful way, which could result in a compelling experience for the customer and the generation of positive memory.

### **4.3. The importance of language in defining emotion**

Research into the variety of words used across the globe to describe specific emotions presented another set of findings for Feldman Barrett. Words used exclusively in one culture would not easily translate in other languages. Evans (2001) illustrates this as he expresses an emotion he felt personally but could not describe. Sometime after his experience he is introduced to a word in Japanese, which when translated meant exactly how he felt. As a consequence of this finding, Feldman Barrett recommends individuals to develop emotional granularity which means the creation of a larger lexicon to describe emotions. Having a wider range of words to describe how individuals are feeling meant they had a better chance of describing their simulation. She was effectively stating that "you'll be better calibrated to cope with varied circumstances potentially more empathetically to others" (Feldman Barrett, 2017, pp 137).

This means that the narrow description customer experience practitioners presently use to describe customer emotions limit their ability to identify simulations. This would not only influence the quality of customer conversations, it could have an impact on the language and symbols used to obtain feedback and the way emotion is presented in customer journey mapping exercises (Davidson, 2013).

## **5. THE CONNECTION BETWEEN EMOTION AND MEMORY**

### **5.1. The Peak End Rule**

It's time for customer experience practitioners to give equal consideration to the experience they are delivering in the moment and the memory the customer creates from that experience. This point is made based on findings from Kahneman that suggest people don't choose between experiences, they make decisions based on the memories of experiences (Kahneman, 2010). As Watkinson explains "since our memories of past experiences are used to set expectations for the future, the memories we have of a customer experience are crucial not just because we want to have positive memories but because it increases the likelihood of repeat business" (Watkinson, 2013, pp. 98). Customer Experience practitioners should therefore consider behavioural science theory in the creation of strategies to influence the memories their customers construct. One such theory is the "Peak End rule" (Fredrickson, 2000) which provides four helpful guiding principles that could be applied universally across all customer interactions. These four principles relate to events a customer could experience along their journey with a business. The "Peak" relates to any experience that stands out for the individual, either positive or negative at any stage during the experience itself. The "End" points to the experience which happens at the perceived end of the overall journey, again this could be a positive or a negative experience. Should the experience be perceived as a negative one, it will override all of the positivity Peaks during the journey. Similarly, should any negative experiences have occurred during the journey, the extent of the negative memory can be reduced by a positive End. (Swinscoe, 2016). Some brands are already mindful of this science, they accept that customer journeys can go wrong and they carefully design "recovery actions" (North, 2018). These steps intercept the creation of a negative memory with an experience which will either neutralise it or create a positive outcome. Michelli (2008) proposes that positive outcomes are more likely when recovery is led by emotionally intelligent employees who connect with the customer. Arussy (2010) supports this view as he asserts, "to design customer experiences for the longest possible memory, you must understand the customers' real problem and the emotions associated with the problem, and then you must apply your learnings" (Arussy, 2010, pp. 66). The Peak End rule presents one further principle customer experience practitioners could consider in their experience design. Fredrickson, (2000) states that the duration of the "affective episode is unimportant". This means that the length of time an individual spends in either the positive or negative experience at Peak or End is not relevant to the memory of the experience. This is contrary to observations made by Berry et al (2015) who suggests that failure to recognize and respond to the emotional states of customers quickly leave them in a worse state.

### **5.2. Avoiding indelible negative memories**

Presenting a different perspective to the Peak End Rule is the idea that sad experiences stay longer with individuals and depending in their intensity, are indelible. (Verduyn & Lavrijsen, 2015). This means that the efforts to 'recover' a deeply negative experience could be a waste of resources. The reason for the staying power of a negative emotion is attributed to the rumination an individual experiences as they attempt to understand why a specific event has taken place. Over time individuals reassess the contributing factors of the event which means replaying the memory of the negativity.

Organisations should therefore take steps to avoid the type of experiences which lead to such deeply held negative memories where possible. Dixon et al goes some way to describe this through employees asking intelligent questions proactively of customers. Drawing on a case study in a call centre environment Dixon explains how the initial contact might be to solve a problem the customer has presented. This is a reactive stance. Instead of ending the contact there, the employee may shift to a proactive stance asking carefully designed questions which may prevent further queries and issues which could become negative experiences. This approach could prevent the instance of potential sad experiences. (Dixon et al, 2013).

### **5.3. How experiences create positive memories**

If we think of the future as “anticipated memories” (Kahneman, 2010), customer experience practitioners should carefully consider the memories experiences create. Typically, the focus in customer experience has been placed ‘in the moment’ and memories are rarely discussed. Kahneman describes memories in two categories which could help to influence an approach the customer experience discipline may consider universally. The first category is the experiencing self where each moment lasts three seconds. They represent our lives in the present moment, they are fleeting and they are not memorable. As everything is ‘ticking along’ as expected and there are no significant surprises individuals don’t store them (Peters, 2012). In contrast the second category, the remembering-self is described as the story-teller and the decision maker. The remembering self “maintains our life story”. (Kahneman, 2010). Kahneman goes on to explain “mundane experiences are swept away by the brain to make room for new and potentially interesting memories”. (Kahneman, 2010). This is the topic of continual debate in customer experience. Many people in the discipline believe loyalty comes to a brand that ‘gets the basics right’. This translates into brands consistently delivering what the customer expects. Given these findings, it could be argued that ‘bog standard’ experiences would not be stored by one’s remembering self. When faced with a choice of similar products and without a positive recall, customers are more likely to switch to a competitor. This point is further supported by Watkinson (2013) who says, “Nobody falls in love with something that’s only average. We want something that plucks our heart strings. The way a product, brand or service makes us feel is critical to its success. We want people to develop an emotional attachment to the brand so that they continue to buy from us in the future and share their positive experiences with others.” (Watkinson, 2013, pp. 188).

### **5.4. Delight or thoughtfulness – creating positive memories**

The debate about whether to delight customers (Dixon et al, 2010), exceed their expectations (Kazanjan, 2007) or amaze them (Hyken, 2011) has continued since the inception of customer experience as a discipline. Berry and Parasuraman (1991) present the idea that experiences should not just be about the ‘satisfaction’ of customers having their needs met. Instead, customers should experience a sense of delight at having enjoyed a better experience than they had expected. A contrary view is the suggestion that businesses are wasting their time trying to delight customer and they should simply focus on solving customer problems. (Dixon et al, 2010). This point is further supported by scientific evidence proving that the emotional states of delight and gratitude are two of the most transient. This means that investment made to create more of these emotions would not result in the storing of a positive memory. (Verduyn & Lavrijsen, 2015). It is however argued that efforts to continually deliver ‘surprise and delight’ experiences to customers are expensive, unsustainable and lead to diminishing returns (Schmidt, 2018). This approach may also be uncomfortable for customers as the levels of reciprocity in the relationship are out of balance (Shotton, 2018). Simply put, the business is doing too much. Schmidt goes further in explaining that delivering ‘standard and unmemorable’ experiences could also restrict business growth.



The author suggests that the creation of a positive memory does not need to be elaborate, orchestrated or expensive to be stored by the remembering-self. It does however need to be meaningful, connected and authentic. Optimal customer experience has recently been described as “thoughtfulness made visible” (Watkinson, 2019). The author therefore starts the next chapter on emotional intelligence with a story to bring this to life. It’s a relevant, unscripted and sincere story of a real experience. Despite its simplicity, the thoughtfulness demonstrated by the employees of a hotel brand made the story folklore within the customer experience discipline. (Michelli, 2008).

## **6. WHAT IS EMOTIONAL INTELLIGENCE AND WHAT CAN IT DO?**

### **6.1. A simple story to bring emotional intelligence to life**

A family returned from a holiday at a Ritz-Carlton hotel distraught when they realized that the youngest child’s beloved toy, Joshie the Giraffe, had been left behind. The child’s Dad made up a story about Joshie staying behind to help the staff in order to pacify him. Later that evening the hotel called to let the family know that Joshie was found. The Dad’s story of ‘helpful Joshie’ was relayed to the staff on the call and early the next morning pictures of Joshie with various other stuffed animals sunbathing, driving a golf buggy and having a massage arrived in the Dad’s inbox. The toy was shipped by courier with other branded items from the hotel and a binder meticulously documenting the Giraffe’s extended stay. (Hurn, 2017). In this story the staff proactively contacted the family to make them aware that they had found the soft toy. They recognized that this may have caused some unrest in the household. On understanding the story, the child had been told, the staff willingly invested their time to take pictures of the Giraffe across the resort. They had taken time to speak to members of the team familiar with the family so that the locations of the shots would be familiar to the child. Wanting to keep the story going, a selection of these images were sent first thing in the morning. The final acts of thoughtfulness involved the giraffe being sent by courier and included branded items from the hotel for other members of the family to enjoy. The “binder meticulously documenting” the soft toy’s extended stay suggests that hotel staff worked past their contracted hours to create the keep-sake. This would be a perfect reminder for the child, something the parents use when retelling their story and it shows the extent of their caring. This is not regarded as just good customer service; this is a great example of emotional intelligence in action.

### **6.2. Emotional Intelligence – it’s not always an intelligence**

Mayer and Salovey were the first to publish research on the topic of Emotional Intelligence. While the term had been in existence well before this publication (Gayathri, Meenakshi, 2013) it was Goleman who popularized it in 1998. It is argued that this popular version, which is most commonly used in business isn’t in fact an intelligence at all. (Davies, 1998. Brody, 2004. Matthews et al, 2012). Mayer and Salovey had focused their ideas on cognitive ability and these were scientifically proven because they could be measured (Gardner, 1983). Other mixed approaches designed by Goleman and Bar-on included additional competences. When Goleman blended personal attributes into his model it became impossible to scientifically test. More recently the word Intelligence has been replaced with other terms such as Agility (David, 2018) and Competence (Cherniss, 2012) partly due to the scientific validity of the word intelligence and because other terms as more accessible by all (Routledge, 2018). On promoting his newly published book about Emotional Intelligence (Gibbs, 2001) Goleman claimed that its acquisition was more important than IQ for leadership success and he was heavily criticized for these ‘unsubstantiated’ claims (Salovey, Mayer & Brackett, 2004. Grubb & McDaniel, 2007). Given that IQ had, until that point, been the only recognized attribute for business advancement, Goleman’s model grew in popularity as it presented an accessible skill that could be learned over time.

There is no agreed definition for Emotional Intelligence (Feldman Barrett, 2017) and there no one way of testing (although MSCEIT Mayer-Salovey-Caruso Emotional Intelligence Test remains valid). There is however, significant proof that the adoption of Emotional Intelligence leads to an improvement in business performance, employee engagement and staff retention. (Farisekki et al, 2013. Roche Martin, 2019). Goleman’s Emotional Intelligence model includes four domains and 12 competencies (see figure 1). Goleman defines Emotional Intelligence as, “Your ability to recognize and understand emotions in yourself and others and your ability to use this awareness to manage your behavior and relationships. Emotional Intelligence is the something in each of us that is a bit intangible. It affects how we manage behaviour, navigate social complexity and make personal decisions that achieve positive results.” (Goleman, 1999, pp.16).

### 6.3. Emotional Intelligence and Customer Experience

In this section we explore some initial ideas to demonstrate the value Emotional intelligence. Using competencies from Goleman’s model, we consider how they could (a) help customer experience practitioners create more positive memories directly with customers (b) help employees influence change in the workplace which will result in better customer experiences. The author believes that people with emotional intelligence can make things better for customers, “Emotionally Intelligent people show better self-management, the ability to defer rewards, they have superior impulse control, empathy and they tend to make better team mates and team builders”. (Tossman, 1999, pp.4). Other ideas have been weaved into these lists to signal areas of further investigation.

Figure 1: Emotional Intelligence Domains and Competencies.

#### Emotional Intelligence Domains and Competencies

SELF-AWARENESS	SELF-MANAGEMENT	SOCIAL AWARENESS	RELATIONSHIP MANAGEMENT
Emotional self-awareness	Emotional self-control	Empathy	Influence
	Adaptability		Coach and mentor
	Achievement orientation		Conflict management
	Positive outlook	Organizational awareness	Teamwork
			Inspirational leadership

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Taken from an article in Harvard Business Review. Emotional Intelligence has 12 elements. Which do you need to work on? (Goleman, D. Boyatzis, R.E. 2017, pp. 25).

### 6.4. Creating more positive memories directly with customers

#### 6.4.1. Empathy

This term is most frequently used by people when asked to describe emotional intelligence. (McKee, 2015). Empathy can be further defined as cognitive, emotional and compassionate. Compassionate empathy is the ability to understand the person’s situation and feel it with them, but the individual makes a willing choice to help, if needed. In order to understand someone’s situation you’re required to Focus.

At times of ‘attention deficit’ (Goleman 2013) this is a skill in itself. Coupled with Focus is the ability to listen. As Peters describes the competence of listening as listening fiercely (Peters 2018) he claims that individuals should feel exhausted when they have listened with laser-like intent. Whether the customer is present or remote, the ability to use compassionate empathy makes customers feel valued and employees are more likely to solve their customer’s problems. Observing the language used, the words left out of the conversation, (Stokoe, 2018) the tone and speed of the voice and where relevant, observing the body language (Ambady & Rosenthal, 2016) enables the employee to build rapport, taking the steps to enable employees to take action which may surprise and delight. Employees with a high level of emotional intelligence know how to use intelligent questions and they know how to offer suitable responses. When we consider emotional simulations, (Feldman Barrett, 2017) it’s likely to be the person with emotional intelligence who can adapt to the emotional state presented to them and customers expect you to take their lead. When employees understand their customers and act ‘in the moment’ they do things that other brands don’t and it is these types of behaviours which may be stored in the ‘remembering-self’. Employees with high emotional intelligence are aware of emotional empathy (when individuals feel along with the other person) and they take steps to prevent the contagion of those emotions. (Hatfield et al, 1994). While Bloom (2016) posits that empathy cannot be achieved without prejudice and rational compassion is a more reliable and humane approach, customers connect with businesses where they perceive they have been heard and they are valued. The author proposes that employees with a high level of empathy would help neutralize the types of negative experiences that are likely to remain with customers because they have felt them so deeply. (Verduyn & Lavrijsen, 2015). Using compassionate empathy, employees would ensure that their actions are relevant but they remain resilient to any emotional contagion. (Hatfield et al, 1994).

#### 6.4.2. *Inspirational Leadership*

The majority of literature surrounding emotional intelligence is written for leaders. (Gayathri, N. Meenakshi, K, 2013). At a time when employees are increasingly invited or volunteer to lead, the author considers Peters who challenges organizations to consider frontline leadership. He suggests that businesses should invest in more ‘frontline chiefs’. Peters goes on to say that businesses should demonstrate their commitment to this position by diverting at least 25 percent of all management training budgets to these key influencers in the business. Often memorable customer experiences happen when an employee takes ownership of an issue and does something out of the ordinary for the customer. They lead the action and they motivate others to help them achieve this action. Customers are looking for businesses not only to solve their problems but to also add value to their lives. (Hsieh, 2010). Anyone in a team could take the lead with a new idea and this is possible when the leadership proposition is framed as a set of characteristics rather than a formal role or title. When we consider the theory of ‘Distributed Leadership’ (Gronn, 2002) we are reminded that everyone in the business has the choice to lead and this ownership is highly valued by customers. They want employees to be interested, accountable and to conclude their interaction. Individuals capable of stepping in are often self-aware; they know what they are capable of, they have a positive outlook; anything is possible and they can coach and mentor others to reach a desirable outcome. The author considers whether employees with competence in inspirational leadership could create the type of Peak experiences discussed in the earlier chapter. Taking the initiative to do something extraordinary could mean an act of thoughtfulness which becomes stored as the ‘remembering-self’. (Kahneman 2010)

### 6.4.3. *Emotional self-control*

This competence is regarded as the skill which enables a mindful response to extreme emotions. It's not about suppressing emotions, rather it's the ability to stay calm and clear headed when faced with those intense emotions. Effective problem solvers use this skill often. It means that employees are able to dissipate any negative emotion they are presented with and this enables businesses to recover well when things go wrong. When employees are in constant customer communication, this is a valuable skill to acquire. The ability to exercise emotional self-control means that an employee is able to lead the communication with a customer through to conclusion. Dixon et al (2013) describes a competency called Control Quotient (CQ) which blends IQ, Emotional Intelligence with the ability to take over interactions with customers dealing with challenging situations.

## 6.5. Influencing change in the workplace

### 6.5.1. *Achievement orientation*

Businesses put policies and procedures in place to manage their people and to reduce risk with employees and customers. On occasion these rules are perceived as illogical or unreasonable by customers (and sometimes by staff) which creates tension between them and the business. Employees with the drive, determination and conviction to challenge, where relevant, the unnecessary 'tripping points' (Routledge, 2018) help their colleagues by making customer relationships easier. The biggest difference between the person with emotional intelligence and the one without is that the person with the skill will achieve this goal professionally, calmly and without tarnishing their reputation. Taking employees with an achievement orientation, the author proposes that businesses should encourage these individuals to help others to help themselves which means creating emotional mentor roles across the business who will work with individuals to create and nurture an emotionally intelligent organization (Weisinger, 1998).

### 6.5.2. *Conflict management*

Conflict frequently arises when changes are necessary to improve the customer journey, as a result of customer insight or the launch of new initiatives. The emotionally intelligent employee has the self-awareness to approach the scenario carefully, being mindful of the emotions those individuals could be experiencing. They will also draw on their skills of organizational awareness; knowing how the organisation operates and who influences which parts of the business. These steps would be taken to avoid conflict. (Hart, 2000). When conflict does arise they have the capability to coach and mentor colleagues through the changes that need to be made and they use outstanding feedback skills. Using all four of the domains in Goleman's model, these employees will achieve the desired outcome authentically and with the best result for the business.

## 6.6. Limitations to the adoption of Emotional Intelligence

The Emotional Intelligence models referred to in this paper have been developed within a Western culture. Variations in culture (Hofstede, 2019) could influence the way emotional intelligence is adopted in global organizations. Goleman has delivered a global coaching programme of emotional intelligence training for the last four years, so further research into emotional intelligence and customer experience in different cultural settings could be considered. Thought should also be given to individuals with lifelong developmental disabilities such as autism. Individuals with this disability could be expected to establish these competencies as part of a team development activity but are unable to do so. This is an important point for organisations preparing to launch a business-wide programme of emotional intelligence training.

## **7. UNLEASHING THE POWER OF EQ – USING THE SKILLS WILLINGLY**

In this chapter we briefly outline some of the challenges presented to employees who, despite their emotional intelligence skills, will be prohibited from using them effectively due to organizational culture and its associated behaviours. (Moore, 2019).

### **7.1. Employees who feel love**

How significant individuals feel within an organization influences whether they ‘want to go the extra mile’ for it. (Goffee & Jones, 2013) People who love where they work and the people they work with are proud of their contribution and want to safeguard the brand’s identity. (Barsade & O’Neill, 2014). This is one of the reasons why businesses that put their employees first and their customers second, succeed. (Hsieh, 2010). This positioning also provides an explanation for the extensive use of this quote in management literature by Richard Branson where he says, “Clients do not come first. Employees come first. If you take care of your employees, they will take care of the clients” (Boyle, 2018, pp.165). There is substantial evidence to suggest that engaged employees create greater emotional connections with customers which result in customer loyalty and staff retention (Michelli, 2012). Cultural blueprints to develop closer emotional bonds with customers are presented by businesses such as Google, Netflix, Skyscanner and Facebook where employees are afforded greater autonomy which spawns a culture of collaboration and creativity (Pink, 2018 & McCord, 2017). Nayar (2010) asserts that a company of committed and valued individuals will know what is intuitively right for the customer. They will have the courage to take the steps necessary to achieve more than the business owners expect. He goes on to explain that when employees feel cared for they are more likely to care. This is reinforced by Reciprocity theory (Shotton, 2018) where individuals reward kind actions (and they punish unkind ones). Often employees want to give back to a company they perceive is generous to them. Describing the changing expectations of generations X, Y & Z, Bergdahl (2018) explains that the workplace is now perceived as a place of exploration, development and contribution. Slowly businesses are recognizing that the new workforce want the autonomy to do the best work they can. This means the eradication of policies or rules that prevent them from achieving this. They expect to understand and have a connection with the company purpose and they will stay when they are afforded the opportunity to learn, a term Pink (2018) calls Mastery. In short, the Climate (Goleman, 2013) of the organization should nurture its people. If they are expected to demonstrate thoughtfulness to customers they should feel this in the workplace, otherwise employees could feel that their behaviour is inauthentic (Gilmore & Pine, 2007) and this is unsustainable.

### **7.2. Employees need to feel safe to develop their Emotional Intelligence skills**

Goleman has been eager to explain that, “Emotional Intelligence is not just about being nice” (Goleman, Boyatzis, 2017, pp.42). Exercising emotional intelligence requires a degree of vulnerability and fortitude. (Goleman, 2010) and people need to feel safe to experiment with the skill. Sinek (2017) and Edmondson (2019) have presented different and persuasive accounts of safety establishing trust in the workplace. Sinek describes a “Circle of Safety” where interdependent relationships exist between individuals on the inside of the circle which creates trust and cooperation. The individuals feel a sense of belonging to the others on the inside of the circle. They feel protected from the external world. Edmondson describes “Psychological Safety” as a place where employees are able to ask questions, express ideas, give candid feedback (Scott, 2018) and openly admit mistakes. This means having the confidence to do the right thing to take the business forward. The findings from these authors are echoed by Google, who completed hundreds of experiments over several years trying to find the winning formula for teams. The result: members of the team needed to trust one another and to do this, they needed to feel safe (Duhigg, 2016).

Brown (2018) suggests that without trust there is no connection between people. She explains how “most people believe they’re completely trustworthy yet they trust only a handful of their colleagues” and this stops meaningful connections and greater achievement. (Brown, 2018, pp. 221). She goes on to outline the “braving inventory” which identifies seven areas of work leaders and their teams should consider including boundaries, accountability and using a vault to ensure that information not intended for sharing is never disclosed. (Brown, 2018, pp. 225).

### **7.3. Being able to demonstrate emotional intelligence – actions speak louder than words**

When an organization prevents, hinders or slows down the ability of the employee to act in the most appropriate way they feel restricted from meeting the expectations of increasingly demanding customers (Hyken, 2018). This behaviour also stops the individual from fulfilling their purpose (Pink, 2018). As McCord (2017) describes “most organization’s employees are trained to follow specific procedures and policies and this restricts their ability to do what the customer feels is the right solution for them personally”. (McCord, 2017, pp. 75) Worst still, if the employee is unable to address the issues the customer is presenting because company policy does not allow a positive outcome, the customer will be left feeling negative towards the organization and sometimes the individual. (Villani, 2019). Dixon (2013) describes how the prescriptive behaviour expected of employees in some cultural settings leads to an eradication of all social intelligence (Goleman, 2010). This in turn prevents the opportunity to build rapport and consequently the inability to cater for any emotional simulation presented by the customer. While it takes courage for organisations to examine the levels of trust within their business (Brown, 2018), it is a necessary action if staff are expected to deliver experiences which will create positive memories. To start this process of examination, businesses may consider taking an observational stance with their policy making. This is best described by Bliss where she asks whether the business would make the same policy if the customer was sat in front of them while they were writing it. Almost 25 years ago Berry (1995) explained that an ‘empowered state of mind’ can only be achieved through the creation of a ‘thin rulebook’ which comprises safe zones where employees are expected to make independent decisions. There are low or high risk zones which provide employees with the safety they need to make confident decisions. The former gives employees the choice to consult a supervisor but this is not anticipated. In the latter, consultation is required. (Berry, 1995). Alternative and more recent approaches to the creation of trust have been explained by McCord who ‘liberated’ teams at Netflix from unnecessary rules and approvals replacing policy documents with standards instead. Using behavioural expectations set by the business, employees would apply their judgement in decision making rather than following a list which may not include guidance for unique events. McCord (2017) describes this action as “Giving people their power’ (McCord, 2017, pp.10).

## **8. CONCLUSION**

People working in customer experience are presented with a tremendous opportunity right now. Neuroscientists continue to discover new information about the brain which helps us to understand how emotions are formed and how they work. (Feldman Barrett, 2017). Behavioural scientists increasingly publish findings which help us understand why we do the things we do (Kahneman, 2010) and, with the rise of AI, there is a growing interest in the development of ‘soft skills’. The combination of these factors suggest that organisations can create more meaningful relationships with their customers using the knowledge of neuroscience, behavioural science and the skills of emotional intelligence. Before businesses invest further in emotion related projects like ‘sentiment analysis’ they may wish to assess their knowledge of emotions, particularly emotional granularity (Feldman Barrett, 2017). They may also wish to explore ways to incorporate behavioural science theory such as the Peak-End Rule into their customer journeys (Kahneman, 2010).

Equipped with this understanding, practitioners could review the design of customer data collection methods and the assets used to represent emotion in customer journey workshops. Further, customer experience practitioners could consider the adoption, or enhancement of emotional intelligence skills used by front line staff should they be afforded the autonomy necessary to create memorable customer experiences. As Magids et al explained, “when companies connect with customer’s emotions – the payoff can be huge” (Magids et al, 2015, pp. 87). Working with a global events company and a UK based utility company, the author is presently exploring the concept of emotional granularity in the context of customer journey mapping. This means that the author has recognized the potential limitations of language used to describe the emotional states customer present along their journey with a business. Typically, when a customer joins a customer journey mapping workshop, they are asked to describe, in words, how they feel about these stages. In order to stimulate the use of a wider lexicon, the author has invited customers to draw their journey as a weather map. Employees taking part in this workshop will be invited to listen fiercely (Peters, 2018) and to Focus (Goleman, 2013) to the commentary the customers provide. This exercise will provide the business with better insight into their customer’s emotions. The second test is to assess the impact of introducing Behavioural Science theories to an employee-only customer journey mapping exercise. The test will assess the type and quality of discussions held in the workshop. The author believes that framing the session around science may lead to new discussions about customer behaviour and business practices and this may lead to more effective ways of designing new customer experiences. The author will therefore be testing the following hypotheses and looks forward to sharing the findings:

- HYPOTHESIS 1: The use of a Weather Mapping technique helps customer experience practitioners to understand more about the emotional states customers perceive along their customer journey.
- HYPOTHESIS 2: The application of Behavioural Science theories within an employee-led customer journey mapping exercises stimulates new discussions relating to customer behaviour.

#### **LITERATURE:**

1. Adolphs, R. Anderson, D. (2018). *The Neuroscience of Emotion: A new synthesis*. (1<sup>st</sup> edition). New Jersey: Princeton University Press.
2. Ambady, N. Rosenthal, R. (2016) *The other you*. New Scientist Archive; Issue 3093, p30-35.
3. Arussy, L. (2010). *Customer Experience Strategy: The complete guide from innovation to execution*. (1<sup>st</sup> edition). New Jersey: 4i, a Strativity Group Media Company.
4. Arussy, L. (2012). *Exceptionalize it!: Stop Boring. Start Exciting Your Customers, Your Employees, and Yourself!*. (1<sup>st</sup> edition). New Jersey: 4i, a Strativity Group Media Company.
5. Bar-On, R. (2000). *Emotional and social intelligence: Insights from the Emotional Quotient Inventory*. In R. Bar-On & J. D. A Parker (eds) *The Handbook of emotional intelligence*. San Francisco, CA: Jossey-Bass, pp 363-388.
6. Barsade, S. O'Neill Q.A. (2014) *Employees who feel love perform better*. Harvard Business Review, January 13, 2014.
7. Bergdahl, M. (2018). *Putting Your Employees First: The ABC's for Leaders of Generations X, Y & Z*. (1<sup>st</sup> edition). Illinois: Sourcebooks
8. Berry, L L. (1995). *On Great Service: A Framework for Action*. (1<sup>st</sup> edition). New York: Free Press.
9. Berry, L L. Parasuraman, A. (1991). *Marketing Services: Competing through quality* (1<sup>st</sup> edition). New York: Free Press.

10. Berry, L.L. Davis, S.W. Wilmet, J. (2015) When the customer is stressed. (October 2015) *Harvard Business Review*.
11. Bliss, J. (2018). *Would you do that to your mother*. (1st edition). New York: Portfolio/Penguin.
12. Bloom, P. (2016). *Against Empathy: A case for rational compassion*. (1<sup>st</sup> edition). London: Penguin Random House.
13. Boyle, C. (2018) Clients do not come first. Employees come first. If you take care of your employees, they will take care of the clients. Linked in article, 11 Jan 2018. Retrieved 10.05.2019 <https://www.linkedin.com/pulse/clients-do-come-first-employees-you-take-care-your-charlie-boyle/>
14. Bradberry, T. Greaves, J. (2009). *Emotional Intelligence 2.0*. (1<sup>st</sup> edition). United States: Talent Smart.
15. Brody, N. (2004). What cognitive intelligence is and what emotional intelligence is not. *Psychological Inquiry*, 15, 234-238
16. Brown, B. (2018). *Dare to Lead: Brave work, tough conversations, whole hearts*. (1st edition). London: Vermilion/Penguin Random House
17. Caruso, D.R. Salovey, P. (2004). *The Emotionally Intelligent Manager: How to develop and use the four key emotional skills of leadership*. (1<sup>st</sup> edition). San Francisco: Wiley.
18. Chataway, R. (2019). Interview, London. April 19th 2019.
19. Cherniss, C. (2012). Social and emotional competence in the workplace.
20. Daniels, P.S. (2018). *Your Brain: A user guide*. (2<sup>nd</sup> edition) Washington: National Geographic.
21. David, S. (2016) *Emotional Agility: Get Unstuck, Embrace Change, and Thrive in Work and Life*. United States: Avery Publishing
22. Davies, M. Stankov, L. & Roberts, R.D. (1998) Emotional Intelligence: in search of an elusive construct. *Journal of Personality and Social Psychology*, 75, 989-1015
23. Davidson, R.J. (2013). *The Emotional Life of your Brain*. (1st edition) United States: Hudson Street Press; London: Hodder & Stoughton.
24. Dixon, M. Toman, N, Delisi, R. (2013). *The Effortless Experience: Conquering the new battleground for customer loyalty*. (1<sup>st</sup> edition). London: Penguin Group.
25. Dixon, M. Freeman, K. Toman, N. (2010). Stop trying to delight your customers. *Harvard Business Review*. July – Aug 2010.
26. Duhigg, C. (2016) What Google Learned from its quest to build the perfect team. 25 Feb 2016. <https://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html>
27. Edmondson, A. (2019). Creating Psychological Safety in the Workplace. *Harvard Business Review*, 2019.
28. Ekman, P. (1999) *Handbook of Cognition and Emotion*. (1st edition) San Francisco: Wiley.
29. Evans, D. (2001). *Emotion: The Science of Sentiment*. (1<sup>st</sup> edition). New York: Oxford University Press.
30. Evans, R. (1984) *Richard Evans Quote Book*. (1st edition). Illinois: Publishers Press.
31. Farisekki, L. Freedman, J. Chini, M. Barnabè, F. Paci, E. Amadori, G. (2013). Organisational Engagement, EI and Performance. Six Seconds. White Paper. April, 3, 2013.
32. Feldman Barrett, L. (2017). *How Emotions are made: The secret Life of the Brain*. (1<sup>st</sup> edition). New York: Macmillan.
33. Feldman Barrett, L. (2017) TED@IBM. (December 2017) You aren't at the mercy of your emotions – your brain creates them. Retrieved 19.02.2019. [https://www.ted.com/talks/lisa\\_feldman\\_barrett\\_you\\_aren\\_t\\_at\\_the\\_mercy\\_of\\_your\\_emotions\\_your\\_brain\\_creates\\_them?language=en](https://www.ted.com/talks/lisa_feldman_barrett_you_aren_t_at_the_mercy_of_your_emotions_your_brain_creates_them?language=en)



34. Fredrickson, B. (2000). Extracting meaning from past affective experiences: The importance of peaks, ends and specific emotions. *Cognition and Emotion*. 2000 Vol 14 (4) (pages 577-606)
35. Gardner, H. (2011). *Frames of Mind: The Theory of Multiple Intelligences*. (3rd edition). Philadelphia: Basic Books
36. Gayathri, N. Meenakshi, K. (2013). A literature review of Emotional Intelligence. *International Journal of Humanities and Social Science Invention*. Vol 2. Issue 3. Pp 42-51. March 2013.
37. Goffee, R. Jones, J. (2013). Creating the Best Workplace on Earth. *Harvard Business Review*. May 2013.
38. Gibbs, N. (2001). The EQ Factor, *TIME* (Sunday June 24, 2001)
39. Gilmore, J.H. Pine, B.J. (2007). *Authenticity: What consumers really want*. (1st edition). United States: Harvard Business School Press.
40. Golding, I. (2018) *Customer What?* (1st edition) United Kingdom: Self published.
41. Goleman, D. (1999). *Working with Emotional Intelligence*. (1<sup>st</sup> edition). London: Bloomsbury Publishing.
42. Goleman, D. (2007). *Social Intelligence: The Revolutionary New Science of Human Relationships*. (1<sup>st</sup> edition). New York: Bantam Books.
43. Goleman, D. (2013). *Focus: The Hidden Driver of Excellence*. (1<sup>st</sup> edition). New York: HarperCollins.
44. Goleman, D. Boyatzis, R.E. (2017). Emotional Intelligence has 12 elements. Which do you need to work on? *Harvard Business Review* 06.02.2017
45. Gray, R. (2012) The rise of mobile phone photography. *The Guardian*. Fri 16 November 2012
46. Grimes, S. (2019) <http://cx-emotion.com/> Retrieved: 11.05.2019.
47. Gronn, P. (2002). Distributed leadership as a unit of analysis. *The Leadership Quarterly*. Vol 13, Issue 4. August 2002 (Pages 423-451)
48. Grubb, W.L III. McDaniel, M. A. (2007) The Fakability of Bar-On's Emotional Quotient Inventory Short Form: Catch Me if You can. *Human Performance* 20 (1) 43-59. January 1.
49. Hart, B. (2000). Conflict in the workplace. Behavioural Consultants, PC. [https://www.excelatlife.com/articles/conflict\\_at\\_work.htm](https://www.excelatlife.com/articles/conflict_at_work.htm) Retrieved: 18.05.2019
50. Hatfield, E. Cacioppo, J.T. Rapson, R.L. (1994). *Emotional Contagion*. (1<sup>st</sup> edition). Paris: Cambridge University Press.
51. Hofstede, G. (2019) <https://www.hofstede-insights.com/> Retrieved: 03.05.2019.
52. Hsieh, T. (2010). *Delivering Happiness. A path to profits, passion, and purpose*. (1st edition). New York: Grand Central Publishing.
53. Hurn, C. (2017) Stuffed Giraffe Shows What Customer Service is All About. (2<sup>nd</sup> edition). Retrieved: 25.04.2019 from [https://www.huffpost.com/entry/stuffed-giraffe-shows-wha\\_b\\_1524038](https://www.huffpost.com/entry/stuffed-giraffe-shows-wha_b_1524038)
54. Hyken, S. (2011). *The Amazement Revolution: Seven Customer Service Strategies to Create an Amazing Customer (and Employee) Experience*. (1<sup>st</sup> edition). Texas: Greenleaf Book Press.
55. Hyken, S. (2018). *The Convenience Revolution: How to deliver a Customer Service Experience That Disrupts the Competition and Creates Fierce Loyalty*. (1<sup>st</sup> edition). Pennsylvania: Sound Wisdom.
56. Kahneman, D. (2011). *Thinking Fast and Slow*. (1<sup>st</sup> edition). London: Penguin Group.
57. Kahneman, D (2010) The riddle of experience vs. Memory. [https://www.ted.com/talks/daniel\\_kahneman\\_the\\_riddle\\_of\\_experience\\_vs\\_memory?language=en#t-5187](https://www.ted.com/talks/daniel_kahneman_the_riddle_of_experience_vs_memory?language=en#t-5187) Retrieved: 06.01.2019

58. Kazanjian, K. (2007). *Exceeding Customer Expectations*. (1st edition). United States: Doubleday.
59. Lemon, K.N. Verhoef, P.C. (2016) Understanding the Customer Experience Throughout the Customer Journey. *Journal of Marketing* Vol 80 (November 2016) (pages 69-96)
60. Magids, D. Zorfas, A. Leemon, D. (2015) The New Science of Customer Emotions. *Harvard Business Review*. November 2015, Vol 93, Issue 11 pg 66-68
61. Matthews, G. Zeidner, M. Roberts, R. (2012) Emotional Intelligence: A Promise Unfulfilled? *The Japanese Psychological Association*. Vol 54, No2, 105-127.
62. McCord, P. (2017). *Powerful: Building a Culture of Freedom and Responsibility*. (1<sup>st</sup> edition). United States: Group West.
63. McKee, A. (2015). How to help someone develop emotional intelligence. *Harvard Business Review*, 24 April 2015.
64. Michelli, J.A. (2008). *The New Gold Standard: 5 leadership principles for creating a legendary customer experience courtesy of The Ritz-Carlton Hotel Company*. (1<sup>st</sup> edition). United States: McGraw Hill.
65. Michelli, J.A. (2012). *The Zappos Experience: 5 Principles to Inspire, Engage and Wow*. (1<sup>st</sup> edition). United States: McGraw-Hill.
66. Moore, S. Interview, London. 19 March (2019)
67. Nayar, V. (2010). *Employees first, customers second: turning conventional management upside down*.
68. North, T. (2018) Presentation on Employee Engagement in Customer Experience. Pearson Business School, 5th December 2018.
69. Peters, Prof S. (2012). *The Chimp Paradox. The Mind Management Programme for Confidence, Success and Happiness*. (1st edition). Great Britain:Vermilion
70. Peters, T. (2018). *The Excellence Dividend: Principles for Prospering in Turbulent Times from a Lifetime in Pursuit of Excellence*. London: Nicholas Brealey Publishing.
71. Pine, B.J. Gilmore, J.H. (1999). *The Experience Economy: Work is Theatre & Every Business a Stage*. (1<sup>st</sup> edition). United States: Harvard Business Review.
72. Pink, D. (2018). *Drive: The Surprising Truth About What Motivates Us*. (2nd edition). Edinburgh: Canongate Books
73. Plutchik, R. (2002). *Emotions and Life: Perspectives from Psychology, Biology and Evolution*. (1st edition). New York: American Psychological Association.
74. RocheMartin. <https://www.rochemartin.com/> Retrieved: 15.05.2019
75. Routledge, T. (2018) Presentation on Meaningful Customer Journey Mapping. Pearson Business School, 24 October 2018.
76. Salovey, P. Mayer, J.D. Brackett, M.A. (2004). *Emotional Intelligence: Key Readings on the Mayer and Salovey Model*. (1<sup>st</sup> edition). United States: Dude Publishing.
77. Schmidt, M.S. (2018) The Top 14 Hacks For your CX Business Case: Nail The Mechanics of Your ROI Model and Compel Executives To Invest in CX. Forrester. August 24, 2018.
78. Schmitt, B. (1999). *Experiential Marketing*. *Journal of Marketing Management*, Vol 15 (pp 55-67)
79. Scott, K. (2018). *Radical Candor: How to get what you want by saying what you mean*. (1<sup>st</sup> Edition). New York: Pan Macmillan.
80. Shaw, C. (2005). *Revolutionize Your Customer Experience*. (1<sup>st</sup> edition). Hampshire; New York: Palgrave Macmillan.
81. Shaw, C. (2007). *The DNA of Customer Experience: How Emotions Drive Value*. (1<sup>st</sup> edition). Hampshire; New York: Palgrave Macmillan.
82. Shaw, C. Dibeehi, Q. Walden, S. (2010). *Customer Experience: Future Trends & Insights*. (1st edition). Hampshire; New York: Palgrave Macmillan.

83. Shotton, R. (2018). *The Choice Factory: 25 behavioural biases that influence what we buy.* (1st edition). Hampshire: Harriman House.
84. Sinek, S. (2017). *Leaders Eat Last: Why some team pull together and others don't.* (1<sup>st</sup> edition). New York: Penguin.
85. Smith, K. Hanover, D. (2016). *Experiential Marketing: Secrets, Strategies, and Success Stories from the World's Greatest Brands.* New Jersey: Wiley.
86. Spector, R. Reeves, B. (2017). *The Nordstrom Way to customer experience excellence: Creating a values-driven service culture.* (3<sup>rd</sup> edition). New Jersey: Wiley.
87. Stokoe, E. (2018). *Talk: the science of conversation.* (1st edition). Great Britain: Robinson.
88. Swinscoe, A. (2016). *How to Wow: 68 effortless ways to make every customer experience amazing.* (1<sup>st</sup> edition). Harlow: Pearson Education Limited
89. Swinscoe, A. (2017). *Don't design for emotion in customer experience.* (1st edition). Retrieved 01.04.2019 from <https://www.forbes.com/sites/adrianswinscoe/2017/06/18/dont-design-for-emotion-in-customer-experience/#2fb5b62b42cc>
90. Taylor, J.B. 2019 via <https://team.turtl.co/story/its-been-emotional-webinar-recording>
91. Tossman, D. (1999) EQ – vogue or value? *New Zealand Management.* 46(5), 34-36
92. Verduyn, P. Lavrijsen, S. (2015) Which emotions last longest and why: The role of event importance and rumination. *Motivation and Emotion Journal.* February 2015 Vol 39 Issue 1. Pages 119 -127.
93. Villani, I. (2019). *Transform Customer Experience: How to Achieve Customer Success and Create Exceptional CX.* (1<sup>st</sup> edition). Queensland: Wiley
94. Watkinson, M. (2013). *The Ten Principles Behind Great Customer Experience.* (1<sup>st</sup> edition). Harlow: Pearson Education Limited.
95. Watkinson, M. (2019) Linked in post 16.04.2019 CX is thoughtfulness made visible'
96. Webb, N.J. (2016). *What Customers Crave: How to Create Relevant and Memorable Experiences at Every Touchpoint.* (1st edition). New York: McGraw-Hill
97. Weisinger, H. (1998). *Emotional Intelligence at Work.* (1<sup>st</sup> edition). San Francisco: Wiley.

# USE OF PRINCIPAL COMPONENT ANALYSIS FOR OPTIMIZATION OF VOICE OF STAKEHOLDER IN QUALITY FUNCTION DEPLOYMENT METHOD

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## ABSTRACT

*Contemporary management concepts include the requirements for implementing and developing sustainable business development strategies which enables a comprehensive overview of the requirements of all stakeholders, and achieving a better relationship in the function of reaching sustainable business objectives. Such a concept requires the full responsibility of management and broader understanding of the importance of the company and its impact on the environment. On the other hand, the key to competitiveness is increasingly in the implementation of differentiation strategies, whereby the competitiveness of enterprises is directly linked to the product, or service that is different from the competition. In order to achieve a product-based differentiation strategy, a systematic and integrative approach to the development of products is necessary, which, due to its complexity, sees and respects the demands of all stakeholders. In that process, the problem of opportuneness of stakeholders' wishes, needs and demands regarding the product and business of the company arises. In the often-used product development method, the QFD method, customer demands were emphasized and as such, a redesign in the part of changing customer requirements (VOC) with the requirements of stakeholders (VOS) is needed. Taking this into account, the aim of this paper is to indicate the possibility of using Principal Component Analysis (PCA) in optimizing and defining the requirements of stakeholders instead of just the customer in the QFD method. This would ensure the improvement of the QFD method and enable its application in the concept of sustainable business.*

**Keywords:** *Principal Component Analysis (PCA), Quality function deployment (QFD), Quality Management, Voice of customer (VOC), Voice of stakeholders (VOS)*

## 1. INTRODUCTION

Faster development and globalization of the market driven by the accelerated development of science and technology and the increasing sensitivity of the environment in the function of achieving competitiveness require changing business models of managing organizations. Sustainable organization success becomes imperative, but within the concept of sustainability that reconciles the economic, ecological and social demands in which the organization operates. The environment in which today's organizations operate are characterized by complexity, heterogeneity, uncertainty as well as dynamism in the sense of being subject to constant changes. Successful organizations must therefore perceive the demands of their environment, both inside and outside. Consequently, innovation as a consequence of creativity, especially in the area of product and service development, ensures market differentiation, and thus

competitiveness. Taking into account the need for innovation, especially products that ultimately often lead to the need for improvements in processes, as well as sustainability requirements and interaction with a complex and dynamic environment, the need to change the concept from listening to the customer (Voice of customer) to listening all interested parties (Voice of Stakeholders) emerged. The new revision of ISO 9001: 2015 recognizes fifteen representatives of interested parties and requests to accept their requirements and needs. Consequently, by changing the concept, it is necessary to redesign or supplement certain development tools whose function is to assist in defining key product development requirements. One of these tools is QFD, known as the Quality House, which has so far been based on key buyer's and product characteristics indicators. By applying the new concept, it is proposed to redefine the QFD method, or part of the Voice of Customer related to Voice of Stakeholder. It means that by process of developing a new product the key requirements of all interested parties are to be taken into account. In order to do this, especially with regard to the choice of key indicators, it is necessary to make the selection and optimization with the respect to the diversity of interested parties and their demands that may be in different in a positive or a negative relationship.

## **2. PRINCIPAL COMPONENT ANALYSIS (PCA)**

### **2.1. Definition and brief history of PCA**

The principal component analysis (also named Karhunen – Loève transformation) is a tool of multivariate statistic, more precisely the exploratory data analysis. (Zöllner, 2012). It is non-parametric method useful for obtaining relevant information from a complex data set. (De Silva, Beckman, Liu, & Bowler, 2017) The earliest literature about PCA dates back to 1901 and Karl Pearson (Pearson, 1901). Although, the technique as we know it today and the term principal components were established by Hotelling in 1933 and 1936 (Hotelling, 1933b, 1933a, 1936). PCA was originally conceived as a method of finding a best fitting line or plane in two, three or higher dimensioned space by calculating the least squares. Pearson declared the calculation in higher dimensional space “cumbersome” (Pearson, 1901; referenced by Zöllner, 2012). Therefore, PCA led shadowy existence until the advent of the computer age what made these techniques applicable to reasonably sized problems (Jackson, 1991; Jolliffe, 2002). Since then its use has burgeoned and a large number of variants have been developed in many different disciplines (Jolliffe & Cadima, 2016). PCA is used to reduce the dimensionality of a data set, which consists of a large number of interrelated attributes, while retaining as much of the variation present in the original data set as possible (Gulmine & Akcelrud, 2006; Hotelling, 1933b, 1933a). This process is done by linear transformation of the original set of attributes into a smaller set of attributes called principal components (PCs) (De Silva et al., 2017). The practical objectives of the use of principal component is: the examination of the correlations between the variables of a selected set; the reduction of the basic dimensions of the variability in the measured set to the smallest number of meaningful dimensions; the elimination of variables which contribute relatively little extra information; the examination of the grouping of individuals in n-dimensional space; determination of the objective weighting of measured variables in the construction of meaningful indices; the allocation of individuals to previously demarcated groups; the recognition of misidentified individuals; orthogonalization of regression calculations. (Jeffers, 1967)

### **2.2. How does it works – math behind PCA**

After the automations of matrix computations by computers, the PCA could start one's triumph. The PCA is a method of the multivariate data analysis which reduces a data set with dimension  $m$  to dimension  $d$ , where  $d < m$ , by computing the principal components (i.e. new variables) of the original data set with the highest variance by the means of eigenpairs of a corresponding

positive semidefinite covariance matrix or correlation matrix. (Zöller, 2012) Each data set respectively all of our observations are carrier for informations. The magnitude of the collected data may sometimes reach a certain limit of human readability, presentability and computability. Sometimes the kind of gathering the data brings some noise with it. Or, one simply does not know, which data is important and needs to extract the parts with the most entropy. The PCA reinterprets the original data with a different point of view. (Zöller, 2012) Assume that there are  $m$  variables to be monitored and  $n$  observations for each variable. These data values define  $m$   $n$ - dimensional vectors  $x_1, \dots, x_m$  or, equivalently, an  $n \times m$  data matrix  $X$ , whose  $j^{\text{th}}$  column is the vector  $x_j$  of observations on the  $j^{\text{th}}$  variable (Jolliffe & Cadima, 2016; Lam, Tao, & Lam, 2010).

$$X = (x_1, x_2, \dots, x_m) = \begin{bmatrix} x_{11} & \cdots & x_{1m} \\ \vdots & \ddots & \vdots \\ x_{n1} & \cdots & x_{nm} \end{bmatrix}.$$

The PCA method, initially, calculates the covariance matrix of the given data set, and then finds the eigenvalues and eigenvectors of this matrix. Next it selects a few eigenvectors whose eigenvalues are more to form the transformation matrix to reduce the dimensions of the data set. (Naik, 2017) Accordingly, the starting point for PCA is the covariance (or correlation) matrix  $S$ . For a  $m$  variable problem, covariance matrix  $S$  is a square matrix given by:

$$S = \begin{bmatrix} s_1^2 & s_{12} & \cdots & s_{1m} \\ s_{21} & s_2^2 & \cdots & s_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ s_{m1} & s_{m2} & \cdots & s_m^2 \end{bmatrix},$$

where the  $s_{ij}$  is the covariance between the  $i^{\text{th}}$  and  $j^{\text{th}}$  variables and  $s_i^2$  is the variance of the  $i^{\text{th}}$  variable  $x_i$ . If the covariances are not equal to zero, it indicates that a linear relationship exists between these two variables, the strength of that relationship being represented by the correlation coefficient  $r_{ij} = \frac{s_{ij}}{s_i s_j}$ . (Jackson, 1991) The goal is to reduce redundancy, hence each

variable has to co-vary as little as possible with other variables. More precisely, to remove redundancy, the covariances between separate measurements has to be zero. Therefore, removing redundancy diagonalizes  $S$ . (Shlens, 2003) Covariance matrix  $S$  may be reduced to a diagonal matrix  $L$  by premultiplying and postmultiplying it by a particular orthonormal matrix  $U$  such that  $U^T S U = L$ .  $T$  denotes the transpose operation. (Jackson, 1991) Furthermore, in purpos to maximaze the variance, the aim is to maximaze the sum of the diagonal elements or trace of the reduce covariance matrix  $L$ ,  $tr(L) = tr(U^T S U)$ . Vector which maximizing this equation correspond to the largest eigenvalue of covariance matrix  $S$ . (Yang & Yang, 2002)

Consequently, the diagonal elements  $\lambda_i$  of matrix  $L$  are called the characteristic roots or eigenvalues od  $S$ . The columns of  $U$  are called the characteristic vectors or eigenvectors of  $S$ . According to the definition of the eigenvector, in purpose to find the eigenvalues  $\lambda$  and eigenvectors  $U$  of covariance matrix  $S$ , the equation  $\lambda U = S U$  have to be solved. Equation  $\lambda U = S U$  is equal to  $(\lambda I - S)U = 0$ . With the assumption that the results is not trivial, the characteristic roots may be obtained from the solution of the determinental equation, called the characteristic equation  $|\lambda I - S| = 0$ , where  $I$  is the identity matrix. This equation produces a  $m^{\text{th}}$  degree polynomial in  $\lambda$  from which the values  $\lambda_1, \lambda_2, \dots, \lambda_m$  are obtained. The characteristic vectors may then be obtained by the solution of the equations  $[\lambda I - S]t_i = 0$  and  $u_i = \frac{t_i}{\sqrt{t_i^T t_i}}$  for

$i = 1, 2, \dots, m$  where  $t_i$  is  $m$  –dimensional vector (Jackson, 1991).

After this analysis, each observation  $x_i$  is reinterpreted by the transformation matrix  $W^T$ . This reinterpretation is called a principal component  $y$  and is calculated by  $y_i = W^T x_i$ . This transformation matrix  $W$  is the matrix of first  $d$  normalized eigenvectors of highest eigenvalues of the covariance matrix  $S$ . Here, a pattern  $x_i$  from original  $m$ -dimensional space is transformed into  $y_i$ , a pattern in reduced  $d$ -dimensional space by choosing only the first  $d$  components (eigenvectors of highest  $d$  eigenvalues) (Naik, 2017; Zöller, 2012). The transformed data set has two main properties: variance in the original data set has been rearranged and reordered so that first few components contain almost all of the variance in the original data, and the components in the new feature space are uncorrelated in nature. (Jia & Richards, 1999)

### 3. CONCLUSION

Principal component analysis (PCA) is one of the most widely used multivariate techniques in statistics. It is commonly used to reduce the dimensionality of data in order to examine its underlying structure and the covariance/correlation structure of a set of variables. (Reris & Brooks, 2015) One of the basic advantages of principal component analysis is that it gives clear guidance as to the selection of the necessary variables in further studies (Jeffers, 1967). It is widely used in almost all areas of research: data mining, machine learning, face recognition and lots of others. Principal Component Analysis (PCA) can be very helpful in optimizing requirements of stakeholders in the QFD method. In the future work, the case study with the application of the PCA in purpose to see the relationship between stakeholders as well as the optimizing stakeholders requirements, will be done.

### LITERATURE:

1. De Silva, C. C., Beckman, S. P., Liu, S., & Bowler, N. (2017). Principal component analysis (PCA) as a statistical tool for identifying key indicators of nuclear power plant cable insulation degradation. In *Proceedings of the 18th International Conference on Environmental Degradation of Materials in Nuclear Power Systems – Water Reactors* (pp. 1227–1239). [https://doi.org/10.1007/978-3-030-04639-2\\_78](https://doi.org/10.1007/978-3-030-04639-2_78)
2. Gulmine, J. V., & Akcelrud, L. (2006). Correlations between structure and accelerated artificial ageing of XLPE. *European Polymer Journal*, 42(3), 553–562. <https://doi.org/10.1016/j.eurpolymj.2005.09.006>
3. Hotelling, H. (1933a). ANALYSIS OF A COMPLEX OF STATISTICAL VARIABLES INTO PRINCIPAL COMPONENTS. *Journal of Educational Psychology*, 24(6), 417–441. <https://doi.org/http://dx.doi.org/10.1037/h0071325>
4. Hotelling, H. (1933b). ANALYSIS OF A COMPLEX OF STATISTICAL VARIABLES INTO PRINCIPAL COMPONENTS DETERMINATION OF PRINCIPAL COMPONENTS FOR INDIVIDUALS. *Journal of Educational Psychology*, 24(7), 498–520.
5. Hotelling, H. (1936). SIMPLIFIED CALCULATION OF PRINCIPAL COMPONENTS. *Psychometrika*, 1(1), 27–35. <https://doi.org/https://doi.org/10.1007/BF02287921>
6. Jackson, J. E. (1991). *A user's guide to principal components*. John Wiley & Sons, Inc. .
7. Jeffers, J. N. R. (1967). Two Case Studies in the Application of Principal Component Analysis. *Applied Statistics*, 16, 225–236. <https://doi.org/10.2307/2985919>
8. Jia, X., & Richards, J. A. (1999). *Segmented Principal Components Transformation for Efficient Hyperspectral Remote-Sensing Image Display and Classification*. *IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING* (Vol. 37).
9. Jolliffe, I. T., & Cadima, J. (2016). Principal component analysis: a review and recent developments. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374(2065). <https://doi.org/10.1098/rsta.2015.0202>
10. Jolliffe, I. T. (2002). *Principal Component Analysis, Second Edition*. New York.

11. Lam, K. C., Tao, R., & Lam, M. C. K. (2010). A material supplier selection model for property developers using Fuzzy Principal Component Analysis. *Automation in Construction*, 19, 608–618. <https://doi.org/10.1016/j.autcon.2010.02.007>
12. Naik, G. R. (2017). *Advances in Principal Component Analysis: Research and Development*. *Advances in Principal Component Analysis: Research and Development*. Springer Singapore. <https://doi.org/10.1007/978-981-10-6704-4>
13. Pearson, K. (1901). On lines and planes of closest fit to systems of points in space. *Philosophical Magazine*, 2(6), 559–572.
14. Reris, R., & Brooks, J. P. (2015). Principal Component Analysis and Optimization: A Tutorial. In *Operations Research and Computing: Algorithms and Software for Analytics* (pp. 212–225). INFORMS. <https://doi.org/10.1287/ics.2015.0016>
15. Shlens, J. (2003). A Tutorial on Principal Component Analysis. Retrieved from <http://arxiv.org/abs/1404.1100>
16. Yang, J., & Yang, J. Y. (2002). From image vector to matrix: A straightforward image projection technique-IMPCA vs. PCA. *Pattern Recognition*, 35, 1997–1999. [https://doi.org/10.1016/S0031-3203\(02\)00040-7](https://doi.org/10.1016/S0031-3203(02)00040-7)
17. Zöllner, M. (2012). Comparison and Empirical Analysis between Principal Component Analysis and Factor Analysis. *University Of Applied Sciences Würzburg-Schweinfurt*. <https://doi.org/10.2991/asshm-13.2013.140>



# TAX RESERVES REGULATION OF INNOVATIVE - INVESTMENT ACTIVITY IN THE RUSSIAN FEDERATION

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## **ABSTRACT**

*The article briefly presents the results of the analysis of certain legislative acts in the field of tax reserves of regulation of innovation and investment activities. Attention is focused on the topic of human intellectual capital, stimulation of inventive and rationalization activities. The Institute of tax regulation is considered as one of the effective tools of innovative and investment development of the economy in modern conditions. The author defines the reserves and directions of improvement of the legislation on taxes and fees in order to improve the innovation and investment activities of economic entities.*

**Keywords:** *innovations, investments, human intellectual capital, investment tax deduction, tax benefits and preferences, investment tax credit, tax subsidy*

## **1. INTRODUCTION**

Ten years ago, the Russian economy took its course on modernization. At the economic forum in Krasnoyarsk, Dmitry Medvedev said that the focus will be on the areas of work that can be figuratively described as four "I" – Institutions, Infrastructure, Investment and Innovation. Of course, the modernization of the economy should take place, first of all, through the innovative development of industries with broad investment, and one of the ways of regulation by the state of innovation and investment is tax regulation and stimulation. Tax reserves of regulation of investment and innovation activities at the present stage is carried out in the form of tax incentives and preferences to persons whose activities are related to innovation, and participants in investment projects. In the first case, this is in one way or another connected with the science-intensive nature of our products, whose share in world production, unfortunately, is not more than 0.5 per cent. The participants of the investment projects need to Finance them on terms defined by the state.

## **2. HUMAN INTELLECTUAL CAPITAL**

In our opinion, it is necessary to focus attention on the topic of human intellectual capital, because, as the analysis of innovative development of Russia shows, the main reserves of tax regulation and incentives are concentrated in the human resources potential, and, more precisely, in the potential of persons engaged in invention and innovation and introducing their ideas into the production chain.

### **2.1. Regulation and stimulation of inventive and rationalization activities**

Accordingly, one of the directions of innovation policy of the state should be aimed at regulating and stimulating inventive and rationalization activities, which would include a set of measures of different nature, starting with organizational and ending with material, for example:

- 1) assistance of the enterprise and the state in registration and obtaining by innovators of patents for inventions, certificates for improvement suggestions;

- 2) maximum encouragement of the activities of persons who are called "kulibins" in Russia. Dmitry Medvedev said at the above-mentioned forum that it is necessary to "...provide people who "love to create and know how" with all the necessary infrastructure-laboratories, computers»;
- 3) the implementation of national mechanism for improving inventors and innovators salaries;
- 4) moral encouragement of inventors and innovators;
- 5) provision of compulsory state insurance of activities of individuals, including individual entrepreneurs without forming a legal entity, in the field of invention and innovation;
- 6) tax regulation, applying the Institute of deferral and installment of tax liabilities, investment tax credit, tax subsidies, as well as through a system of tax deductions, benefits and preferences.

In our opinion, it is the development of the Institute of tax regulation that is one of the most effective tools in modern conditions. In particular, regulation of activity of physical persons in the specified area, it is possible through regulation of article 217 of the Tax code of the Russian Federation (further – TC RF), having added its provision concerning release from the taxation of the income of inventors and innovators or providing them with the tax subsidy, that is repayment by the state of their tax obligations. We believe that the social tax deduction for charity can also have a positive effect if we Supplement article 219 of the TC RF with a provision on the transfer of personal income for inventive and rationalization activities without any restrictions in the tax period.

## **2.2. The shots in the innovation and investment economy**

The personnel issue is very important in the innovation and investment economy. In this case, the state and business should act in unison in terms of training, retraining and advanced training in the field of invention and innovation. The state regulates this activity, respectively, organizations and individual entrepreneurs should be able to apply for these purposes tax incentives. At the same time, for individuals who independently and at their own expense undergo such training in educational institutions in any form, it is necessary to Supplement article 219 (paragraph 2 of paragraph 1) of the TC RF with a provision relating to the receipt by the taxpayer in the tax period of a social tax deduction in the amount actually paid to them. The provisions of article 149 of TC RF to liberate organizations from payment of value added tax the sale (transfer) of exclusive rights to the invention, it is expedient to Supplement the provisions in relation to innovation. For corporate income tax, tax regulation of innovative activities is carried out through the costs of research and/or development work (article 262 of the TC RF), and significant changes in tax legislation in this part came into force on January 1, 2018. However, some provisions can still be improved, for example, by eliminating the limitation of the rule of paragraph 3.1 paragraph 2 of article 262 of the TC RF until December 31, 2020 in terms of costs for the acquisition of exclusive rights to inventions, utility models or industrial designs. In terms of regional and local taxes and fees, the legislative (representative) bodies of the constituent entities of the Russian Federation and municipal entities are given very broad powers under the legislation of the Russian Federation on taxes and fees – from determining the order and terms of payment of relevant taxes and fees to establishing specific tax rates and benefits for certain categories of taxpayers. In this case, it is necessary to find a balance between the interests of the budget system and taxpayers.

## **3. TAX REGULATION OF INVESTMENT ACTIVITY**

Tax reserves of investment activity regulation can be used in the following areas: participation in the implementation of regional investment projects; provision of investment tax credit;

transfer of payment of tax liabilities to a later period; obtaining investment tax deductions; application of a special tax regime in the form of a production sharing agreement.

### **3.1. Regional investment project**

It should be noted that the regional investment project for the purposes of tax regulation in accordance with paragraph 1 of article 25.8 of the TC RF is recognized as a project for the production of goods that meets the requirements:

- 1) production of goods is carried out in the territory of the far East and part of the Siberian Federal districts, including the Irkutsk region, Krasnoyarsk territory, the republics of Tuva and Khakassia;
- 2) production and processing of oil, natural gas and gas condensate, production of excisable goods (except cars and motorcycles), and also the types of activity taxed at the rate of 0 percent on the income tax of the organizations are excluded;
- 3) the minimum amount of capital investments made by Russian organizations is 50 million rubles;
- 4) each regional investment project is implemented by a single participant.

The analysis shows that the effect of paragraph 1 of the above requirements, in our opinion, can be extended to other subjects of the Russian Federation of the Siberian Federal district. For the purpose of investment attractiveness of projects, it is advisable to reduce the minimum amount of capital investments to 10 million rubles. Finally, it is necessary to change the requirements for the implementation of regional investment projects not only by a single participant, but also by several participants on the terms of equity participation and/or co-financing.

### **3.2. Transfer of payment of tax liabilities**

Another form of tax reserve regulation of investments is carried out through the receipt of an investment tax credit by taxpayers. And this should happen without any red tape and on more favorable terms than specified in article 67 of the TC RF. In particular, the interest rate on the loan amount should not exceed  $\frac{1}{2}$  of the refinancing rate of the Central Bank of the Russian Federation, although its actual size ranges from  $\frac{1}{2}$  to  $\frac{3}{4}$ . The decision to grant an investment tax credit should be made three times faster than the existing one – within 10 days from the date of application. Similarly, there should be two other forms of transfer of payment of tax liabilities to a later period – deferrals and installments. In particular, in article 64 of the TC RF it is possible to remove the three-year restriction on the granting of deferral or installments on Federal taxes and insurance contributions in respect of persons engaged in innovative and/or investment activities. In addition, it is advisable to simplify the mechanism for obtaining investment tax deductions by individuals for personal income tax provided in accordance with article 219.1 of the TC RF. For example, you can exclude the mandatory filing of a tax return and provide for automatic tax refund to the account of an individual if the relevant conditions are met.

### **3.3. Production sharing agreement**

Finally, the tax regime in the form of a production sharing agreement in respect of investors – legal entities or in the framework of a simple partnership can be extended to individuals, including individual entrepreneurs without the formation of legal entities. In addition, the possibility of investing these persons in the search, exploration and production of mineral raw materials can be supplemented by other activities not related to mineral raw materials and aimed at the innovative development of the state economy.

#### **4. CONCLUSION**

We believe that the above measures of tax regulation can be implemented in the innovation and investment development of the Russian economy.

#### **LITERATURE:**

1. Medvedev, Dmitry A. (2008). *Speech by first Deputy Prime Minister at the V Krasnoyarsk economic forum*. Retrieved 18.03.2019 from <https://regnum.ru/news/957732.html>
2. Shumyatskiy, Roman I. (2011). *Entrepreneurship in the innovation economy: some aspects of tax incentives*. Economics and innovation: collection of scientific works of the Department of taxation and accounting, Novosibirsk: Sibags Publishing House, 2011, P.106-115.

# THE IMPACT OF TECHNICAL PROCEEDINGS FOR EMPLOYMENT DISMISSAL CASES IN MALAYSIA – AN ANALYSIS

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## **ABSTRACT**

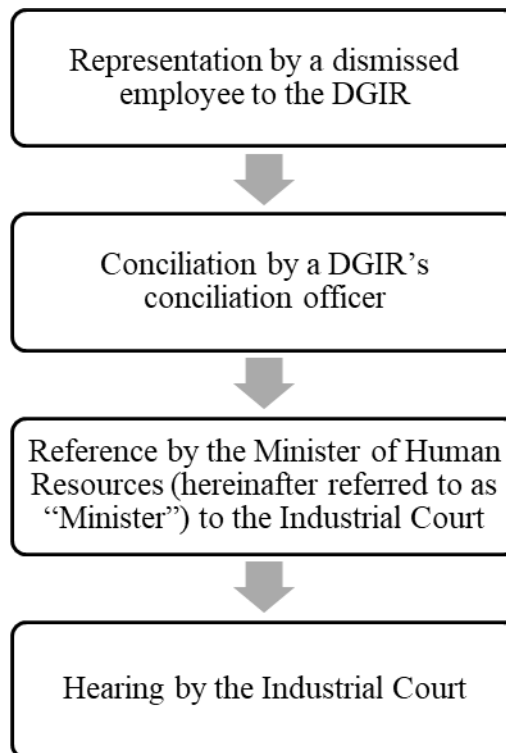
*The purpose of this paper is to explain the essential steps to resolve employment dismissal cases in Malaysia, analyse the technical proceedings for employment dismissal cases and highlight the impact of the technical proceedings towards the settlement of employment dismissal cases. There are three (3) types of technical proceedings that can be commenced by any party involved in the employment dismissal cases, namely, prohibition order, preliminary objection and reference of a question of law to the High Court under S 33A of IRA 1967. In this paper, the authors referred to the relevant statutes, employment dismissal cases, textbook, journal articles and reliable sources from the Internet. The authors discovered that the technical proceedings make settlement of employment dismissal cases more complicated than it needs to be. The technical proceedings lead to undesired problems that defeated the objective of the Industrial Relations Act 1967, which is to resolve all employment dismissal cases fairly and speedily. The authors wish that the findings of this paper will provide insights regarding the technical proceedings for employment dismissal cases in Malaysia.*

**Keywords:** *Employment Dismissals, Impact, Malaysia, Technical Proceedings*

## **1. INTRODUCTION**

According to S 20(1) of the Industrial Relations Act 1967 (hereinafter referred to as “IRA 1967”), a dismissed employee who considers himself being dismissed without just cause or excuse by his employer, may file a representation in writing to the Director General of Industrial Relations (hereinafter referred to as “DGIR”) from the Industrial Relations Department, for reinstatement to his former employment made (International Labour Organization, 2015). In pursuant to S 20(1A) of IRA 1967, a dismissed employee shall file a representation to the DGIR within 60 days from the date of his dismissal made (Mohamed & Baig, 2009, p. 68). There are at least 4 steps to resolve an employment dismissal case in Malaysia. These 4 steps are shown in the Figure 1 below.

*Figure following on the next page*



*Figure 1: Steps to resolve employment dismissal cases in Malaysia*

In Malaysia, an employment dismissal case begins with a dismissed employee makes a representation to the DGIR. Then the DGIR will appoint a conciliation officer within the Industrial Relations Department to conciliate the parties in dispute i.e. the dismissed employee and his former employer (Mohamed, 2004, p. 31). If the conciliation failed, the DGIR will refer such representation to the Minister (Teoh, 2015). The Minister examines the representation and once he confirms that it is not frivolous or vexatious representation, he refers the representation to the Industrial Court (Sivarajah, 2018). Upon the reference made by the Minister, the representation becomes an employment dismissal case. The Industrial Court shall then hear and decide the employment dismissal case (Hassan, 2006, p. 67). The question is when do technical proceedings come into the picture? Technical proceedings may be commenced at the beginning of the Industrial Court's hearing or after a decision is made by the Industrial Court. There are 3 types of technical proceedings for employment dismissal cases in Malaysia, namely, prohibition order, preliminary objection and reference of a question of law to the High Court under S 33A of IRA 1967.

## **2. THREE TYPES OF TECHNICAL PROCEEDINGS FOR EMPLOYMENT DISMISSAL CASES IN MALAYSIA**

### **2.1. Prohibition order**

In the context of employment law, any party of an employment dismissal case may apply for a prohibition order. Applicant of a prohibition order is required to provide valid grounds as to why the Industrial Court shall be prohibited to hear the employment dismissal case (Mohamed, 2004, p. 59). A prohibition order is to be granted by the High Court and it shall be applied at the beginning of the Industrial Court's hearing (Mohamed, 2004, p. 59). More often than not, it is the employer-party who applies for a prohibition order from the High Court (Mohamed, 2004, p. 59). In *Assunta Hospital v Dr. A. Dutt* [1981] 1 MLJ 115, Dr Dutt made a representation under S 20 of the IRA 1967, that he was dismissed by his employer without just cause or excuse. The Minister of Human Resources (hereinafter referred to as "Minister") referred his representation to the Industrial Court.

However, the employer-party, Assunta Hospital applied for a prohibition order from the High Court to restrain the Industrial Court to hear this case. The Assunta hospital relied on 3 grounds, namely, (i) claimant (Dr Dutt) is not a citizen of Malaysia; (ii) claimant is not a workman according to S 20(1) of IRA 1967; and (iii) Chairman of the Industrial Court shall not sit alone, without a panel and without consent of the parties. The High Court dismissed the said application, then the Assunta Hospital appealed to the Federal Court. The Federal Court dismissed the appeal and remitted this case back to the Industrial Court.

## **2.2. Preliminary objection**

At the outset of the Industrial Court's hearing, any party of an employment dismissal case may raise a preliminary objection to challenge the Industrial Court's jurisdiction to hear the employment dismissal case in concerned. Once a preliminary objection is raised, the Industrial Court shall put the employment dismissal case on hold and proceed to decide the preliminary objection first i.e. whether it possesses the jurisdiction to hear the employment dismissal case in concerned (Mohamed, 2004, p. 58). Nevertheless, the Industrial Court's decision on preliminary objection is challengeable by way of judicial review at the High Court and the High Court's decision on the judicial review is challengeable by way of appeal to the Court of Appeal and subsequently to the apex court of the country i.e. Federal Court. In *American International Assurance Co Ltd v Dato Lam Peng Chong & Ors* [1999] 2 CLJ 771, the appellant raised a preliminary objection that the Industrial Court had no jurisdiction to decide the dismissal case as the claimants were not 'workmen' according to S 20(1) of IRA 1967. The Industrial Court dismissed the preliminary objection. The appellant commenced judicial review against the Industrial Court's decision and it was dismissed by the High Court. The appellant then appealed to the Court of Appeal and it was again dismissed by the Court of Appeal. The Court of Appeal then remitted this case back to the Industrial Court to decide on the main issue of whether the claimants were dismissed without just cause or excuse.

## **2.3. Section 33A of IRA 1967 – Refer a Question of Law to the High Court**

Section 33A(1) IRA 1967 specifies that after the Industrial Court reached a decision, the Industrial Court has a discretion to act upon an application made by any party who receives the said decision to refer a question of law to the High Court (Mohamed & Baig, 2009, p. 462). S 33A(1) of IRA 1967 permits the filing of application to challenge the Industrial Court's decision on question of law at the High Court and the party shall file such application within 30 days from the date on which the decision of Industrial Court has been made (International Labour Organization, 2015). Although the Industrial Court has discretion to grant leave for such application, the Industrial Court's decision on such application may be subjected to judicial review and appeals (Mohamed & Baig, 2009, p. 481). If the Industrial Court decides to refer the application/question of law to the High Court, then the High Court is empowered with jurisdiction to hear such application/question of law and may confirm, vary, substitute, or maintain or quash the Industrial Court's award as it deems fit. *Dreamland Corporation (M) Sdn Bhd v. Choong Chin Sooi & Anor* [1988] 1 MLJ 111, the appellant company dismissed the first respondent by a letter of dismissal with immediate effect. The first respondent claimed that the dismissal was without just cause and excuse and it violated the principles of natural justice as there was no domestic inquiry conducted before the dismissal. The Industrial Court held that it was a lawful dismissal as the first respondent had committed misconduct. The Industrial Court further held that since there was no domestic inquiry conducted, the first respondent shall entitle to back wages (from the date of dismissal to the date where the decision is made). The appellant company was dissatisfied with the said Industrial Court's decision and thus applied for a reference of questions of law to the High Court.

Such an application was dismissed by the High Court. The appellant company then appealed to the Supreme Court (currently known as the “Federal Court”). The questions of law were as follows:

- 1) Does the Industrial Court have jurisdiction to grant compensation to a workman whose dismissal has been upheld by the Industrial Court itself?
- 2) Does the Industrial Court have jurisdiction to amend the date of dismissal of the workman so that the workman is deemed to be in employment until the date of the award and thereby becomes entitled to back wages?

The Supreme Court upheld the decisions of the Industrial Court and the High Court i.e. the first respondent was dismissed with just cause and excuse. However, the Supreme Court quashed the decisions of the Industrial Court and the High Court in amending the date of dismissal and in awarding compensation as a consequence of such amended date.

### **3. IMPACT OF TECHNICAL PROCEEDINGS FOR EMPLOYMENT DISMISSAL CASES IN MALAYSIA**

#### **3.1. Justice delayed is justice denied**

S 30(3) of IRA 1967 provides that the Industrial Court shall make its decision without delay and, if possible, within thirty (30) days from the date of reference to it (International Labour Organization, 2015). However, such a timeline is rarely met by the Industrial Court especially when any of the technical proceedings is raised by a party. In *Coshare Sdn Bhd v Wan Masnizam Wan Mahmood* [2006] 1 ILR 35, Rajendran Nayagam, Chairman of the Industrial Court highlighted that:

*“s. 20(1) of the Act requires representation to be made within (60) days of the dismissal and s. 30(3) requires the court to make its award without delay and where practicable within (30) days from the date of reference. Therefore, time is of the essence in dismissal cases. This is the spirit and intendment of the Act.”*

In *Assunta Hospital v Dr. A. Dutt* [1981] 1 MLJ 115, Chang Min Tat FJ, speaking for the Federal Court, revealed that, due to the technical proceedings of prohibition order, the case had encountered years of delays in settlement and as a result, injustice had ensued. He quoted Lord Denning M.R. in *Allen v Sir Alfred McAlpine & Sons Ltd* [1968] 2 Q.B. 229, regarding delays in settlement of cases and the injustice arising therefrom:

*“In these ... cases, the law’s delays have been intolerable. They have lasted so long as to turn justice sour.”*

Additionally, Chang Min Tat FJ (as he then was) also quoted Lord Wilberforce in *Tolley v Morris* [1979] 1 WLR 592:

*“Whatever the cause of the delay, whether it is want of prosecution or any other cause, it occasions a failure of justice.”*

#### **3.2. Defeating the objective of IRA 1967 i.e. fair and speedy settlement**

The main objective of IRA 1967 is to resolve employment cases expeditiously and at the same time maintain industrial peace and harmony (Lobo, 2000, p. 6). S 30(5) of IRA 1967 provides that the Industrial Court is statutorily bound to act according to equity, good conscience and the substantial merits of the case without regard to technicalities and legal form (International Labour Organization, 2015).



Hence, it is clear that the Industrial Court was designed to be less formal than that encountered in the civil courts (Pathmanathan, Kanagasabai & Alagaratnam, 2003, p. 30). In *American International Assurance Co Ltd v Dato Lam Peng Chong & Ors* [1999] 2 CLJ 771, Gopal Sri Ram JCA, speaking for the Court of Appeal has highlighted the delays in settlement due to preliminary objection and due to the delays, objective of the IRA 1967 is defeated:

*“Here is a case where the Minister made a reference in 1985; now after a passage of almost 14 years, all we have is a finding that the respondent was a workman. The other critical issues whether the respondents were dismissed and whether their dismissal was for a just cause are yet to be decided. Most surely, this cuts across the very purpose for which Parliament passed the Act.”*

In addition, in *Kathiravelu Ganesan & Anor v Kojasa Holdings Bhd* [1997] 3 CLJ 777, Gopal Sri Ram JCA had appropriated pointed out that:

*“... having regard to the general scheme of the Act, Parliament did not intend a threshold jurisdiction challenge before the Industrial Court by way of a preliminary objection. For the legislature's paramount concern in passing the Act is to ensure speedy disposal of industrial disputes. And permitting preliminary objections to the threshold jurisdiction being taken will only delay industrial adjudication. Take this very case. The appellant's services were terminated in January 1989. The Minister made his reference on 13 September 1990. At present, some six years later, all that has been decided is that the Industrial Court was right in concluding that it had threshold jurisdiction. The merits of the appellant's representations are yet to be investigated into. In a war of attrition such as this, it is always the workman who suffers ...”*

### **3.3. Exorbitant Legal Fees**

Delays equate to exorbitant legal fees for parties involved in the prolonged employment dismissal cases. However, the dismissed employee is the party that suffers the most (Dhillon, 2012, p. 10-11). If an employment dismissal cases was to go all the way to the Federal Court due to the initiation of technical proceedings, a party could be asked to fork out at least RM 100,000 for all the legal fees involved (Dhillon, 2012, p. 10-11). Eusoff Chin CJ in *R Rama Chandran v Industrial Court of Malaysia & Anor* [1997] CLJ 147, acknowledged that it is an unequal battle between the parties of employment dismissal cases as the employer-party is usually much more financially capable than the dismissed employee.

### **3.4. Abuse of Court Procedures**

There are instances where, a party, usually the employer, purposely commenced a technical proceedings to prolong the settlement of an employment dismissal case (Mohamed, 2004, p. 8). The intention of prolonging the settlement process is to frustrate the dismissed employees financially and mentally (Mohamed, 2004, p. 8). Regrettably, it is possible that such a wicked tactic was suggested by an unethical lawyer who is from the profession of upholding justice. Certainly, such a wicked tactic may also come from the employer himself although he or she knew that there is a slim chance of winning the case of technical proceedings. The Supreme Court of India in *Bharat Singh v New Delhi Tuberculosis Centre* [1986] AIR 842 had aptly pointed out that such a situation is real and undesirable:

*“Instances are legion where workmen have been dragged by the employers in endless litigation with preliminary objections and other technical pleas to tire them out.*

*A fight between a workman and his employer is often times an unequal fight ... because of the long pendency of disputes in tribunals and courts, an account of the dilatory tactics adopted by the employer, workmen had suffered.”*

#### **4. CONCLUSION**

In conclusion, the technical proceedings have caused negative impact towards the settlement of employment dismissal cases. The negative impact are delays in settlement, defeating the objective of IRA 1967, exorbitant legal fees incurred and abuse of court procedures. Due to the commencement of technical proceedings, the employment dismissal cases are not being resolved fairly and speedily. In a court battle for employment dismissal case, a fair and speedy settlement is especially crucial to the dismissed employee, who had lost his or her main source of livelihood. Hence, it is timely to reform the current technical proceedings for employment dismissal cases in Malaysia.

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#### **LITERATURE:**

1. Dhillon, G. (2012). Current judicial review & appeals in industrial relations disputes unfairness of the highest order to the workman. *Legal Network Series* (p. 10-11).
2. Hassan, K H. (2006). Issues Relating to Pre-Adjudication of Industrial Disputes. *Jurnal Undang-undang dan Masyarakat (Malaysian Journal of Law and Society)* (p. 67). Bangi: The National University of Malaysia.
3. Industrial Relations Act 1967. (2015). Retrieved 8 January 2019 from <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/48066/99440/F1841123767/MYS48066.pdf>
4. Lobo. B. (2000). Current Trends in Judicial Review in Employment Law. *Industrial Law Report*. (p. 6). Kuala Lumpur: Current Law Journal.
5. Mohamed, A A. (2004). A critical appraisal of the adjudication process of dismissal under the Industrial Relations Act 1967. *INSAF (Journal of the Malaysian Bar)* (p. 31, 58-59). Kuala Lumpur: The Malaysian Bar.
6. Mohamed, A. A. & Baig F. B. (2009). *Procedure for Unfair Dismissal Claims in Malaysia*. Petaling Jaya: Lexis Nexis.
7. Pathmanathan N., Kanagasabai S. K. & Alagaratnam S. (2003). *Law of Dismissal*. Kuala Lumpur: Commerce Clearing House (Malaysia).
8. Teoh, M J. (2015). *Knowing the employee's right – how to claim for unfair dismissal?* Retrieved 7 March 2019 from <https://hhq.com.my/new/article/knowning-the-employees-right-how-to-claim-for-unfair-dismissal/>
9. Sivarajah, R V. (2018). *Recent Developments In Employment And Industrial Law Practice Post GE 14* Retrieved 26 February 2019 from [http://www.nhrc.com.my/rss/-/asset\\_publisher/hCox5XdI5nGy/blog/id/6311744](http://www.nhrc.com.my/rss/-/asset_publisher/hCox5XdI5nGy/blog/id/6311744)

# GLOBALIZATION AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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## **ABSTRACT**

*The main goal of this paper is to show the level of globalization, its changes and the rate of economic growth that have taken place in the developing countries. The aim is also to present the impact of globalization on economic growth in these countries. The following research methods were used: historical, literature, descriptive analysis and simple statistical methods. Statistical data used in this paper come from KOF (KOF Index of globalization and its 3 subindices), World Bank Database and Human Development Reports (United Nations Development Programme). The time range of research is 1990-2018. The research covered 31 countries with GNI per capita \$995 or less – »low income economies« (World Bank). The main chapters of this study are as follows: 1. Introduction; 2. The level of globalization in developing countries (2018 KOF Index of globalization and its 3 subindices: economic, social and political globalization); 3. The changes in the level of globalization in developing countries (the changes that have taken place since the 1990s); 4. The economic growth in developing countries (real GDP per capita average annual growth rate, GDP per capita, HDI Index); 5. Globalization and economic growth in developing countries (the influence of globalization on some indices of economic growth and socio-economic development was examined); 6. Conclusions (the level of globalization of this group of countries has increased significantly, the rate of economic growth is similar to the world average, but it varied across the countries, positive impact of globalization on economic growth was noted).*

**Keywords:** *Developing countries, Economic growth, Globalization*

## **1. INTRODUCTION**

The process of globalization encompasses an increasing number of countries. We all live in the globalizing world. In principle, there is no country that would not be affected by it. However, the level of globalization of individual countries is diverse. We say that some of them are more globalized than others. There is no doubt that highly developed countries are more globalized. How do developing countries look like against them? What changes are taking place in this group of countries? Do these countries follow the path chosen by countries at a higher level of development? The above issues are discussed in this study. The main goal of this paper is to show the level of globalization, its changes and the rate of economic growth that have taken place in the developing countries. The aim is also to present the impact of globalization on economic growth in these countries. The impact of globalization on economic growth is one of the main aspects of the globalization studies. Researchers are increasingly interested in the process. Globalization is expected to promote economic growth for many reasons<sup>1</sup>. The results of many empirical studies suggest that globalization has extended positive effect on economic growth. Globalization indeed promotes growth (Dreher, 2006, pp. 1091-1110). Several studies have shown that more globalized countries are also more sustainable (Martens et al., 2010, pp. 574-582). The evidence shows that globalization has spurred economic growth, promoted gender equality and improved human rights. It increased, though contributed to income inequality (Potrafke, 2015, pp. 509-522).

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<sup>1</sup> Grossman and Helpman (2015, pp. 100-104) write more on this topic. See also Crafts (2004, pp. 45-58), who shows historical evidence on the relationship between globalization and economic growth.

Some studies try to show whether the globalization brings about the convergence in per capita income (Villaverde and Maza, 2011, pp. 952-971). Other suggest that rather developing instead of industrialized countries enjoy economic growth during globalization<sup>2</sup>. Hayaloglu (Hayaloglu et al., 2015, pp. 119-151) showed that the impact of globalization on economic growth varies depending on the level of development of individual countries. Is it really so? The attempt to verify some of these theses will be undertaken in this paper. The research covered 31 developing countries of the world's poorest countries, namely: Afghanistan, Benin, Burkina Faso, Burundi, Central African Republic (CAR), Chad, Comoros, Congo Democratic Republic (Congo DR), Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau (Guinea-B.), Haiti, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Syrian Arab Republic (Syria), Tajikistan, Tanzania, Togo, Uganda, Yemen Republic (Yemen), Zimbabwe. These are the countries classified by the World Bank as the 'low-income economies'<sup>3</sup>. The study did not cover North Korea, South Sudan and Somalia (also belonging to this group) for which there are no data on the level of globalization. The basis for considering the changes in the level of globalization will be the KOF Index of Globalization developed in 2002. It was introduced by A. Dreher (2006, pp. 1090-1110) and updated in Dreher et al. (2008). The second revision of this index dates from 2018 (Gygli et al., 2019). It is developed and published annually. In addition, the above index has been developed for earlier years. The other globalization indices do not have these features, for example, Maastricht Globalisation Index (Figge and Martens, 2014, pp. 875-893), New Globalisation Index (Vujakovic, 2010, pp. 237) and many others (Martens et al., 2014, pp. 217-228). To describe the current level of globalization, the 2018 KOF Index of Globalization (rankings for the year 2015) was adopted, and the previous indices were used to show the changes. The KOF index has three dimensions, namely: economic globalization, social globalization and political globalization. As a result, in addition to the global index of globalization, 3 sub-indices were created. Each of them is calculated on the basis of several indicators. In addition, each of them is assigned a specific weight. These indices will also be used in this paper. Statistical data on economic growth and the level of GDP per capita come from the World Bank. Information about Human Development Index (HDI) for those countries come from Human Development Reports (United Nations Development Programme). The time range of the research is 1990-2018. In some cases – due to the lack of data – the investigated period is shorter.

## 2. THE LEVEL OF GLOBALIZATION

The latest KOF globalization index (2018), as well as subindices, for developing countries and their place in the world ranking, is given in Table 1.

*Table following on the next page*

<sup>2</sup> Bergh and Karlsson (2010, pp. 195-213) present evidence for OECD countries. Samini and Jenatabadi (2014, pp. 1-7) for countries of the Organization of Islamic Cooperation (OIC).

<sup>3</sup> For the fiscal year 2019 'low-income economies' are defined as countries in which GNI per capita, calculated according to the World Bank Atlas Method, amounted to 995 US\$ in 2017 or less. Other groups are: 'lower middle-income economies' (996-3,895 US\$), 'upper middle-income economies' (3,896-12,055 US\$) and 'high-income economies', (12,056 US\$ or more) (World Bank Database).

*Table 1: 2018 KOF Index of Globalization in developing countries (KOF)*

Globalization Index		Economic Globalization		Social Globalization		Political Globalization	
92.Senegal	60.48	71.Liberia	61.61	138.Senegal	51.53	54.Senegal	80.67
111.Burkina Faso	54.64	96.Rwanda	53.20	142.Zimbabwe	48.86	62.Ethiopia	78.88
117.Togo	53.63	98.Haiti	52.94	145.Comoros	47.74	63.Tanzania	77.98
120.Liberia	53.19	105.Togo	51.75	148.Tajikistan	46.84	76.Burkina Faso	73.81
126.Uganda	52.66	110.Gambia	50.73	150.BurkinaFaso	45.54	80.Congo DR	72.04
129.Rwanda	52.32	116.Uganda	49.80	152.Gambia	44.87	84.Benin	70.64
133.Yemen	51.15	117.Mozambique	49.71	153.Benin	44.68	87.Uganda	70.41
135.Zimbabwe	51.10	122.Senegal	48.10	156.Nepal	43.73	91.Zimbabwe	69.88
136.Gambia	51.04	128.Sierra Leone	45.80	163.Togo	42.79	92.Mali	69.84
140.Mali	50.26	133.Burkina Faso	43.41	164.Syria	42.47	94.Yemen	68.94
142.Benin	48.99	134.Yemen	43.24	165.Malawi	42.41	98.Guinea	68.37
144.Niger	48.35	137.Mali	41.02	170.Yemen	40.30	102.Nepal	67.38
146.Mozambique	48.21	139.Niger	40.28	171.Haiti	40.20	109.Rwanda	65.60
148.Tanzania	48.06	140.Tajikistan	40.28	172.Niger	39.47	110.Togo	64.98
150.Haiti	47.33	144.Comoros	39.87	173.Mali	39.42	113.Niger	64.23
152.Sierra Leone	46.96	147.Madagascar	38.57	175.Mozambique	39.40	115.Madagascar	63.49
153.Madagascar	46.78	153.Guinea-B.	35.34	176.Liberia	39.38	120.Malawi	62.02
154.Malawi	46.24	155.Syria	34.67	179.Madagascar	38.29	126.Syria	59.39
158.Nepal	45.59	156.Zimbabwe	34.55	180.Uganda	37.76	127.Chad	59.26
160.Syria	45.51	158.Malawi	34.10	183.Rwanda	37.47	128.Burundi	59.23
162.Tajikistan	45.47	163.Benin	31.09	183.Burundi	36.48	129.SierraLeone	58.69
163.Guinea	45.01	164.Tanzania	30.86	184.SierraLeone	35.93	134.Gambia	57.22
168.Ethiopia	45.21	165.Afghanistan	30.36	185.Guinea	35.80	136.Liberia	56.56
174.Congo DR	41.14	167.Guinea	29.69	186.Guinea-B.	35.51	139.Mozambique	55.12
178.Guinea-B.	40.39	168.Chad	29.58	187.Tanzania	35.33	144.CAR	51.68
179.Comoros	40.20	172.Congo DR	25.71	188.Afghanistan	34.40	148.Tajikistan	49.28
180.Chad	40.08	173.Nepal	25.58	192.Ethiopia	28.59	149.Haiti	48.98
182.Burundi	38.95	175.CAR	23.86	193.Chad	28.41	150.Guinea-B.	48.77
183.Afghanistan	38.66	176.Burundi	21.13	195.CAR	27.07	152.Afghanistan	47.59
184.CAR	34.71	178.Ethiopia	20.05	196.Eritrea	26.55	169.Comoros	34.25
185.Eritrea	28.68	186.Eritrea	n.a.	197.Congo DR	24.73	179.Eritrea	27.58

Senegal is the most globalized country according to KOF (2018). This is the only country at the top 100 of the world ranking and the only one with more than 60 points (0-100). It is followed by Burkina Faso and other 8 countries which reached much fewer points (over 50). Next 17 countries reached from 40 to 50 points. The last 4 countries did not get 40 points. The lowest position (185<sup>th</sup>) in this group of countries was taken by Eritrea (less than 30 points). The difference between the most and the least globalized country is very big – almost 34 points. Liberia is ranked first (71<sup>st</sup> position in the world ranking) in the economic globalization (the only country with more than 60 points). Rwanda was second, Haiti – third (also at the top 100). Together with Togo and Gambia reached more than 50 points. The other countries gained much fewer points: 9 between 30 and 40, 7 less than 30. Ethiopia – the last country in this ranking (178<sup>th</sup> position) – reached only 20 points. The difference between the most and the least globalized country in the economic globalization ranking is much bigger than in overall ranking (over 40 points). In the ranking of social globalization, Senegal also took first place, but gained much fewer points (the only country with more than 50 points) and was placed on 138<sup>th</sup> position in the world ranking. 12 countries reached 40-50, 13 countries 30-40 and 5 countries less than 30 points. All countries took much worse position than in other rankings. The difference between the most and the least globalized country is lower (about 26 points). More diverse – compared to the earlier subindices – is the ranking of political globalization. Senegal is again the most globalized country. With about 80 points, she took 54<sup>th</sup> position (the highest). Ethiopia is second, Tanzania – third (very close to 80 points).

As many as 11 countries are at the top 100. Many other countries also occupy in this ranking higher places. At the end there are Comoros and Eritrea. The last Eritrea was only on 179th position with about 27 points, 53 points less than Senegal (the biggest difference).

### 3. THE CHANGES IN THE LEVEL OF GLOBALIZATION

The KOF provides the information that allows us to identify the changes that have taken place in the level of globalization in developing countries since the 1990s. It is shown in Table 2.

*Table 2: KOF Index of Globalization 1990-2018 in developing countries (KOF)*

Country	1990	2000	2010	2018
Senegal	36.78	47.70	52.55	60.48
Burkina Faso	26.46	36.51	44.33	54.64
Togo	36.95	39.74	48.35	53.63
Liberia	22.55	26.77	30.35	53.19
Uganda	19.79	33.00	44.24	52.66
Rwanda	17.26	24.94	41.88	52.32
Yemen	28.91	36.29	45.91	51.15
Zimbabwe	29.23	44.63	48.66	51.10
Gambia	38.73	46.50	51.00	51.04
Mali	24.58	35.46	45.60	50.26
Benin	21.13	35.94	42.85	48.99
Niger	25.33	30.12	41.77	48.35
Mozambique	28.33	41.70	45.53	48.21
Tanzania	22.86	32.02	37.31	48.06
Haiti	23.99	28.34	39.66	47.33
Sierra Leone	28.21	30.92	38.90	46.96
Madagascar	21.92	30.16	41.61	46.78
Malawi	30.90	36.48	42.11	46.24
Nepal	22.27	34.64	38.53	45.59
Syria	32.17	38.14	46.22	45.51
Tajikistan	32.51 <sup>a</sup>	36.47	44.31	45.47
Guinea	29.89	40.07	40.41	45.01
Ethiopia	24.95	31.07	37.54	45.21
Congo DR	20.16	25.43	40.45	41.14
Guinea-B.	30.58	30.70	36.95	40.39
Comoros	20.16	24.81	30.51	40.20
Chad	19.53	24.74	37.74	40.08
Burundi	18.45	24.48	31.36	38.95
Afghanistan	20.01	23.09	30.92	38.66
CAR	21.76	26.54	35.58	34.71
Eritrea	15.43 <sup>a</sup>	21.57	25.93	28.68

*a – 1995 (in 1990 these countries did not exist yet)*

The increase in the level of globalization took place in all the countries. In the period 1990-2018, the index increased most in Rwanda, Uganda and Liberia (by over 30 points), next in Burkina Faso, Benin, Mali and Tanzania (by 20-30 points). In terms of percentage points the changes were much bigger, e.g. over 200% in Rwanda and over 100% in 12 other countries. As a result, these countries significantly improved their position in the 2018 ranking in comparison with the 1990 ranking. Rwanda moved up to 24, Uganda – 22, Liberia – 15, Burkina Faso – 13 and Benin – 12 places. The lowest increase in the level of globalization (less than 10 points) was in Guinea Bissau, next in Gambia, CAR, Tajikistan, Eritrea and Syria (10-15 points). In terms of percentage points the changes were also much lower, by about 30% in Gambia and Guinea-B. and by about 40% in Tajikistan and Syria. These countries dropped in the 2018 ranking in comparison with the 1990 ranking: Guinea-B. by 18, Tajikistan – 17, Syria – 15 and

Gambia – 8 places. The largest increase was recorded by countries with a very low (Rwanda, Uganda) or average (Liberia, Burkina Faso) level of globalization in the base year. The largest drop was recorded by countries with rather high level of globalization in 1990 (Tajikistan, Syria, Guinea-B.). The increase in the level of globalization in countries with the highest index (Gambia, Togo, Senegal) and in countries with the lowest index (CAR, Eritrea, Afghanistan) was rather low. As a result, the differences between them increased. If in 1995 the difference between the most and the least globalized was 23.3 points, it increased to 31.8 points in 2018. Hence the divergence in the level of globalization is apparent in developing countries <sup>4</sup>.

#### 4. THE ECONOMIC GROWTH AND SOCIO-ECONOMIC DEVELOPMENT

The rate of economic growth that is measured by an increase in the real GDP of developing countries in the years of 2000-2017 (statistical data for earlier period for many countries are not available) is presented in Table 3.

*Table 3: GDP per capita growth % (World Bank Database)*

Country	2017	2016	2015	2014	2013	2012	2011	2010	2000-2017
Afghanistan	0.1	-0.5	-1.5	-0.5	2.2	9.1	-2.6	11.2	-
Benin	3.0	1.1	-0.7	3.4	4.2	1.9	0.1	-0.7	1.,4
Burkina Faso	3.3	2.9	0.9	1.3	2.7	3.3	3.5	2.2	2.5
Burundi	-2.6	-3.7	-6.8	1.2	19	1.4	0.9	1.8	-0.5
CAR.	2.8	3.4	4.1	0.7	-36.8	3.8	2.7	2.0	-0,
Chad	-5.9	-9.1	-0.5	3.5	2.3	5.3	-3.2	9.9	3.3
Comoros	0.4	-0.1	-1.2	-1.3	2.0	0.7	1.5	1.3	0.6
Congo DR	04	-0.9	3.4	5.9	4.9	3.6	3.4	3.6	1.4
Eritrea	-	-	-	-	-	-	6.6	0.3	-
Ethiopia	7.6	4.9	7.6	7.5	7.7	5.8	8.3	9.6	6.1
Gambia	1.5	2.6	2.7	-4.0	1.6	2.3	-7.3	3.2	1.0
Guinea	7.8	7.7	1.4	1.3	1.6	3.6	3.3	2.5	2.4
Guinea-B.	3.3	3.6	3.5	-1.6	0.6	-4.2	5.4	2.0	0.9
Haiti	-0.1	0.2	-0.1	1.4	2.8	1.4	4.0	-6.,9	-0.3
Liberia	-0.1	-4.0	-2.4	-1.7	6.0	5.1	5.0	2.4	-0.2
Madagascar	1.4	1.4	0.4	0.6	-0.5	0.2	-1.3	-2.5	0.1
Malawi	1.0	-0.5	-0.2	2.7	2.2	-1.1	1.8	3.7	1.2
Mali	2.3	2.7	2.9	4.0	-0.6	-3.7	0.1	2.1	1.7
Mozambique	0.8	0.8	3.6	4.4	4.1	4.1	4.0	3.6	4.0
Nepal	6.7	-0.5	4.7	2.9	3.6	2.3	3.7	3.5	3.0
Niger	1.0	1.0	0.4	3.5	1.3	7.6	-1.5	4.3	0.9
Rwanda	3.5	3.4	6.2	5.0	2.1	6.1	5.0	4.5	5.0
Senegal	4.2	3.2	3.3	3.5	-0.2	2.0	-1.5	0.6	1.6
Sierra Leone	2.0	3.8	-22.3	2.2	18.0	12.6	3.9	2.9	3.0
Syria	-	-	-	-	-	-	-	-	-
Tajikistan	5.4	4.6	3.7	4.3	5.0	5.1	5.0	4.2	5.5
Tanzania	3.9	3.7	3.7	3.7	4.0	1.9	4.6	3.1	3.5
Togo	1.8	2.5	3.1	3.2	3.3	3.7	3.6	3.3	1.0
Uganda	0.5	1.4	1.8	1.6	0.1	0.4	5.7	2.1	2.7
Yemen	-8.2	-15.7	-18.6	-2.7	2.1	-0.3	-15.0	4.8	-0.4
Zimbabwe	2.3	-1.6	-0.6	0.0	-0.3	14.1	11.8	17.3	-1.3
Low income	2.5	0.6	0.8	3.1	3.0	3.7	1.5	4.4	2.0
World	2.0	1.3	1.7	1.6	1.4	1.3	2.0	3.1	1.7

The average annual rate of the economic growth in developing countries (low income) in the years 2000-2017 was similar (slightly higher) to the global average (World). The highest was in Ethiopia and Tajikistan (3 times higher than world average), next in Rwanda, Mozambique

<sup>4</sup> It is worth adding that in a similar period in the group of former socialist countries, and now EU member states, the convergence process was very visible (Swadźba, 2017, p. 2862-2869).

and Tanzania (twice higher). The lowest was in Zimbabwe, CAR, Burundi, Yemen, Haiti and Liberia (negative economic growth). It means that it varied significantly among individual countries. We can see this big diversity almost every year (for example see 2017). This is the specific nature of economic growth in this group of countries. Positive and negative economic growth rate was observed alternately in almost all countries. Only 3 countries (Rwanda, Tajikistan and Tanzania) recorded a positive growth rate in the entire analysed period. A negative growth rate occurred as many as 11 times in Zimbabwe, 9 times in Haiti, 8 times in Chad, Comoros and Eritrea. It was not related to cyclical fluctuations occurring in the global economy. For example, in 2009, when the world recorded a negative growth rate, the economic growth rate was negative in 6 countries only (in addition, it was not a big decline in GDP). The highest growth rate (above 20%) was achieved by Chad (2004) and Sierra Leone (2002), the lowest (above -20%) by RCA (2013), Liberia (2004) and Sierra Leone (2015). Large fluctuations were characteristic also for Zimbabwe. The reasons for the fluctuations in those countries are: wars, internal conflicts (civil wars), dependence of their economies on the export of raw materials, which prices vary on the global market, and other factors. The rate of economic growth affects the level of GDP per capita. It is shown in Table 4.

*Table 4: GDP per capita and HDI (World Bank Database, Human Development Reports)*

	GDP per capita, PPP (current international US\$)		GDP per capita (constant 2010 US\$)		HDI	
	2000	2017	2000	2017	2000	2017
Afghanistan	n.a.	1972	n.a.	584	n.a.	0.498
Benin	1321	2272	694	862	0.398	0.515
Burkina Faso	852	1862	435	686	0.286	0.423
Burundi	567	734	228	213	0.303	0.417
CAR	644	726	412	335	0.309	0.367
Chad	787	1941	463	823	0.299	0.404
Comoros	1893	2745	1295	1356	n.a.	0.503
Congo DR	454	887	290	409	0.333	0.457
Eritrea	1351	n.a.	572	n.a.	n.a.	0.440
Ethiopia	490	1899	197	550	0.283	0.463
Gambia	1228	1696	530	528	0.385	0.460
Guinea	1126	2242	573	824	0.329	0.459
Guinea-B.	1081	1700	531	604	n.a.	0.455
Haiti	1379	1815	767	729	0.442	0.498
Liberia	1032	1283	607	545	0.387	0.435
Madagascar	1145	1555	430	422	0.456	0.519
Malawi	686	1202	385	486	0.399	0.477
Mali	1160	2213	554	763	0.308	0.427
Mozambique	445	1248	257	519	0.298	0.437
Nepal	1220	2697	459	732	0.446	0.574
Niger	597	1017	322	396	0.252	0.354
Rwanda	630	2039	327	765	0.335	0.524
Senegal	1900	3450	1104	1448	0.380	0.505
Sierra Leone	724	1527	304	462	0.284	0.419
Syria	n.a.	n.a.	n.a.	n.a.	0.590	0.536
Tajikistan	940	3195	416	1020	0.550	0.650
Tanzania	1174	2946	497	901	0.395	0.538
Togo	970	1660	526	650	0.425	0.503
Uganda	832	1864	412	667	0.398	0.516
Yemen	3086	2601	1138	693	0.443	0.452
Zimbabwe	2270	2428	1409	1088	0.440	0.535
Low income	1101	2154	521	746	-	-
World	7936	16953	8178	10.636	-	-

In 2000, the highest level of the GDP per capita was reported in Yemen (about 3000 current international US\$), next in Zimbabwe (above 2000). The lowest in Mozambique and Congo DR (less than 500 US\$). In 2017, it was much higher in all countries, except for Yemen (16% lower).



2 countries (Ethiopia and Tajikistan) tripled their GDP per capita, 7 (Mozambique, Tanzania, Chad, Uganda, Nepal, Burkina Faso and Sierra Leone) – doubled. A very small increase was recorded in Zimbabwe, CAR, Liberia and Burundi (less than 30%). The total increase of GDP per capita in this group of countries (low income) was 95.6% (smaller than the world average – 114%). As far as GDP per capita (constant 2010 US\$) is concerned, the increase was smaller (43%) and 5 countries, i.e. (Burundi, CAR, Gambia, Madagascar and Yemen (the highest decrease) recorded decrease in their GDP. The changes have also taken place in socio-economic development. The average annual HDI growth differed from country to country. The differences were significant. The increase in the level of HDI index took place in all countries, except for Syria. The lowest increase was in Yemen. The highest level of HDI Index in 2017 was reported in Tajikistan, the lowest in Niger and CAR.

## 5. GLOBALIZATION VS. ECONOMIC GROWTH IN DEVELOPING COUNTRIES

The influence of globalization (KOF Index of Globalization) on some indices of economic growth and socio-economic development in developing countries (low income) was examined in this paper. They are: GDP per capita, GDP per capita (PPP), HDI Index, GDP growth rate. It was analysed by regressing KOF Index of Globalization (2018) as dependent variable against the above mentioned factors as independent variables. Regression functions (y) and coefficient of determination ( $R^2$ ) for these relationships, both for the general globalization index and the economic globalization index, are included in Table 5.

*Table 5: Regression function (y) and coefficient of determination  $R^2$*

Correlation	Regression function	$R^2$
Index of globalization (2018) vs. GDP per capita (2017)	$y = 0.0072x + 42.129$	$R^2 = 0.1255$
Index of economic globalization (2018) vs. GDP per capita (2017)	$y = 0.0067x + 34.082$	$R^2 = 0.0302$
Index of globalization (2018) vs. GDP per capita PPP (2017)	$y = 0.003x + 41.352$	$R^2 = 0.1381$
Index of economic globalization (2018) vs. GDP per capita PPP (2017)	$y = 0.0013x + 36.207$	$R^2 = 0.0073$
Index of globalization (2018) vs. HDI Index (2017)	$y = 0.3786x + 40.426$	$R^2 = 0.284$
Index of economic globalization (2018) vs. HDI Index (2017)	$y = 0.4763x + 30.859$	$R^2 = 0.1662$
Index of globalization (2018) vs. GDP growth rate (2000-2017)	$y = 0.3272x + 42.047$	$R^2 = 0.2678$
Index of economic globalization (2018) vs. GDP growth rate (2000-2017)	$y = -0.3317x + 39.607$	$R^2 = 0.0034$
Percentage change in level of globalization (2000-2018) vs. Percentage change in GDP per capita (2000-2017)	$y = 0.0304x + 42.525$	$R^2 = 0.0087$

The above results show that there is a correlation between them, although it is rather small. In general, the relationship between them is greater in the case of the overall index of globalization than the index of economic globalization. As far as Index of economic globalization and GDP growth rate are concerned, there is a negative correlation between them (very small). The greatest dependency exist between the level of globalization and HDI Index, and between the level of globalization and GDP growth rate. It should also be mentioned that in all the cases the  $R^2$  is low or even very low. It means that globalization (measured by KOF Index) should not be treated as the main factor contributing to economic growth which seems quite self-evident.

## 6. CONCLUSION

Studies on the globalization and economic growth of developing countries allow us to draw the following conclusions. Starting from the 1990s, the level of globalization of this group of countries has increased significantly, although it varied considerably. As a result, the differences between individual countries have significantly increased. Thus we can see the divergence in the sphere of globalization in the developing countries.

The rate of economic growth in those countries is similar to the world average. However, there is a big difference between individual countries. In some of them, the growth rate is very high, in some very low (even negative increase). As a result, GDP per capita in this group of countries is also very diverse. The positive impact of globalization on economic growth and socio-economic development was noted. However, it should be added that this is not a marked influence.

#### LITERATURE:

1. Crafts, N. (2004). Globalisation and Economic Growth. A Historical Perspective. *The World Economy*, vol. 27(1), p. 45-58.
2. Bergh, A. and Karlsson, M. (2010). Government size and growth. Accounting for economic freedom and globalization. *Public Choice*, 142(1-2), p. 195-213.
3. Dreher, A. (2006). Does Globalization Affect Growth? Empirical Evidence from a New Index of Globalization. *Applied Economics*, vol. 10, p. 1091-1110.
4. Dreher, A., Gaston, N. and Martens, P. (2008). Measuring globalization – gauging its consequences. New York: Springer.
5. Figge, L. and Martens, P. (2014). Globalisation Continues: The Maastricht Globalisation Index Revisited and Updated. *Globalizations*, vol. 11, p. 875-893.
6. Grossman, G. and Helpman E. (2015). Globalization and growth. *American Economic Review*, 105(5), p. 100-104.
7. Gygli, S., Haelg, F., Potrafke, N. and Sturm, J-E. (2019). The KOF Globalization Index – Revisited. *The Review of International Organizations*, <https://doi.org/10.1007/s11558-019-09344-2>
8. Human Development Reports. United Nations Development Programme. Retrieved 27.11.2018 from <http://hdr.undp.org>
9. Hayaloglu, P., Kalayci, C. and Artan, S. (2015). How does Globalization Affect Economic Growth Across Different Income Group Countries? *Eskisehir Osmangazi University Journal of Economics and Administrative Sciences*, vol. 10, p. 119-151.
10. KOF Index of Globalization. Retrieved 15.01.2019 from <http://www.globalization.ethz.ch>
11. Martens, P., Castelli, M., De Lombaerde, P., Figge, L. and Scholte, J. A. (2014). New Directions in Globalization Indices. *Globalizations*, vol.12, p. 217-228.
12. Martens, P., Dreher, A. and Gaston, N. (2010). Globalisation, the global village and the civil society. *Futures*, vol. 42, p. 574-582.
13. Potrafke, N. (2015). The Evidence on Globalisation. *The World Economy*, vol. 38(3), p. 509-522.
14. Samini, P. and Jenatabadi, H.S. (2014). Globalization and economic growth: Empirical Evidence on the role of complementarities. *PLoS One*, 9(4), p. 1-7.
15. Swadźba, S. (2018). Globalization in the new countries of the European Union. *Proceedings of 187<sup>th</sup> International Scientific Conference Globalization and its socio-economic consequences*. Rajecké Teplice, Slovak Republic, Zilina: University of Zilina, p. 2862-2869. Also available: <https://ke.uniza.sk/en/conference>.
16. Villaverde, J. and Maza, A. (2011). Globalization, Growth and Convergence. *The World Economy*, vol. 34(6), p. 952-971.
17. Vujakovic, P. (2010). How to measure Globalisation? A New Globalisation Index (NGI). *Atlantic Economic Journal*, 38(2), p. 237-237.
18. World Bank Database. Retrieved 13.01.2019 from <https://data.worldbank.org>

# STRUCTURAL ENGINEERING MANAGERS – CHALLENGES FOR STRUCTURAL ENGINEERING WORKERS AND THEIR REQUIREMENTS FOR WORK

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## **ABSTRACT**

*The profession of structural engineer has been in a forefront of society from ancient times. But as other mature professions, it has developed significantly. Most of the development is associated with enormous growth in automation (see Industry 4.0), and that results in shrinking space for the work of structural engineers. That space is further reduced by developing standards and codes, and that results in significant changes in requirements for the work of structural engineering workers and therefore of investment cost. At the same time, construction industry is going through very thought times, mainly because of lowest unemployment numbers in years. Low unemployment numbers joined by high peaks of economy causes a huge prevalence of demand over supply. These two factors combined, causes that new workers need to react to everchanging requirements for their skills. But also, it's giving them significant leverage for their demands on employers, because of low competition on the market. This paper therefore compares vision for the future requirements on the workers, "vision for the structural engineers, presented in the paper Vision for the Future of Structural Engineering, drawn up by Structural Engineering Institute - SEI ASCE", with the latest findings in many companies in Czech Republic. Those findings suggest significant difference between what is anticipated from the structural engineering workers and what those workers demand from their future employers. And what sorts of problems that may cause. In the conclusion this paper suggests possibilities on how to overcome these gaps.*

**Keywords:** *Civil engineering, Competition, Human capital management, Industry 4.0, Structural engineers work requirements*

## **1. INTRODUCTION**

The profession of structural engineer has been a prominent profession for a very long time. Since ancient times only the best of the best were able to achieve a position from which they were able to become an engineer. That started to shift only, when a better redistribution of work was put in place, and many things that were previously exclusive to the engineer, were divided into several other similar professions. That caused at one hand greater specialization of engineers, therefore better productivity. But on the other hand, it took away the prominence of individual engineers. In the near past there has been another great shift, which is tied to automation. The so called - Industry 4.0, brought to the table new element of automation into the work of engineers. This element of automation caused the greatest growth of productivity ever. But it also replaced a lot of skills, that were previously required from engineers. Thus, the profession became less difficult to achieve in terms of old requirements, but mainly this

situation created a bunch of new requirements that need to be achieved in order to be a successful Engineer in future. The questions about, what should these future engineers know, and what skills should they have, were brought by structural engineering institute ASCE in 2013. With their great effort they defined 4 key skills that are or will be required from future structural engineers. This question was also brought up recently in Czech Republic. Mainly because of generational change in labour market. Where most of the newcomers on labour market belong to the generation of Millennials. This is the first generation born after the fall of communistic regime in Czech Republic, which only increases differences in lifestyle, goals and skills between Millennials and older generations. Thus, when defining what the challenges future structural engineers are ought to face, we need to take in account not only the requirements of the job itself. But also, the characteristics and skills of the workers that are going to occupy those jobs.

## **2. METHODOLOGY**

The aim of this research is to define what the job of structural engineer will most probably look like. In this case few things need to be taken in an account. Firstly, the future requirements defined by SEI ASCE research [5], compared with findings from research between Czech companies [4]. Then the skills, preferences and requirements of the new generations, that are taken from the perspective of employers [4], and perspective of future workers, current students [2]. In this paper surveys brought up since 2011 up to date have been used to define the current state of labour market and its trends. Those are needed to determine the future development. The first survey by SEI [5 p.17-20] examined the current requirements of the civil engineering sector from perspective of executives and engineers by online survey. Then compared those findings with individual interviews. The research in Czech companies [4] was done by structured interviews, which allows the results to be comparable. Then the great survey of college students was used for the determination of skills, requirements and characteristics of the new generations [2]. The survey was done by online questionnaire. Lastly those findings are supported by other researches [1] [3] done in the area of middle Europe.

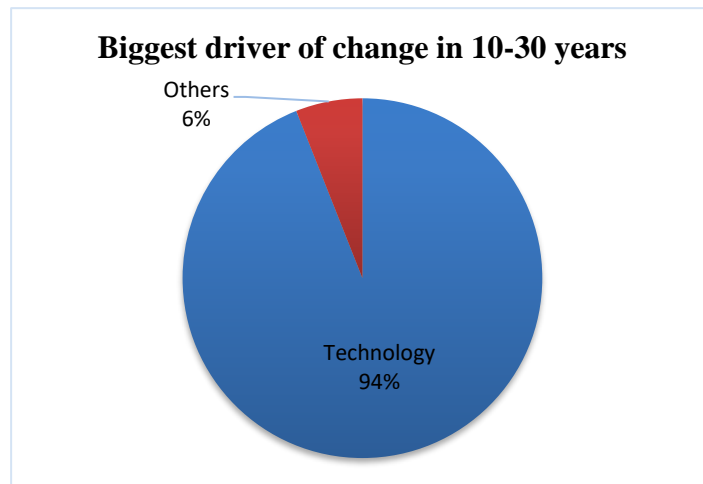
## **3. RESULTS**

The everchanging area of skills needed to be a successful structural engineer is continuously evolving. The change of skills, alongside with the change of work patterns caused by automation changes the job description. At the same time new generations have been growing up with new technologies since they were young. Thus, these generations have totally new perspective on, how much should they work, what they want to achieve, and what type of job do they want to do. Following data have been chosen from surveys carried out to date.

### **3.1. Basic attributes needed from structural engineer**

Survey conducted by SEI has besides others, suggested two significant findings. Firstly, that most of the respondents (94% has identified technology as the biggest driver in structural engineering) [5. p. 39].

*Chart following on the next page*



*Chart 1: Driver of change in future  
(SEI ASCE Vision for the Future of Structural Engineering p.39)*

This particular finding corresponds with the second part of the research, which was focused on interviewing industry representatives. To acquire broad perspective, researchers did select representatives from all business sizes. [p.41]. The respondents identified many key attributes and skill needed to innovate and lead the profession. Those attributes can be summarized into 4 categories: [5. p. 17-20]

- Technical skills
- Soft skills
- Broad professional ability
- Creativity and curiosity

These 4 attributes identify the key skills that are required from future engineers as told by representatives of the industry.

### **3.2. Interviews representatives of the industry in Czech Republic**

Interviews were conducted in cooperation with representatives of several companies in Czech Republic. Those findings are summarized in following tables. Firstly, interviewers were asked what the biggest advantages and disadvantages of new coming generations are.

*Chart following on the next page*

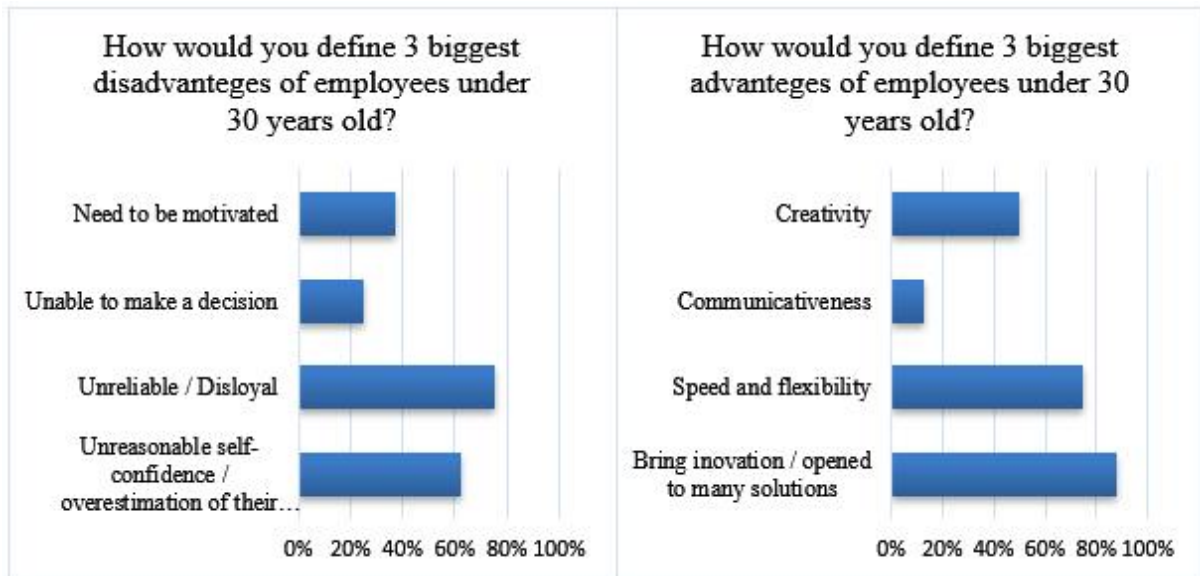


Chart 2: Characteristics of Millennials according to employers in Czech Republic (Rychetský 2017, attachments)

From these graphs it can be determined what do these employers think, that is important to have and what characteristics these generation have, that are future hurdles for these businesses. Of those the biggest hurdle seems to be unreliability (75%) and unreasonably high level of self-confidence (63%). Although these people have high self-confidence levels, according to employers, they lack the ability to determine on which path to move forward, and to be self-motivated to do so. The most important skills they have according to employers are their creativity (50%), their knowledge of new technology and innovations (88%), and their flexibility and speed (75%). It also appears that these younger people have communication skills at reasonably good levels according to employers. Which is contradictory to what many people suggest. In the following question main focus was to determine how self-confident these younger people are, when arriving on the labour market. [4]

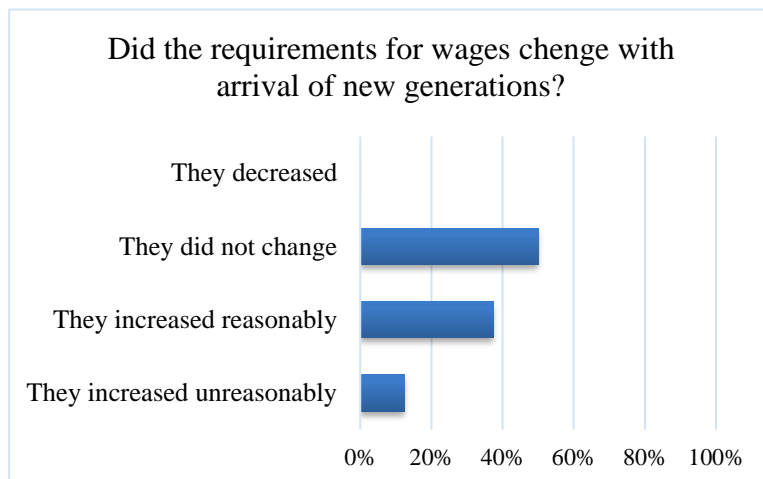


Chart 3: Requirements for wages by new generations (Rychetský 2017, attachments)

Here it can be seen, that all the requirements for wages are either on hold, or on rise. When at the same time 13% of those who were asked think, that newcomers on labour market have unreasonably high expectations of wages. This fact corresponds with high self-confidence which were previously mentioned.

The last of selected questions from the interviews was focused on prognosis of the future state of labour market.

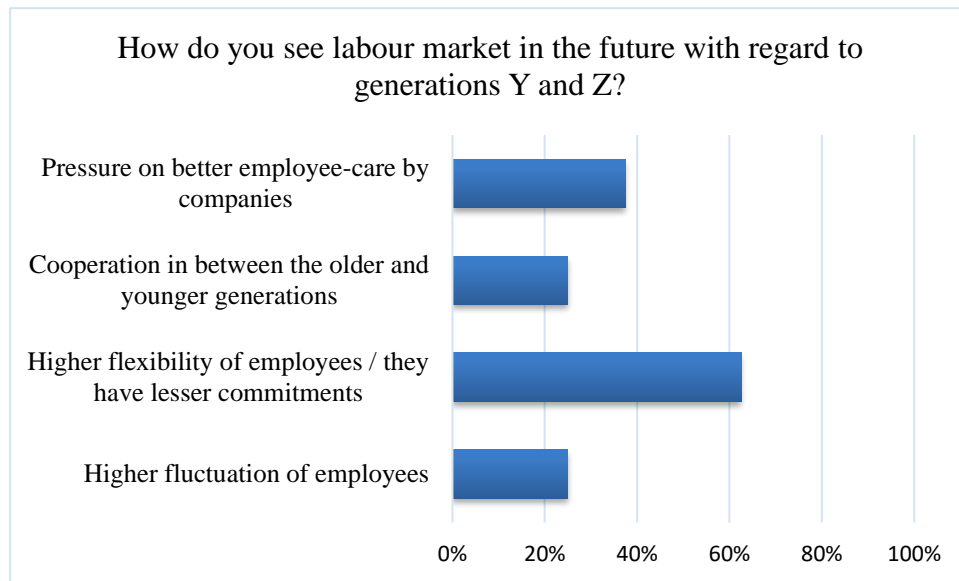


Chart 4: Future of work in construction industry according to employers (Rychetský 2017, attachments)

The results reflect the previously mentioned characteristics of the new coming generations. According to respondents, there will be a higher flexibility in work of employees (63%), and much more care from the side of employers will be necessary in order to keep the employees satisfied in the company (38%). Even if this is followed it is inevitable that these employees will fluctuate between positions at much higher rate that was previously common (25%) [4]. From the above mentioned, we can definitely see, that employers in Czech Republic see creativity and curiosity as typical characteristic for new-coming generations. With high level of precision, it can be also stated, that one of the biggest strengths of these generations is their ability to use new technologies. Both of those categories are mentioned in the ASCE vision for the future.

### 3.3. UNIVERSUM – Student survey, what new generations need and want

This huge survey of students in Czech Republic is made every year and is focused on what students think about their future and what do they expect from it. The following graphs summarize its results which are relevant to our paper. [2]

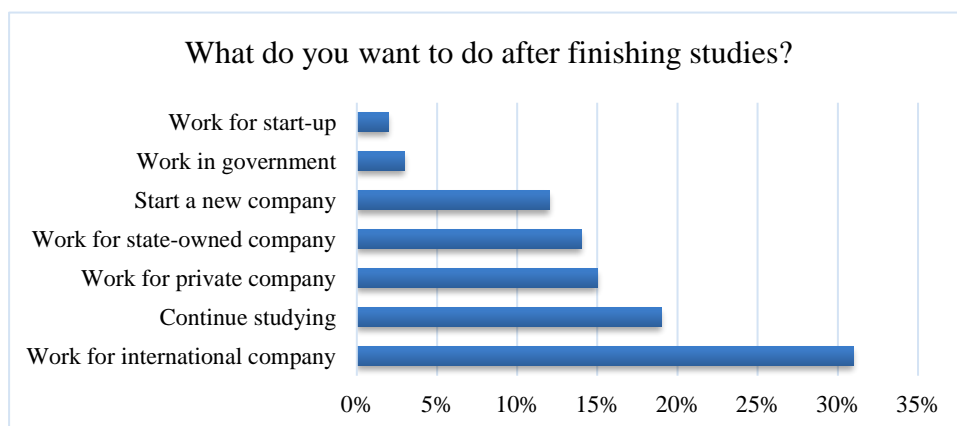


Chart 5: Plans for future of current college students (UNIVERSUM 2018)

From this first graph it can be what are young people planning to do after finishing their current studies. 31% of those have an ambition to work for international company. Other 27% aim on working in private sector. Only combined 17% plan on working in public sector or government. Next graph shows their goal and preferences in future jobs.



*Chart 6: Career goals of current college students (UNIVERSUM 2018)*

As it can be clearly seen, this research absolutely corresponds with previously mentioned characteristics of the younger generation. Their biggest preferences are work-life balance (59%), feeling of greater purpose (57%). But there is also new element, of having a stable work (53%) which were previously stated assigned mainly to older generations. With many others important in context of our research are their need to be creative and innovative (29%), and their desire to work abroad (27%). Finally, the question of wages is also brought up in the research. The students were asked: What do they anticipate their wages to be? It is then compared with corresponding average wages in 3Q2018 in Czech Republic. Corresponding wages for science field were unable to find at the moment, so they are not mentioned in the graph.

*Chart following on the next page*



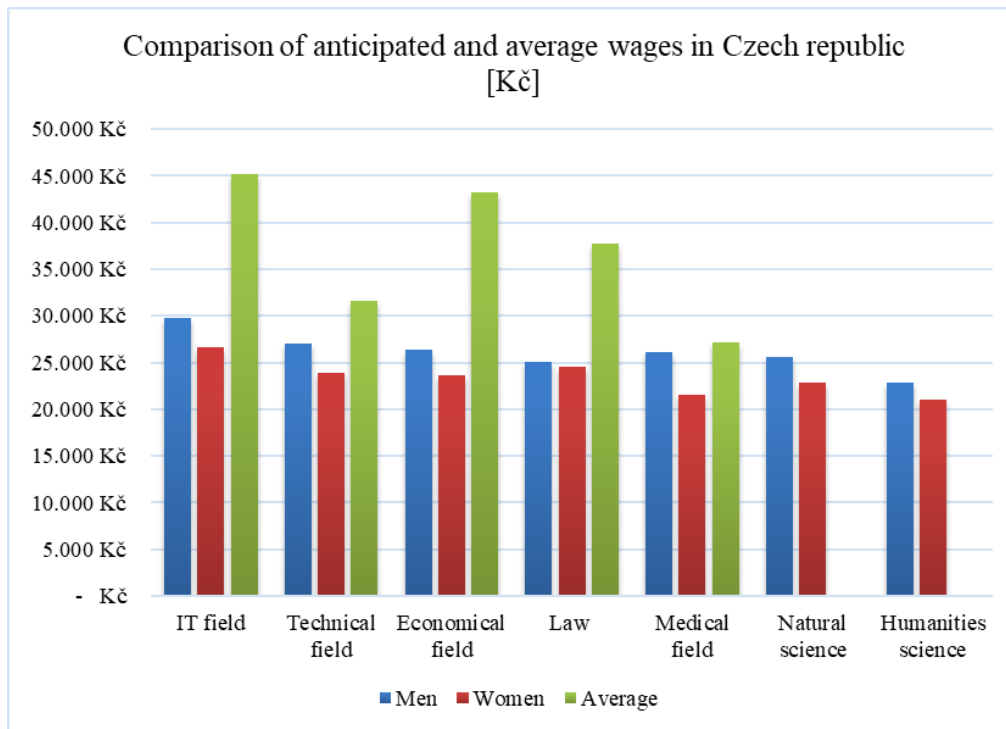


Chart 7: Anticipated wages compared with average wages in Czech Republic (UNIVERSUM 2018, ISPV-MZS 2018)

There is a huge gap between average wages and anticipated wages in each field. Most in IT, economical and law fields. There are smaller differences in medical and technical fields. Which corresponds with the claim of the employers, that new generations have high expectation on their wages.

#### 4. DISCUSSION

All the previously mentioned research suggests that we live in an era of significant change. These changes will for sure have a huge impact on the way how engineers work. The question is, will the impact be positive or negative? For the impact to represent most of the positive side, the system needs to be prepared for such changes. And the way to prepare is to determine what are the skills, that will be crucial in the future? This question is mostly answered in the first research conducted by SEI ASCE [2]. Which defines 4 crucial skills that future engineer should have or know. First of those are Technical skills. These represent the ever-growing ability of engineers to bring new technologies and innovations into their work. As the research states, it is much more important to focus on the abilities of future engineers, that their disabilities. It is most likely, that we will redefine the whole process of engineering. With arrival of higher automation levels, BIM and artificial intelligence, it seems that the role of the engineer in future will be more of a observer and managerial role. And for engineer to be successful in these areas, he/she needs to have a deep understanding of how the automated processes work. And for that he/she needs technology. Next area of skills is soft-skills. This area has not been in a forefront of the discussion for a long time. But with growing technology advancements it gains on importance. In those soft-skills we can include flexibility, communication, adaptability, self-control, high emotional intelligence-quotient etc. Those are crucial because lot of the factual knowledge is available in the software and is very easily traceable. And also, knowledge base decisions are much more likely to be automatized. Therefore, those situations, that require much more of a personal ability, communication, stress-handling become the crucial ones, that will need to be solved by future engineers. Third skill remains broad professional ability.

It is simply wrong to estimate, that the automation will fully replace the knowledge of the engineers. Engineer still must have broad understanding of the processes in his area of expertise and needs to understand what and why is done the way it is. More importantly, engineers will be more likely to lead others than before, so the broader knowledge they have, the better. Lastly very important ability will be creativity and curiosity. Because of automation, there will be no longer a place for human force in repeatable labour. Therefore, workers need to be the ones who will do specialized and complicated tasks. And to solve those, one needs to be creative. And because the speed of advancement throughout the society is very high, the other very important skill is to be curious. Only curious engineers will fully use the potential of technology and innovations. And only those will lead the way in next 30 years. When researching the abilities of future generations of engineers (generation 1990 and younger), the employers seems to be sometimes sceptic but also in a way hopeful. Most emphasized ability of the future generations are their openness to innovation. And their speed and flexibility. This speaks of their high amount of curiosity. The question remains, if the level of curiosity will drop as they get older or remain at high levels. Very significant also seems to be that half of employers consider creativity to be a symbol of younger generations. Which corresponds highly with previously mentioned requirements. When asked on disadvantages of younger workers, they are most often being disloyal, unreliable, overestimating their position and abilities, and not able to self-motivate themselves. This unfortunately creates a thread for the future, cause a level of independence is needed. And that needs to come from high level of self-awareness and ability to fulfil the objectives. Which unreliable and not self-aware people tend to struggle with. When asked on wages, employers seem to be divided. Half of those asked think the requirements for wages raised with new generations. And from those 17% thinks the increased requirements are unreasonable. The other half thinks it hasn't change at all. We did draw from other resources what are the real expectations of students. [2/8] From those it can be seen, that in some other areas, like IT or law, are the differences between average wages and anticipated wages by students really high. And even when taken in account the reality that the average wages are distorted by the highest earning individual, those expectations seem not to be overestimated. On the other hand, in technical field the anticipated wages are relatively close to average wage. When taken in an account the fact, that every new employee needs at least few weeks to be trained, the price of the work they produce, compared with their wages may be overestimated. To fully predict what are the needs of the future engineers, it needs to be understood, what are their goals and plans for the future. These are listed in great survey of college students. This survey suggests that the most desired goal is to achieve a great work-life balance. This means for example home-office, possibilities of flexible working hours, and above standard holidays. Other important goal they need, is to have a feeling of greater purpose. So, every future company needs to figure out their vision is, and needs to have a clear understanding of what are their employees supposed to achieve. Only then they will be able to communicate the purpose onto every employee. Good sign is that 29% of students wants to be creative and innovative. Which highly corresponds with previously desired skills. More than 30% of students want to also work for international company. Which suggest that their ambitions are high, and that they are able to leave their comfort zone. Which is also needed for successful future engineers.

## **5. CONCLUSION**

From what has been researched it can be now seen, that there are many areas where future generations of engineers will thrive. According to surveys, new coming generations of engineers are excelling in Creativity, innovations, flexibility, speed and their ability to adapt to new situations. They follow their senses and want to have balanced life with purpose. On the other hand, they most certainly lack a bit of professional abilities, because they find them redundant. Which may cause few problems in a long run.

But most importantly these younger generations lack a variety of soft-skills. This problem is caused mainly, because these skills are not properly taught in technical universities in Czech Republic. These universities are focused on professional ability of students and because students are mostly not giving their full focus on studying. Thus, universities focusing on to teaching the most important from the professional stand point, and leaving behind the social aspect of work, which will only gain relevancy over the time. This creates great workspace for improvements. Most of the future engineers will have a great basis in creative, technology-based work. But there are many areas where they need to become better at. Main focus should be aimed at developing soft-skills. Latest research shows, that communication is not as big problem as was previously thought. And communicating through social networks is not causing people to communicate less. It forces them to communicate more, but in a different way than before. This is a common situation in past years. That is because innovations are coming very quickly, so most of the engineers are unable to fully catch the new technology in time. The ability to adapt to new way of work is becoming more and more crucial. Only time will tell what the real future engineer looks like, but there are already many things we can do in previously mentioned areas to prepare for that future.

#### LITERATURE:

1. SOÚ AV ČR, v.v.i., CERGE-EI, FSS MU. České panelové šetření domácností 1. vlna [datový soubor] [online]. Ver. 4.0. Praha: Český sociálněvědní datový archiv, 2019 [citováno DNE]. DOI 10.14473/CHPS101\_4\_0
2. Czech Republic's Most Attractive Employers - Trends and Rankings. The Global Leader in Employer Branding | Universum [online]. Copyright © 2018 Universum Communications Sweden AB, company registration no. 5565875993, 103 86 Stockholm. All Rights Reserved. [cit. 06.05.2019]. Dostupné z: <https://universumglobal.com/rankings/czech-republic/>
3. Kopáček, M., Horáčková, L., Young people and the labour market: A case study of the regions in Visegrad Group countries. In Klímová, V., Žitek, V. (eds.) 21st International Colloquium on Regional Sciences. Conference Proceedings. Brno: Masarykova univerzita, 2018. pp. 1– 5. ISBN 978-80-210-8969-3.
4. Bc. Tomáš Rychetský Současné trendy ve firemní kultuře stavebního podniku. Brno, 2017. 109 s., 24 s. příl. Diplomová práce. Vysoké učení technické v Brně, Fakulta stavební, Ústav stavební ekonomiky a řízení. Vedoucí práce PhDr. Dana Linkeschová, CSc.
5. SEI ASCE Vision for the Future of Structural Engineering Zpracované Structural Engineering Institute [Available]: <http://www.asce.org/uploadedFiles/visionforthefuture.pdf>
6. KRAUS, M., (2018). Comparing Generation X and Generation Y on their Preferred Emotional Leadership Style. Journal of Applied Leadership and Management. ISSN 2194-9522.
7. Preparing leaders for the multi-generational workforce. Journal of Enterprising Communities: People and Places in the Global Economy, ISSN 1750-6204. DOI: 10.1108/JEC-08-2013-0025.
8. ISPV - Výsledky šetření. ISPV - mzdy a platy podle profesí [online]. Copyright © TREXIMA, spol. s r.o. [cit. 08.05.2019]. Dostupné z: <https://www.ispv.cz/cz/Vysledky-setreni.aspx>
9. Novinka z výzkumu Co chtějí Češi po zaměstnání? Peníze jsou důležité, ale rozhoduje i jistota a sladění s rodinou. Proměny české společnosti | SOÚ AV ČR [online]. Copyright ©2015 [cit. 07.05.2019]. Dostupné z: [http://promenyceskespolecnosti.cz/novinky\\_z\\_vyzkumu-detail.php?idPol=39](http://promenyceskespolecnosti.cz/novinky_z_vyzkumu-detail.php?idPol=39)

# IMPACT OF INFLUENCER MARKETING ON CONSUMER BEHAVIOUR

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## **ABSTRACT**

*The development of the Internet preceded significant changes in the environment that have drastically affected behaviour of individuals. In order to achieve competitive advantage in the current hyper-competitive market, the products and services are becoming increasingly customized. Marketing as a strategic function in a company has become one of the imperatives of modern business, and the development of communication technology has given marketing activities a new framework. With the evolution of social networks, a brand new concept of marketing, e-marketing, is rapidly developing. Social networks have changed the way we communicate and individuals have become active content creators on social networks. This fact used to be frightening because companies would lose control over their own communication, but today companies encourage users to actively participate in social media communication. In this new marketing concept, "influencers" have a much more significant market impact on individuals. The focus of this paper is the impact of "influencers" on consumer behaviour. The paper analyses how consumers perceive "Influencers", and whether they affect their decisions. Therefore, the aim of the paper is to show the results of the "Influencer's" impact on consumer behaviour and to determine their impact on consumers' buying decisions.*

**Keywords:** *influencers, e-marketing, social networks, consumer behaviour*

## **1. INTRODUCTION**

Development of information-communication technologies gave a strong contribution to a human communication on a global level. The most significant contribution to the ICT sphere is certainly the appearance of the Internet which does not only represent the revolution in communication but in a way of managing over relationships with the user. Today, the Internet is one of the most influential media present on a global level and we can perceive it as one of the key contributors to the process of globalisation. Along with the aforementioned globalisation, the Internet and information-communication technologies have generally contributed to the business activity. Business environment has become more competitive and from the global point of view, the entire world is now becoming a potential market. However, no matter the more dynamic environment, Internet became a huge opportunity for companies of all sizes, and therefore e-marketing becomes a vital component of 21st century marketing. The range of potential consumers via e-marketing is incomparable with some techniques of the conventional marketing. Advertisers have always used celebrities as the way of increasing the consciousness and perception of a brand, so the same concept has been developed within the e-marketing. Influencer marketing is being more and more present form of advertising in today's environment and influencers are those who due to their knowledge, skills and character, but not

position, can make an impact on attitudes of a certain group. Therefore, we can conclude that the Influencer marketing is the art and science of engaging people who have influence on the Internet (Influencers) to spread the message of a brand and its target audience in the form of a sponsored content. Thereby, the aim of this work is to analyse how strong is the impact of influencers on consumers' behaviour.

## **2. E-MARKETING AS THE KEY COMPONENT OF THE 21st CENTURY MARKETING**

The implementation of the information technology is a crucial factor of a business activity of successful business entities, especially on the level of a global economic system (Dukić and Gale, 2015:595). The development of the information technology enabled the development of e-shopping, but also the creation and mining over database of potential consumers which resulted in new types of marketing – e-marketing or Electronic Marketing. From the appearance of the first advertisement on the Internet in 1994 until today, the implementation of the Internet in marketing increases exponentially. Some authors state that the e-marketing solely takes place on the Internet, while others state that it is referred to all electronic media and therefore, its scope is wider (Ružić, Biloš, Turkalj, 2014). Pursuant to Panian (2000:87): "Electronic marketing (e-marketing) is the way of realising marketing activities of a company along with intensive application of information and telecommunication (Internet) technology". Grbac (2007:276) clearly equals e-marketing and Internet marketing: "Electronic marketing or Internet-marketing is the integrity of the process which is based on electronic fundament. Moreover, he emphasizes that the Internet marketing is "the activity of market entities on a virtual market by which you can, by the usage of contemporary information technology, recognise the needs of consumers, communicate with the market and provide offers" (Grbac, 2007:276). Kotler and associates confirm that the electronic marketing is "the effort of the company to inform, advertise and sell products and services via Internet" (Kotler and associates, 2006:135). Chaffey and others (2009) define Internet marketing as the implementation of the Internet and other digital technologies (e.g. mobile telephones) together with traditional methods aiming to realise marketing goals while they consider electronic marketing as a broader definition which, apart from the Internet marketing includes and the database marketing and electronic customer relationship management, eCRM). Although the authors disagree in defining e-marketing, they all agree in the fact that contrary to traditional media, digital media enable selective communication towards smaller groups, and therefore those promotional activities are more dynamic, precisely segmented and make lasting relationships with consumers (Ružić, Biloš, Turkalj, 2014). Online technologies provide numerous promotional strategies so it is possible to find in literature various terms which closely describe certain e-marketing strategy, primarily oriented towards promotion and advertisement strategies (Ružić, 2003:62). Some of the terms that are most often mentioned are a viral marketing, referral marketing, one-to-one marketing, e-mail marketing, frequency marketing, real time marketing and affiliate marketing. Along with the terms mentioned by Ružić, there are also and a search engine marketing, blog marketing, social media marketing, content marketing, influencer marketing and other.

## **3. DEVELOPMENT OF THE RELATIONSHIP WITH CONSUMERS WITHIN E-MARKETING**

Crucial changes in electronic environment are related to the differentiated consumer position. Namely, along with "standard" channels of managing over consumer relationships, more and more companies regard social networks as the new communication channel and therefore analyse followers as potential buyers of services or products. Companies analyse from the mentioned position how to rule "followers" and how to make them buyers or even better, a loyal

buyer. Hence, we can conclude that technology enables much bigger insight into consumers' behaviour but the problem is in the fact that consumers use that same technology for controlling the interaction with companies and organizations. The additional problem lays in the fact that social media, without any doubt, are becoming an immense force behind the content which becomes viral. The reason is in that the social media enables easy and quick sharing of contents between different groups of people until the viral content is everywhere (Andersen, 2018). The control of that kind of market environment is very complex and that motivates companies to implement e-marketing activities as the replacement for traditional marketing activities (Škare, 2011:3) in order to partially control the content of transferred messages and then evaluate their efficiency. The basic function of advertising is informing potential consumers about the product and trying to direct them to buy the same product, but by advertising you can also transfer information on the organization itself or topics important for the organization" (Previšić, Ozretić Došen, 2004:246). By analysing the environment situation in that way, companies are considering several groups of consumers' activities within the electronic environment and trying to reach the key users together with a targeted message, in other words, they are reacting by specific methods and strategies directed towards individual consumers (Previšić, J., Ozretić Došen, 2004). Apart from the mentioned activities, companies are directing themselves to monitoring of mutual interactions and exchange of values within consumers. One of them is the exchange of digital contents and performance of transactions between end users (e.g. via virtual communities) (Meler, Dukić, 2007). Electronic environment enables making and sharing fun and creative contents. The most concrete example of that is a viral marketing which includes all activities for the purpose of creating a message which will be transferred from one person to the other via different media: e-mail, social media, SMS, MMS. This innovative strategy resulted in hundreds of thousands sent messages which are circulating within the aimed group (Akdeniz, 2015) and is based on the fact that consumers consider non-marketing sources of information (friends and acquaintances) more relevant than the marketing sources (e.g. companies' advertisements). The message is spread quickly and the receiver also has the role of a sender. By analysing that kind of functioning of an electronic environment, it can be concluded that it is being focused on the analysis of one of the fundamental determinants of a customer relationship management-meeting their needs and wishes. On the basis of learning consumers' needs, it is possible to predict future reactions of consumers on introducing new products. (Meler, Dukić, 2007), in other words adequately execution of CRM. However, within the traditional CRM, the buyer is actually not a part of the CRM because simply there is no great collaboration and relationship. Once social networks appeared, this changed a lot. The buyer is a focus point of the way how the company works. Instead of the classical marketing and pushing messages towards buyers, companies can now communicate with buyers in order to solve business problems, help buyers and build relationships with them, which will finally lead to the long-term retention of buyers and transforming buyers into company promoters. E-marketing is finally making possible for companies to know their consumers (in a wider range), adjust their offer and identify influencers and brand ambassadors who will expand news with their cooperation.

#### **4. THE IMPORTANCE OF SOCIAL NETWORKS WITHIN CRM**

Today social media have significantly changed the way in which organizations, communities and individuals communicate with each other" (Taprial and Kanwar, 2012:28). Basically, people are interested in networking and connecting with friends, sharing contents, sending messages, mutual cooperation in real time, collecting news, information and feedback on the Internet. In so doing, the content can be in the form of a text, pictures, audio and video records (Gardner and Birley, 2011). Opposed to traditional media, like television, newspapers, radio and magazines as the one-way communication, social media are a two-way communication which

enable interaction with community members. Readers can leave their comments in public as the answer to what has been seen (Brown,2013). Therefore, the media open new markets for companies, add human faces to campaigns and create a corporate personality, but they also help company branding and regular writing posts reaches the company marketing segment that stimulates the awareness on products and services and encourages buyers to follow contents. (Williams, Portney,2011). Forms of social media are different, but eight most popular ones include blogs and microblogging(Twitter), social networks (Facebook, LinkedIn), web locations where multimedia content is shared (YouTube, Flickr), web locations for marking (bookmarking) and voting (Digg,Reddit), review pages (Yelp), forums and virtual worlds (Second Life) (Zarella, 2009). Marketing uses social media for the sale increasement based on relationships with buyers or clients, by reducing costs necessary for creation of and execution of campaign (Lieb,2011). Social media enable innovative usage of Internet technologies. Therefore, marketing and business procedures of creating and distributing of valuable and attractive contents are facilitated in order to attract, gain and engage clearly defined target audience with the goal to encourage profitable consumers' activities (Pulizzi,2013:5).Benefits which companies can obtain by these media are a huge audience, branding, creating relationships with buyers, improving business activities (through users feedback, finding new suppliers and employees of quality, etc.), improving the position of search engines, the possibility of sale via social media, alternative possibilities of advertising and other (Zimmerman and Ng, 2017). The content has an essential role within this type of marketing and represents a value for consumers which comes in different forms. Some types of contents which can be found, according to Slater (2014), are: e-books, articles,videos,webinars, infographics,podcasts, surveys, photographs and photogalleries, presentations, questions, discussions etc. We can also add Facebook or Twitter posts, audio-books and everything that has the value for the buyer and is of informative character. All that content has to be distributed via specific channels to come to targeted audience. Blogs, social networks, email, searchers and others can be used as channels on the Internet (Jefferson, Tanton, 2015). In summary, today people around the world connect by using social networks, so the strongest reason to move CRM to social media is that their clients are there. Social media can be used for realization of higher values of products but also for collecting complaints and rewarding consumers' loyalty. Marketing experts can now target consumers with extreme accuracy and relate them with the brand with the help of a relevant and actual dialogue on social platforms (Macy, Thompson, 2011). Actual dialogue, in other words, actual topic, trend or event are an inspiration for creating contents for the real-time marketing (Kerns, 2014).

## **5. INFLUENCER MARKETING**

Advertisers have always used celebrities as the way of increasing awareness or perception of the brand. The reason is that people usually trust celebrities who they admire to or want to be like them. The concept of the influencer marketing is similar,but instead of using tv or film stars, famous sportspersons or musicians, they use celebrities from the world of social networks –social media influencers (Sammis, Lincoln and Pomponi,2015). Most influencers make profits on Instagram and YouTube, but depending on the type of business, work with influencers can be on Facebook, Twitter,LinkedIn, Snapchat. The term "influencer" can refer to all people who have certain influence. According to Farmer (2017), influencers are those people who can, based on their knowledge, skills and character, but not position, influence on attitudes of their colleagues (at the same position, subordinate ,and sometimes even managers), that is, influencers can be the ones who make decisions within the organization (Vered, 2007). Hence, the influencer does not necessarily be the person with the influence on social networks. Although, nowadays, the term influencer is often used as the term for social media influencers.

What differs them is the fact that although famous people are more interesting to wider population and have many followers on social networks, that does not necessarily mean that they are reliable when it comes to promotion of products or services. Influencer marketing is the virtue and the science of engaging people who have influence on the Internet to spread the message of a specific trend and its targeted audience in the form of sponsored content (Sammis, Lincoln, Pompei, 2015). There are many reasons why influencers are "necessary" in doing business in the current market environment. First of all, it has to be stressed that influencers help in attracting new users, create a community, initiate actions, strengthen the idea or the brand and raise awareness on the brand, but also help in development of loyalty (Vareško, 2017). Followers trust their influencer and it is easier for them to promote different products or services and ensure a high investment return (ROI). On the other hand, when the client relationship management is used (CRM) with influencers, that combination can severely transform marketing efforts. In the world of marketing, they are one of the best ways of promotion because people trust them and the costs are relatively low comparing to different ways of promotion. " Consumers perceive advertised messages of influencers as more reliable and more convincing, especially ones made by strong influencers (Influencers are stronger if they have bigger number of followers on social networks). Comparing to strategies of promotions by celebrities, the benefit of influencers on social networks is considered to be more trustworthy, especially for companies who are targeting younger generations (Lim and associates, 2017:20). You can say that influencers are, within marketing meaning, mediators via which brands can connect with their targeted groups through the voice which potential users, followers and influencers trust to. Therefore, influencers play a growing and significant role within e-marketing.

## **6. ANALYSIS OF THE INFLUENCERS' IMPACT ON CONSUMERS' BEHAVIOUR**

The research was directed towards the attitudes of users on influencers and changes in their behaviour caused by them. The key problem towards which the research was directed was sublimed in the question: Do influencers have a significant impact on consumers' behaviour and their decision to buy. So, it is necessary to clear the role and the importance of influencers on consumers' behaviour which is also the aim of this work. From the aforementioned aim arose the hypothesis:

- H - " Influencer marketing has a significant impact on consumers' behaviour and their decision to buy."

The assumption is that there is a strong, positive, correlative connection between the impact of influencers and consumers' behaviour while buying products. The data for the needs of this research were collected by the survey questionnaire.

## **7. RESEARCH METHODOLOGY**

The research was directed towards finding an answer to a question how strong is the impact of recommendations given by influencers on changing consumers' attitudes and behaviour when buying products. The analysis was executed over results of the primary research. The research consisted of collecting primary data by the questioning method with the help of the structured survey questionnaire (Vranešević, 2014) on a sample of (n=200) consumers. Within the research were used latent variables which were joined by measurable indicators and for the need of the research, the focus was on consumer's reactions regarding influencer's recommendations for the usage of consumer goods which were consumed on a daily basis. A descriptive statistics analysis was used in processing primary data collected by the survey questionnaire. With the help of the descriptive analysis was expressed the intensity of correlation between the influencer's impact and consumer's behaviour whereby the hypothesis would be accepted or rejected.



## 8. CHARACTERISTICS OF THE RESEARCH SAMPLE AND RESEARCH RESULTS

The primary intention of the executed research was an insight in the consumers' attitudes on influencers. 200 survey questionnaires were collected. The research sample was a convenience sample and the structure of the research sample is presented in tables.

*Table 1: Structure of surveyed sample*

Sex	frequency	percentage	cumulative percentage		
Men	71	36%	36%		
Women	129	65%	100%		
<b>Total</b>	<b>200</b>				

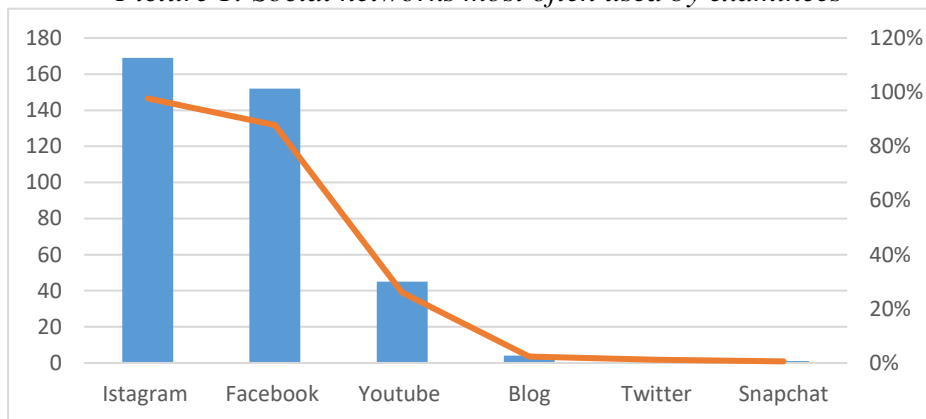
  

Age	frequency	percentage	cumulative percentage	Follow influencers	percentage
18-20	88	44%	44%	88	100%
21-25	48	24%	68%	48	100%
26-30	14	7%	75%	14	100%
31-35	10	5%	80%	10	100%
36-40	8	4%	84%	7	88%
41-45	10	5%	89%	4	40%
46-50	8	4%	93%	2	25%
51-55	8	4%	97%	0	0%
56-60	4	2%	99%	0	0%
61-	2	1%	100%	0	
<b>Total</b>	<b>200</b>	<b>100%</b>		<b>173</b>	

*Source: prepared by authors*

By the insight in the collected data, it is clear that 27 examinees do not follow any influencer, so their indicators were ignored in further analysis. Next was the analysis of social networks most often used by examinees, or where they find information presented by influencers. The results are displayed in the chart.

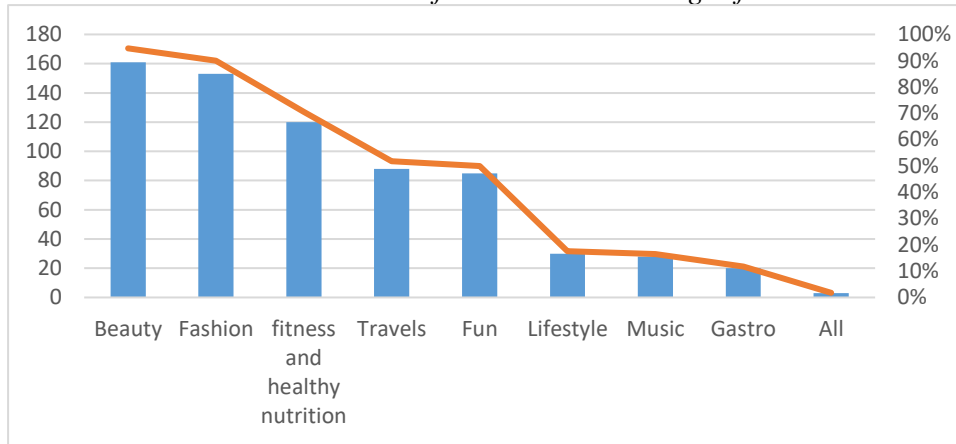
*Picture 1: Social networks most often used by examinees*



*Source: prepared by authors*

By analysing the area of interest in finding influencers, the following results were given.

*Picture following on the next page*

*Picture 2: The area of interest in choosing influencers*

Source: prepared by authors

By analysing the amount of time spent on social networks, it can be concluded that most users spend in average 1-2h daily, and the preferred content which they analyse during that period are videos and photographs. Indicators are displayed in the following table.

*Table 2: Indicators from the survey*

	Less than 1 h	1-2 h daily	3 and more hours
<b>How much time do you spend on social networks?</b>	<b>50</b>	<b>82</b>	<b>41</b>
<b>Which type of communication do you prefer?</b>	<b>photograph</b>	<b>text</b>	<b>video</b>
	<b>60</b>	<b>18</b>	<b>95</b>

Source: prepared by authors

The next set of questions indicates how strong is the impact of influencers on behaviour of users when purchasing. The indicators are the following.

*Table 3: Survey indicators*

	yes	no
<b>Do more frequent announcements impact on the bigger attention toward the influencer?</b>	<b>108</b>	<b>65</b>
<b>Do influencer's announcements have impact on your behaviour when shopping?</b>	<b>70</b>	<b>103</b>
<b>Do you search for products used and recommended by influencers?</b>	<b>124</b>	<b>49</b>
<b>Do you buy products used and recommended by influencers?</b>	<b>95</b>	<b>78</b>
<b>Do you discuss with your loved ones products used and recommended by influencers?</b>	<b>151</b>	<b>22</b>
<b>Do you recommend products used and recommended by influencers?</b>	<b>132</b>	<b>41</b>
<b>When you choose between the competition, do you pick a product recommended by influencers?</b>	<b>151</b>	<b>22</b>

Source: prepared by authors

According to the executed research, it can be concluded that the frequency of announcements of influencers impacts positively consumers' attention, although the consumer does not think that the influencer impacts on his purchasing behaviour. However, users periodically buy products recommended by the influencer, search them actively and what is very important from the marketing point of view, they comment and recommend them to their loved ones. Therefore, it can be concluded that the message sent by influencers does not only cover the group of followers, but it is being widen on much larger, interested group by the strategy mouth to mouth.

The most significant indicator derived from this research is that 87% of examinees declare that when choosing the products between the competition, they pick a product recommended by influencers which shows that the influencer marketing has a significant impact on consumers' behaviour and making decisions when purchasing and therefore the hypothesis of this research is confirmed.

## 9. CONCLUSION

The research carried out for the purpose of this work was based on the question: Does an influencer marketing have a significant impact on consumer's behaviour and making decisions on purchasing. The aim of the hypothesis H was to confirm is there a positive relationship between the influencer and the perception of the consumer on the product, and thereby the potential motivation of a consumer to make a quick decision when purchasing. Namely, according to the above mentioned results, it is obvious that consumers significantly react on influencer's recommendations due to which the hypothesis H can be confirmed. Consequently, aforementioned research results lead to new cognition in understanding strategic behaviour of a company within creating e-marketing campaign with the focus on Influence marketing.

## LITERATURE:

1. Akdeniz, C. (2015): Viral marketing explained. Bad Bodendorf: Best business books
2. Anderson, D. (2018): If Social Viral Marketing Doesn't Make Dollars, it Doesn't Make Sense: Gone Viral.
3. Chaffey, D., Ellis-Chadwick, F., Mayer, R., Johnston, K (2009) Internet Marketing: Strategy, Implementation and Practice, Prentice Hall
4. Dukić, B., Gale, V. (2015): Upravljanje odnosima s potrošačima u funkciji zadržavanja potrošača, *Ekonomski vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues*, Vol. 28 No. 2, str. 583-598
5. Farmer, N. (2017): *The Invisible Organization: How Informal Networks can Lead Organizational Change*. New York: Routledge.
6. Gardner, S., Birley, S. (2011): *Bloggng For Dummies*. Hoboken, NJ: Wiley
7. Grbac, B. (2007): *Načela marketinga*. Rijeka: Ekonomski fakultet Sveučilišta u Rijeci
8. Kerns, C. (2014): *Trendology: Building an Advantage through Data-Driven Real-Time Marketing*. New York: Palgrave Macmillan
9. Kotler, P., Wong, V., Saunders, J., Armstrong, G. (2006): *Osnove marketinga*. Zagreb: MATE
10. Jefferson, S., Tanton, S. (2015): *Valuable Content Marketing: How to Make Quality Content Your Key to Success*. Kogan Page.
11. Lieb, R. (2011): *Content Marketing: Think Like a Publisher - How to Use Content to Market Online and in Social Media*. Indianapolis: Que Publishing.
12. Lim, X. J., Radzol, A. R., Cheah, J. H., Wong, M. W. (2017): The Impact of Social Media Influencers Purchase Intention and the Mediation Effect of Customer Attitude, *Asian Journal of Business Research*, Volume 7, Issue 2, str. 19-36
13. Macy, B., Thompson, T. (2011): *The Power of Real-Time Social Media Marketing: How to Attract and Retain Customers and Grow the Bottom Line in the Globally Connected World*. McGraw Hill Professional
14. Meler, M., Dukić, B. (2007) Upravljanje odnosima s potrošačima - od potrošača do klijenta (CRM), *Ekonomski fakultet u Osijeku*, Osijek
15. Panian, Ž. (2000): *Internet i malo poduzetništvo*. Zagreb: Informator
16. Previšić, J; Ozretić Došen, Đ. ( 2004.) *Međunarodni marketing*. Zagreb: Adverta,
17. Pulizzi, J. (2013): *Epic Content Marketing: How to Tell a Different Story, Break through the Clutter, and Win More Customers by Marketing Less*. McGraw-Hill Education.

18. Ružić, D. (2003): e-Marketing. Osijek: Ekonomski fakultet u Osijeku
19. Ružić, D., Biloš, A. i Turkalj, D.(2014): E-marketing, Sveučilište Josipa Jurja Strossmayera u Osijeku
20. Sammis, K., Lincoln, C., Pomponi, S. (2015): Influencer Marketing For Dummies. Hoboken: For Dummies.
21. Slater, D. (2014): Online Content Marketing In 30 Minutes: How great online content can attract and engage customers. i30 Media.
22. Škare, V (2011) Je li potreban novi okvir upravljanja internetskim marketingom? Tržište : časopis za tržišnu teoriju i praksu, **23** (2); 263-279
23. Taprial, V., Kanwar, P. (2012): Understanding Social Media. Ventus Publishing
24. Vareško, I. (2017). Osobine i utjecaj utjecatelja mišljenja-influencera prilikom odabira turističke destinacije (Doctoral dissertation, University of Pula. Faculty of economics and tourism" Dr. Mijo Mirković".).
25. Vered, A. (2007): Tell A Friend: Word of Mouth Marketing: How Small Businesses Can Achieve Big Results. Arnon Vered.
26. Vranešević, T. (2014): Tržišna istraživanja u poslovnom upravljanju. Zagreb: Accent
27. Williams, D., Portney, D. (2011): Mastering Blog Marketing: How To Launch Your Website To The Top Of Google. Williams Business services
28. Zarrella, D. (2009): The Social Media Marketing Book. Sebastopol: O'Reilly Media
29. Zimmerman, J., Ng, D. (2017): Social Media Marketing All-in-One For Dummies. Hoboken: For Dummies.

## THE ROLE OF AESTHETIC COMPONENT IN TOURISM PRODUCT DEVELOPMENT

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### ABSTRACT

*The article makes an attempt to disclose the significance of aesthetic components in the tourism product. It is claimed that aesthetic customer satisfaction is also of practical importance, for example, in the process of developing attractive value-based offers that emphasize aesthetic qualities of the tourism product. Generally, aesthetics is not a widely used concept in tourism research. The article draws attention to several reasons that link the concept of aesthetics with the nature of tourism. Modern economic and social development with its standardization, unification, orientation to mass consumption provoke increased attention to aesthetic experience and symbolic value of objects and phenomena as a tool of self-identification and 'personal tuning'. Aesthetic contemplation of nature, monuments, historical places and landscapes makes it possible to discover, express and perceive aspects of reality that underlie our existence and make life valuable, joyful, harmonious and beautiful. These impressions provide tourists with various opportunities to discover and perceive aesthetic qualities. It is assumed that aesthetic perception covers all aspects of tourism service that can affect clients' sensory experience; moreover, it varies from person to person. The level and content of aesthetic experience of one person will not necessarily correspond to experience of others. Thus, it is essential for a tourism officer to define perception peculiarities and use aesthetics of associations to develop and promote individual products and services. Conclusion is made that taking into consideration aesthetic components of the tourism product can help tourism enterprises in the development and marketing of products and services. It is aesthetics that affects satisfaction, positive emotions and customer loyalty. Positive emotions have a direct impact on both intention to recommend the tourism product and intention to use it in the future.*

**Keywords:** *customer value, tourism product, 'hedonic value', tourism aesthetics, client's aesthetic views*

### 1. INTRODUCTION

Modern aesthetic research confirms that aesthetic sphere embraces the whole world surrounding a person – nature, objects, social relations – everything that is expressed in forms amenable to sensory perception. But the specific feature of such perception is non-utilitarian attitude, and the result is spiritual delight in the perceived objects. If we apply this idea to the sphere of tourism, it will turn out that the focus on sensory perception is both the motive and

the goal of a tourist trip. Moreover, tourism aesthetics lies not so much in the perception of the beautiful, as it is determined by modern philosophy, but in the deepest aesthetic meaning – sensual non-utilitarian delight. The tourism product or service necessarily includes aesthetic experience and symbolic values. It is aesthetics that affects satisfaction, positive emotions and customer loyalty. Positive emotions have a direct impact on both intention to recommend the tourism product and intention to use it in the future. The level of aesthetic customer satisfaction is also of practical importance, for example, to develop attractive value-based offers that highlight aesthetic qualities of the tourism product.

## **2. LITERATURE REVIEW**

Modern economic and social development with its standardization, unification, orientation to mass consumption provokes increased attention to aesthetic experience, symbolic value of objects and phenomena as a tool of self-identification and ‘personal tuning’. This is especially reflected in tourism. For example, aesthetic contemplation of nature, monuments, historical sites and landscapes makes it possible to discover, express and perceive aspects of reality that underlie our existence and make our life valuable, joyful, harmonious and beautiful. These impressions provide tourists with various opportunities to discover and perceive different aesthetic qualities. In the 18<sup>th</sup> century, philosopher Baumgarten first used the term ‘aesthetics’ to determine ‘sensory science’ that is a certain result based on feelings that a person experiences when exploring the world [2]. Later, the focus of aesthetics was narrowed to the study of art nature, the scope of aesthetic experience and aesthetic value. As for the latter issue, objectivists determine aesthetic value as an integral characteristic of an object, whereas subjectivists claim that aesthetic value lies in individual perception [1]. According to current understanding of aesthetics, it includes art, nature and ‘real environment’ such as design, elements of architecture, landscape planning, etc. Aesthetics and aesthetic experience can be viewed as an aspect of psychology and sociology. Proponents of subjective approach focus on subjective and empirical aspects of aesthetic consumption. This approach argues that aesthetic response differs from any other emotional event as it can be transcendental and can allow its subject to ‘lose himself’ in the feelings. On the contrary, another approach emphasizes that aesthetic experience is more likely to relate to the sphere of knowledge rather than emotions. Thus, aesthetic response is defined as a special kind of cognition. There is an approach that considers aesthetic experience as biological experience. The determinants of aesthetic experience are similar among cultures and individuals and are a reflection of a person’s evolutionary heritage. Such biological explanation of aesthetic experience is crucially criticized because it lacks cultural component. In an attempt to resolve this contradiction, researches have come up with the theory that distinguishes between biological, cultural and personal means of acquiring aesthetic experience. Its peculiarity is determined by the idea that natural environment forms basic aesthetic (or even pre-aesthetic) preferences that change later, passing through cultural and personal ‘filters’ [3]. The sociological point of view on aesthetics is represented by the concept of Bourdieu who believed that aesthetic judgments are determined socially and not objectively [4]. Bourdieu’s ideas were not universally accepted, partly because his analysis had a limited temporal and geographical basis, which included neither historical nor personal context of variability of individuals’ aesthetic preferences.

## **3. IMPORTANCE OF AESTHETICS IN MARKETING**

Different perspectives and theories in philosophy, psychology, and sociology inspired marketing and management researchers to find practical use of aesthetics in the field of consumption. Economy is described as a system of satisfaction of needs. As a result of the growing satisfaction of basic needs, there may appear needs of a higher level than just functional ones.

The evolution of aesthetics occurred when a person, feeling that products satisfy him functionally, started to look for the benefit of a higher level. Consequently, a rather narrow focus based on the concept of 'usability' was replaced by the notion of 'user experience', which includes satisfaction of a higher order. Aesthetics in this meaning includes entertainment, education and escapism. When customers perceive something, they, in addition to practical experience, have fun, immerse themselves into this very something, feeling important and extraordinary. According to this approach, an individual enjoying aesthetic experience immerses himself in the product of consumption, but remains passive (for example, when visiting a museum or contemplating the beauty of nature). Another approach claims that aesthetics involves not only passive perception, but also proactive attitude of the subject of aesthetic perception, since it sharpens the senses, opposing escalation to 'numbness' of feelings that a person experiences in a 'consumer society' [5]. Most marketing theories share subjectivist position focusing on customers' behavior, their reactions to products and services. Aesthetic value, meanwhile, is determined by the consumer. On the basis of the mentioned above approaches, the following definition can be given: aesthetic perception is a sensory response to environment, which results in the development, evaluation and realization of individual symbolic ideas about products and services a person consumes. Evaluation of such consumption has both cognitive and affective (emotional) aspects. This definition, which theorists are unlikely to agree with, is an attempt to apply the concept of aesthetics to research in the field of tourism.

#### **4. THE AESTHETIC COMPONENT OF THE TOURIST PRODUCT**

The aesthetic component is often understood as a more 'subtle' aspect of tourism products and services, as it is inferior to functional components and serves as a complement to the general purpose of a product. Aesthetic perception covers all aspects of tourism service that can affect clients' sensory experience. And it varies from person to person. The level and content of aesthetic experience of one person will not necessarily correspond to experience of others. Thus, it is essential for a tourism officer to define perception peculiarities and use aesthetics of associations to develop and promote individual products and services. Aesthetics is mainly reflected in the eyes, while perception is based on all the senses of a person. Therefore, if aesthetic value of a product offered to an individual or consumed by him is significant to a person, he will most likely pay a higher price for it. These aspects of consumer behavior should be taken into consideration by tourism officers when they make pricing decisions. Understanding of aesthetics and factors associated with it will help tourism enterprises develop and promote products and services. Today, this understanding is one of the most important requirements for tourism. Aesthetic characteristics raise importance of a tourism product among customers and, consequently, make it a more desirable value. Customer value is often a key concept of marketing research. The term 'value' can be defined as pleasure derived from perception and evaluation of a product or some aspect of a product. The supplier of tourism products and services cannot form value on behalf of the user, since such value occurs only when a product or a service is consumed. In tourism research aesthetics does not appear as a widely used concept. However, there are several reasons that band the concept of aesthetics with the nature of tourism. First, there is an obvious historical link between sightseeing and tourism. It has been proved that aesthetic characteristics influence experience and satisfaction of tourists, contributing to their loyalty to a destination. Therefore, aesthetic qualities of destinations are an essential component of customer satisfaction. Secondly, aesthetics in tourism has its own peculiarity, which lies in the fact that tourist experience implicates complete immersion of a person into the environment that may differ from his daily life. Such experience makes consumers more responsive to external stimuli and leads to more complex interaction with people [6].

Still, this peculiarity has been largely ignored by researchers in the field of tourism. A characteristic feature of tourism is staying outside the place of permanent residence for reasons excluding resettlement or income-generating activities. Tourism is a sociocultural phenomenon (that is both spatial and economic), since its main subject is a person, a tourist. Under the influence of the whole range of motives, one or several of which act as the main ones, a person leaves his residence for certain time, travels, comes into contact with new cultures, customs, traditions and lifestyles, and then, enriched with new life experience, emotional and aesthetic impressions, and interaction with new people, he returns to the place of permanent residence. Such tourist activities lead to twofold sociocultural consequences: on the one hand, changes occur in the environment of tourists' permanent residence, on the other hand, they occur in the countries and places that offer a tourism product. Studies of key factors that impact the development of tourism highlight the following: increase in free time, introduction of guaranteed paid vacations, development of technical communications, wide spread of Internet technologies, emergence of cellular communication, search for extreme experience, dictate of post-modern culture that views traveling as a basic aspect of modern existence. Tourism is closely associated with the aesthetic component because:

- It involves exploration of space and, consequently, perception and cognition of the world, i.e. it is an activity typical of generic human nature that necessarily includes the aesthetic component.
- Tourist activities as well as aesthetic activities involve various cognitive activities: artistic and practical (for example, participation in festivals, carnivals, rituals), reception-aesthetic (perception of natural landscapes, urban ensembles, tourist attractions, works of art), and reflection (associated with the formation of personal judgements, ideals and preferences).
- Tourism infrastructure aims at aestheticization of travelers' life. Since the 18<sup>th</sup> century, such objects of tourism infrastructure as resorts with balls, promenades, libraries, dance halls and inns (predecessors of hotels) have become centers for social life and exhibitions for grooms and brides that guaranteed light, warmth, exquisite cuisine, elaborate furniture, socializing and entertainment. These were places where sociocultural contacts were strengthened, particularly between men and women, and where special attention was paid to aesthetics of daily routine, people's appearance and interpersonal relations.
- In the process of traveling, even individual, interpersonal communication intensifies as a person makes contacts with representatives of foreign cultures, which requires certain aesthetic behavior from both a tourist and a representative of the recipient place.
- Since the 19<sup>th</sup> century, people have massively traveled exclusively for visual impressions. Postmodern society, which focuses primarily on aesthetic experience, requires everyone to travel annually to admire landscapes that are different from what people are used to see every day. Failure to follow this dictate may indicate lack of willingness to spend free time in line with modern standards, which, in return, may result in loss of social prestige and status.
- During a trip, aesthetic perception of reality takes place within all aesthetic categories: the beautiful (for example, looking at the greatest works of art in the Louvre, the Tretyakov Gallery or the Hermitage), the sublime (for example, visiting the Egyptian pyramids), the comic (for example, visiting the circus), the tragic (for example, visiting memorial complexes, places of catastrophic events: hurricanes, tsunamis, etc.), and the ugly (for example, observing kitsch).
- Each tourism product assumes awareness of other cultures, familiarity with works of art, contact with magnificent natural landscapes and many other aspects of aesthetic perception of reality. Therefore, a tourist trip, being a form of aesthetic activity, forms aesthetic taste of a tourist.



- Common motives of modern tourism include desire for entertainment, pleasure, imitation and aesthetic impression. These are the key values of modern era that honors aestheticization of consumption. At the same time, theatricality has always accompanied tourism. For instance, resort areas have long competed with each other offering guests the largest ballrooms, the longest embankments, the highest towers, the most equipped amusement parks and the most beautiful gardens.
- Since visual impressions in tourism have always been one of the most important values, theatricality and partial mixture of various cultural practices have become a daily occurrence in tourism product consumption. Most of them have reproduction nature (e.g. gaming machines, color music, laser lighting) and are practices focused on pleasure, anti-elitism, as well as localization on the verge of art and everyday life.
- Consumption of the tourism product is based not only on contemplation, but also on joint entertainment. Thus, imitation takes a special place in tourism.
- Tourist experience implies elite romantic experience based on admiration of beauty in loneliness and concentration, which requires certain cultural capital that could allow a tourist to compare the observed landscape with sketches by great poets, writers and artists. Romantic experience of a tourist is based not on direct perception of reality, but on perception of its representation, especially artistic and photographic ones. This makes a tourist admire not the view but its idealized representation, well known from postcards, photographs, travel brochures and video clips.
- Tourism connects visibility, aesthetics, commerce and popularity in a specific way.
- In the process of tourism product consumption (especially in international tourism), institutionalized peeping takes place. It allows people to spy on lifestyles of other nations, to transcend the boundaries of various spheres that are perceived as personification of certain values, such as high and low culture, artistry, good taste or its lack.
- As a rule, aesthetic experience of a tourist takes place among other tourists or the entire tourist group. Joint discussion, aesthetic evaluation of impressions from what a tourist saw and heard strengthens emotional experience and allows a tourist to evaluate his own aesthetic taste and aesthetic perception of reality. This enriches the inner spiritual world of a person and polishes aesthetic perception of the world.

Thus, tourism as a sociocultural phenomenon that contributes to deeper perception and impression of a tourist, and becomes aesthetic value.

## **5. PROCESS OF AESTHETIC PERCEPTIONS IN TOURISM**

Tourists seek experience that could contribute to their personal identity, and this experience turns out to be another form to express their personal or group culture. Therefore, consumption of tourism products and services receives symbolic meaning. Consumers of the tourism product evaluate natural and artificial conditions of their environment. In this case, symbolic abundance of environment becomes an essential element of evaluation. Surrounding conditions affect all senses and include such characteristics as temperature, lighting, noise, music, and smell. Taking into consideration such sensory perception when a company provides some service for tourists can increase overall consumers' satisfaction of the service and benefit the tourism enterprise, giving it a competitive advantage. This is confirmed by empirical research in tourism literature that point at interrelation between aesthetic qualities of 'design', 'architecture' and 'atmosphere' of tourism business, customer satisfaction, and future intentions to use services again [7]. At the first stage, tourists get acquainted with the destination, its products and services. The stage consists of a set of activities that help consumers convey symbolic value of their choice. This includes both natural and artificial environment. Consumer experience is subjective and is largely based on emotions and social interaction.

At the second stage, tourists evaluate their experience comparing information from various resources, such as media, friends or relatives, with their own expectations. This evaluation results in the feeling of satisfaction or dissatisfaction, which affects further intentions to use the consumed tourism product. It is a combination of cognitive and emotional evaluation. Cognitive evaluation is traditionally used to measure service quality and satisfaction, for example, cognitive confirmation or denial of service expectations compared to perception of factual service presentation. Emotional evaluation also plays a significant role in tourism. This field of research is related to development of innovative processes in tourism services and is associated with the choice of a tourist route, travel time frame, eventful content, degree of comfort, etc. Satisfaction in the context of this study can be defined as subjective evaluation of tourism product or service consumption by an individual, based on all components related to his experience [8], in which aesthetic characteristics are of special importance. There are two qualities of aesthetic response. The first is 'hedonic value' which refers to the feeling of delight or generalized pleasure that a person experiences when he is looking at something beautiful or attractive (for example, work of art, landscape, etc.). The second is deep experience that deals with the feeling of deep excitement. This indicates that aesthetics, in a broad sense, can be viewed as the feeling of pleasure that is achieved by simply physical attraction associated with any of these qualities. This means that aesthetics of the tourism product affects consumers wider than just visual perception [9].

## **6. CREATION OF TOURISM PRODUCTS ON THE BASIS OF AESTHETIC VALUES**

Given that tourists' impressions can be viewed as 'managed pleasure' or 'hedonistic', it is reasonable to assume that most tourists are looking for or expecting positive emotions, which can be described as the main product of tourism services. Consequently, it is important to understand how tourism contributes to creation of this product. This understanding is of practical importance as it can help managers develop value-attractive offers, emphasizing aesthetic qualities of the tourism product and, thus, increasing its value to customers. By their nature, products have aesthetic components that can be sought consciously and more often unconsciously. Besides, today many products may differ from one another only in aesthetic or design criteria. Therefore, aesthetic components of the tourism product are essential characteristics used to determine the attitude of its consumers. Consumption of the tourism product means adoption of other cultures, which leads to changes in daily life and culture of consumers, as well as their incorporation into consumers' lives as a complementary element. Development of information and communication technologies in many areas of our lives significantly increases the amount of information received about other cultures, which further enhances the effect of interiorization. Current trends of individualism also have impact in tourism sector. Clients strive to personalize a product, perceiving it as 'genuine' and forming their own chain of values that they believe is of great importance and that they bear responsibility for. It is clear that such chain of values is not purely individual. It is rather a single reflection of group and social values. Formation of tourism product consumption experience is a dominant factor that influences consumers and motivates them to purchase the offered product. In this context, the consumer is looking for emotional experience, such as, for example, excitement. The most important feature of emotional experience is memorability: while products are interchangeable, experience is unforgettable. In order to turn tourism products and services into 'unforgettable experience', offers should be formed with understanding of significance of this feature for the consumer. Use of subconsciously existing associations, memories and emotions gives manufacturers opportunities to manipulate consumers' activity in the desirable direction. More and more enterprises in tourism sector are following this path, trying to create the image of a product through aesthetic, design or architectural corporate identity.

Therefore, aesthetic components play a crucial role in the formation of associations, perceptions, and emotions, which, in their turn, are an integral part of consumer experience. At the same time, in the process of product development with regard to clients' aesthetic ideas, tourism industry encounters traditional experience: the consumer, on the one hand, requires a unique personalized product, but, on the other hand, seeks comfort, convenience and habitual living conditions. Managers of travel agencies who focus on aesthetic appeal of a product get a sustainable competitive advantage. However, as a rule, aesthetic value of a product as a strategic tool of competition is ignored because there are difficulties in adequate assessment of how it can improve products, communications and corporate identity of a company or a destination. Both theoretical and empirical studies show that aesthetics can play a decisive role in increase of the added value of a product, especially in tourism. Due to the importance of the aesthetic component in the characteristics of the tourism product, it is necessary to conduct further research in the following directions:

- a) Possibilities of identifying aesthetic characteristics and considering them in the process of tourism product development by tourism enterprises;
- b) Extent to which existing methods of identifying preferences of consumers of tourism services are adequate to the task of determining the influence of aesthetic components on consumers' choice;
- c) Training (content-based and method-based) for employees of travel agencies who interact with customers, identify aesthetic needs of consumers and find ways to meet them, and as a consequence, increase commercial value of the provided product.

## 7. CONCLUSION

Aesthetics can contribute to formation of the image of a tourism product, in particular its functional and general characteristics. Aesthetic evaluation is also a part of the overall evaluation of tourism experience, and therefore, deserves close attention from tourism officers. Consequently, it is important to understand how aesthetic characteristics of the tourism product contribute to its development, as it is of great practical importance. For example, it will help managers develop value-attractive offers, emphasizing aesthetic qualities of the tourism product and, thus, increasing its value to the customer. When offers are similar, aesthetic characteristics of the tourism product can provide a competitive advantage.

## LITERATURE:

1. Brovko N.V. (2007) Priroda estetičeskoj tsennosti [Nature of aesthetic value]. *In Vestnik OGU [Newsletter of OGU]*. 11, 2.
2. Vasnikovich A.I. (2008) Estetiko-semiotičeskaja kontsepcija A.G. Baumgartena [Aesthetic-semiotic conception of A.G. Baumgarten]. *In Slovo.ru: Baltijskij aktsent*. 4, 93-105.
3. Dusenko S.V., Lebedev K.A. Nyurenberger L.B. Arhipov A.E. (2014) *Formirovanije upravljenija subjektami turističeskogo biznisa [Formation of tourist business subjects' management]*. Novosibirsk.
4. Nikonova S.B. (2013) *Estetizatsija kak paradigm sovremennosti. Filosofsko-estetičeskij analiz transformacionnyh protsessov v sovremennoj culture [Aesthetization as a contemporary paradigm. Philosophic-aesthetic analysis of transformation processes in modern culture]*. St. Petersburg.
5. Rogaleva N.L. Klimova E.N. (2018) Innovatsionnaja kontsepcija marketinga uslug [Innovative conception of service marketing]. *In Nauka, obrazovanije, inovatsii: puti razvitija [Science, education, innovations: direction of development]*. 161-165.

6. Sevrjukov I.J. (2016) Rynok turistskih uslug: sovremennoje sostojanije i tendentsii razvitija [Market of tourism services: current state and tendencies of development]. In *Ekonomika: teorija i praktika [Economics: theory and practice]*. 4 (44), 43-48.
7. Shapinskaja E.N. (2014) Krizis esteticheskikh tsennostej v “postkulturnom” obshchestve: kontseptsija kulturnogo kapitala P’jera Burd’je [Crisis of aesthetic values in ‘post-cultural society:]. In *Chelovek. Kul’tura. Obrazovanije [Man. Culture. Education]*. 1 (11), 90-108.
8. Pikkemaat B., Weiermair K. *The aesthetic (design) orientated customer in tourism-implications for product development*. URL: <https://www.researchgate.net/publication/330841147> (accessed 01.03.2019).
9. Breiby M.A. (2014) *Aesthetic experiences and behaviour in nature-based tourism*. Norwegian University of Life Sciences.
10. Linman Li. (2017) Analysis on relationship between tourism aesthetics and development and utilization of tourism resources. In *Advances in Economics, Business and Management Research*, volume 48. 9th International Economics, Management and Education Technology Conference (IEMETC 2017).
11. Genç M.A. (2016) Making touristic areas aesthetic according to opinions of gifted students. In *Sociology and Anthropology*. 4, 141-146.
12. Rahmanita M. The aesthetics of nature tourism through the philosophical perspective of Immanuel Kant. In *Advances in Economics, Business and Management Research*, volume 52. 2nd International Conference on Tourism, Gastronomy, and Tourist Destination (ICTGTD 2018).

## **“2GO” FORMAT INNOVATIVE TECHNOLOGIES IN TOURISM: AUGMENTED REALITY OF TRAVELLING**

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### **ABSTRACT**

*The contemporary period of humanity development – the digital era, predetermines structural transformation in the ways all the players on the tourism market interact, and provides the basis for development of revolutionary new information and communication technologies. All these change significantly the existing behavioral models on the service market of both - a seller of a tourism product and its consumer. The latter are increasingly becoming more independent of tour operators and of travel agents and, consequently, more capable of arranging their holidays themselves. Tourism industry is rightly called the industry of impressions as it is positive emotions and new experiences that are sought after by travelers. When going on holidays today's travelers use modern information software without even noticing that. There is a wide range of tourist services and the freedom of choosing among holiday destinations affects greatly travelers' behaviors. Accessibility and variability of tourism products result in customers being more precise in making their choice. That means they want tourism market services to be up to higher standards. In such dynamic circumstances when the market situation is movable it has become difficult for tourism organizations to meet rapidly growing and evolving customers' demands. Travelling as it is now fail to satisfy travelers demands from the point of view of giving them new experiences and being enjoyable. Authors believe that meeting this challenge is a very important prerequisite for the commercial success of tourism entities and rather perspective for social and economic development of tourist destinations. In this article the authors presume that “expanded reality” is a promising innovative technology that can enhance the positive impact of travelling. The authors also introduce a new term, “2GO” technologies, to specify innovative mobile technologies used by travelers and to group them together. They also reveal the specific use of these technologies and carry out a comparative analysis of AR-MR-VR technologies.*

**Keywords:** *tourism industry, arrangement of travelling, innovative technologies, “2GO” format technologies, augmented reality (“AR”) technologies*

### **1. INTRODUCTION**

These days it has become quite difficult to find a location where all the players on the tourism market might avoid any sort of involvement in communication and its influence on them. Scientific and technological advance expands the quality and quantity of the information

background, the ways and mechanisms of transmitting information, application areas and provides the basis for emergency of new business models of working on the service market [4]. Innovative ICT, conceived positively on the market and implemented into commercial practice by tourism industry organizations, in their turn, impact considerably the tourist behavior transformation. The contemporary period of humanity development can be described as “the digital era”, i.e. the period in its development that offers great opportunities for extracting useful and relevant information, its usage (e.g. processes of transmitting and/or receiving information) as well as instant and unlimited excess to currently used information massifs or will-be-used ones. In other words, communication processes and “e-information” underlie existence and interaction in modern society. Tourism is one of the segments of economy, where digitizing of business processes goes at a fast pace and is done globally. It results in overall implementation of the most sought after ICT: booking any accommodations, flights and other transportation means tickets online. These opportunities that have become available are the ICT pioneers on the tourism market. And it is obvious that commercial success and appeal of information and communication technologies to the market are the main factors for turning those ICT into global ones. Sequential implementation of new technologies and digital platforms for providing the new possibilities for business has become the industry-specific feature of tourism. Integration of digital platforms, user’s content, feedback connection, social networks, usage of a large massifs of data and artificial intelligence have influenced the ways of communicating, using tourist services and exchanging information. The RF government has clearly defined the role and importance of digitizing of economy for overall development of the country. The program “Digital economy of Russian Federation” drafted and approved by RF Government Chairman Dmitry Medvedev in 2017 aims at reaching the following goals:

- forming a unique system of RF digital economy with digital (electronic) information in all areas of social and economic activity as its key factor;
- developing technologically advanced businesses by means of providing them with relevant conditions and deleting restrictions;
- increasing RF competitiveness within the global market [3].

In summer 2018 President Putin while talking at BRICS summit held in Johannesburg pointed out that “digitizing is a priority of economical policy of our country – Russia” and that the adopted program “Digital economy” could increase productivity in the country by 30% by 2024. According to him it was new Russian economy segments that would account for more than 10% of Russian GDP [11]. As far as 15 years ago one could hardly anticipate that the majority of RF population would get accessed to the high-speed quality but budget Internet of different formats. If at that time a traveler started looking for tourist destinations from looking through travelers printed materials (theme journals, newspaper inserts, leaflets, booklets, travelers guides), reading billboards, listening to word-of-mouth information or, in some cases, to radio commercials, then nowadays selecting a destination is done via the Internet search engines, visiting travelers web-sites or joining a group of a relevant organization online, participating in micro-blogs (“social media”) or using mobile applications. With the advent and influx of innovative technologies “smart” mobile devises (smart phones, laptops, tablets, watches, etc.) with in-built advanced options for using advanced communication technologies, such as Internet-messengers (Telegram, WhatsApp, Viber, WeChat and others), have been in great demand among consumers of tourism services. So, tourism companies have to alter the ways of communication with their clients to stay ahead of competition: today getting connected with tourism organizations using a messenger is quite an ordinary thing for their clients. As for sending fax-messages to communicate some urgent information (e.g. about last-minute deals) is considered technologically obsolete, “archaic and confusing” with no visible advantages for today’s customers [6].

The largest number of players on the tourism market view ICT as the source of indispensable and highly effective instruments of management, distribution, holiday planning, communication and marketing. Due to accessibility of such services “a digital traveler” is becoming increasingly autonomic from tour operators (travelers agencies), having constantly growing demands and expecting personified service. Those changed expectations of customers force all the participants on the tourism market to adapt their work and operation models to meet consumer growing demands and become more successful commercially [5]. The prerequisites discovered create favorable conditions for new players in the value-building chain in tourism, especially digital “aboriginals”, such as online-aggregators of travelling. Advent and usage of innovative technologies in the tourism industry have been predominated by the specific social and cultural needs of the contemporary digital society. Being the advanced economic industry focused on implementation of innovations tourism makes a considerable impact on the development of the related economic branches. According to the UNWTO assessment results, digitizing of such industries as aviation, travelling and tourism might take place between 2016 and 2025 with a positive impact in terms of increased dynamic of the world economy:

- increasing profit of the industry to US\$305 billion through increased cost-efficiency as the result of cutting down on the production and commercial costs when designing, promoting and selling tourism products;
- redistribution of players’ shares: US\$100 billion will go from long-term players to new participants;
- making US\$700 billion profit for consumers of tourist services and countries populations in general through minimization of human effect on the environment, increased security and reliability and savings in labor costs and time;
- replacing conventional jobs with new and more technological next-generation ones (also because of applying innovative ICT) to the tourism industry and to the relevant industries as well [15].

It’s obvious that structural specifics of the tourism product have affected the choice of its distribution channels and ways. Firstly, it concerns the ways of targeted marketing and offering the product to the target customer segment. As services make up the largest share of the product (apart from goods and labor used), selling them involves some difficulties. For example, intangibility of tourist services as well as their other characteristic peculiarities (inseparability of the production processes from consumption, variable quality, impossibility of accumulation, storage and transportation), prevents travelers from testing a service before consuming it to give a rough estimation to its quality, value, personal benefits for making a firm final decision to buy this tourism product. It’s hardly possible for a customer to assess the comfort of a hotel room, to experience the pleasure of strolling along a sand beach or watching the beauty of mountains, to feel the fest atmosphere of an event just sitting in a traveler agent’s office. However the statement about impossibility to test a service is true only to some extend. Incorporation by the tourism industry innovative communication means, i.e. advanced technologies capable of giving customers the possibility to form their opinions of a service before buying it, has helped to address the above-mentioned problems in the most effective way and contributed a lot to the positive travelling experience. In general terms they aim at expanding and/or replacing reality – really existing things. We argue that today it makes sense to talk about three promising ICT which are being increasingly favored by national tourism businesses as well as foreign ones:

1. “augmented reality”, AR;
2. “mixed reality”, MR;
3. “virtual reality”, VR.

By referring to the above-mentioned technologies as to “information and communication technologies” as they were defined briefly under the Federal Law “On information, information technologies and information security” N 149-ΦЗ, of 27.07.2006, chapter 2 we can view them as advanced ICT. As it is stipulated by the law ICT are “the processes and methods of searching, collecting, storage, processing, sharing, distribution of information and the ways of applying those processes and methods” [1]. AR-technology as it follows from its name is based on augmenting existing micro- and macro environment with virtual information that can take different forms. We mean that with the help of a complex of different technical means and software the real world picture is augmented with useful text and graphical information, shapes, sounds, etc. It is worth mentioning the fact that introduction of the prototype of this technology dates back to the 50s of the XX century, when Professor Ivan Edward Sutherland of Harvard managed to augment the interior of a room with a virtual geometrical marking grid which was being watched on the screen by all the attendees [13]. When talking not about scattered instances of applying AR-technologies by big players, but about their widespread application (in the narrow sense), we should emphasize that this technology hadn’t been used on the large scale until 1999 and, moreover, had been unappreciated by many professional communities. To implement AR-technologies complex but irrational approaches with the use of hard- and software had been engaged. But the situation cardinally changed when Professor Hirokazu Kato of Nara institute of science and technologies introduced his software innovation “ARToolKit”. That software set allowed to effectively track the video stream on cameras and instantly overlay virtual images over it. There is another reason for calling “ARToolKit” unique software: it can be used for different platforms, including mobile ones [8]. Creation and further improvement of “ARToolKit” library software has made AR-technology widespread because it supports mobile devices. Owing to “ARToolKit” we can evidence AR- technologies in their modern form, as they are today. Global spread of computers and mobile devices, their accessibility and technological improvement are the objective prerequisites for the revolutionary breakthrough in AR- technologies. And the actual starting point of AR boom was in 2010, the year when a well-famous “Time” magazine added AR-technologies to the list of technological trends of the future for the first time and drew public attention to the modern digital ICT. Being a digital system an AR-technology is characterized by the following features:

1. it combines virtual space and reality;
2. it interacts instantly in the real-time mode;
3. it supports 2D/3D formats [7].

Advanced AR-technologies combine tangibility and audibility, but it is visibility (getting visual information) improving which is paid great attention to.

## **2. COMPARATIVE ANALYSES OF AR-MR-VR TECHNOLOGICAL FEATURES**

As all above said technologies are applied on the global service market it would be reasonable to identify the characteristic features of each of them. Today’s customer who uses tourism services begins to comprehend the core difference between augmented and virtual reality technologies.

- VR-technologies are developed for fully replacing real life by combining realistic 2D-3D graphic objects, 360° panoramic video, volumetric sound in the optimal way to let a person feel like being on a trip to different countries without leaving his hotel room. (“VRRoom Service” of “Marriott”). That means that wearing headsets consumers of tourist services believe they really do so and feel a full range of emotions like astonishment, excitement, being proud, tenderness, joy, sadness, fear, which encourage them to buy “live” tours they have tested virtually and book from “Marriott”.



- AR-technologies when compared to VR ones are not aimed at replacing real life with synthetic reality. They just expand it by relevant information provided in graphic or audible format. To exemplify that, we may consider a domestically designed AR-guide for visitors of RF museums. Using the application installed on a “smart” device you can learn important details and interesting facts about the exhibit by locking that device onto it or to listen to an audio guide, to see art designs or the way the exhibit looked in his pre-restoration state. (“Artefact – AR for Art&Museums app” for relevant mobile platforms designed by the RF Ministry of Culture).

But when considering the features of MR-technologies it should be said that there is no common approach to differentiating this technology from AR one, because there are many divergent views on defining domestic and foreign professional communities technologies. Fig. 1 shows that MR is a combination of AR and VR-technologies which hampers defining terminological borders between those technologies. To carry out the comparative analyses of AR-MR-VR technologies we use the following criteria:

- “an immersive effect” (technologies that create strong feelings of belief in the reality of a situation in customers);
- “a visual component” (a set of visual components and objects projected using the technology);
- “the environment” (digital environment created using the technology).

Traveling as such is a human activity, involving movement within space and time. These are moving between cities within one country (domestic, internal tourism) as well as crossing borders (external tourism). Human mobility is the essential part of life in the modern society. A temporary traveler to a country can bring in the limited luggage. Whatever the purpose of visiting a country and a traveler’s bag contents, we can hardly imagine them travelling without a “smart” phone or other “smart” gadgetry. Indispensability, portability, multifunction of “smart” phones have all contributed a lot to popularizing gadgets as main AR-technologies devices for travelling. And here people’s practicality has also played a part: the technology has become highly demanded as user-friendly one. Indeed, taking into account a variable format and diversity of technical devices which are compatible with AR-technology a “smart” phone can be viewed as the universal tool. For it is impractical to carry an AR-laptop, AR-overhead projector, AR-glasses or AR-helmet about when travelling. Given the dynamic of travelling today it would be useful to compile similar innovative technologies in one group or category. For this reason the authors introduce a “tourism technologies 2GO” term (from English “to go” meaning to move, while going) to describe different modern technologies and software affordable to the majority of travelers as a group. They can operate without any peripherals and are tourist-friendly, mobile, helpful and easy-to-use. So this is the ground for including the option of using AR on mobile phones into “2GO” tourism technologies. QR-code is one of the most successful options of “2GO” format AR-technologies as it can be applied for many areas. QR-code (from English “quick response”) is a 2D matrix code for reading information using a “smart” gadget camera which is further decoded with the help of that gadget’s relevant software to become comprehensible by a user. QR-code developed in Japan in 1994 by “Denso-Wave” has expanded its use from car making area to many other ones, including tourism. And it was the bar-code failure in coping with growing informational inflow that induced the development of QR-code. In the RF the increased demand for QR-coding was in 2010. What fostered the spread of the technology were the changes made to The Federal Law “On applying cash-control operating machines for making payments within the Russian Federation” from 2017 imposed using new cash-operating machines (COM for KKM in Russian) in the commercial activity on economic entities [2].

New COM are capable of forming bar-coded receipts to enable customers to scan them for verifying the legitimacy of commercial deals and therefore reducing the risk of document forgery. The majority of today's travelers use AR-technologies in their tours without even noticing that as they have become a part of modern life. QR-codes in tourism are used for providing travelers with such services as:

- public transport - QR-codes, displayed on the stations, enable commuters to get relevant information about transport schedules and arrivals. This practice has been successfully applied to Novosibirsk public transport for instantly collecting transport fare from passengers [12];
- hotel services - by attaching the codes on the folio or hotel bills guests can get connected directly to "TripAdvisor" website which allows them to easily leave references about services provided; a coded key to a hotel room gives a guest the additional information on, for example, the incoming events, a gym or a park location; the QR-coded tourist information file, available from any hotel room, informs its guest of the extended range of the hotel services as well as of telephone numbers of all hotel service centers;
- public catering ("HoReCa") - cafes, pubs, restaurants can attach QR-codes on their flyers offering special deals with dishes and drinks, on table-tented leaflets put on the tables or bar counts when a guest can get a bonus (e.g. a discounted or free meal) by just scanning the code; he can enter the extended menu containing pictures of or videos about origin and cooking methods of dishes. QR-coded outdoor displays can be used for making orders or reserving tables;
- guided tours - using QR-codes for arranging interactive quest-guides involving competitions between guided-tour members and enabling them to look for information needed to do a quest. By scanning a code attached to the historic and cultural objects one can get the additional information about them provided in several languages which is very handy for foreign tourist groups.

Referring to the national QR-code experience in tourism, it is worth pointing out a "Learn about Moscow" project, which was designed in cooperation with Moscow Department of Education, Cultural Heritage, Culture, Information Technologies. The project site offers the virtual experience of travelling around Moscow sights" and provides a lot of educational information about Moscow. That site is built using a "Wikipedia" format: visitors to the site can supplement it with the additional information on, for example, a new sight to see or design their own routs around the city. This is done through graphic QR-codes attached to historic, architecture and cultural artifacts [10]. Augmented Reality adds a "wow-factor" to the process of searching and selecting a tour as well as to the process of buying and experiencing it. Advance in AR-technologies and quick spread of "smart" gadgets among customers have made it possible to introduce the QR-code equally effective ways of using "2GO'-format AR-technologies working on mobile platforms into the tourism industry:

- showing the specific features of a tourism product before selling it – if a traveler never visited a country like Egypt it would be difficult for him to make a buying decision based on pictures or videos only. In this situation AR-technologies seem rather handy: the software working on a mobile platform will supply the 3D sights of a country of visit in detail. For example, by locking a gadget's camera on a picture of Cheops pyramid, the in-built app downloads a 3D model of the pyramid on the screen and you can rotate, zoom it in and out to get a clear picture of one of the Seven World Wonders;
- encouraging sales in tourist services – travelers today when considering buying a tour can hardly be impressed by the conventional attention-getting ways. By augmenting conventional channels with innovations AR-technologies promote communication to the next level: using AR-technologies one can breath life into printings (leaflets, magazines,

etc.). For example, “Marriott Hotels” in cooperation with “Blippar” make interactive ads for their magazine. Users of tourist apps for “smart” phones may scan the ad to unlock a video presentation or added illustrations. “PAI Hotels” offer their potential customers to install a mobile app to view every their site in AR format. And after viewing all of them they may get some bonus from the chain;

- “smart” navigation through a tourist destination and making a rout – a stranger to a city or country is very vulnerable as not knowing the language, being unaware of culture and legislation, having difficulties in finding right ways through the place - all these are the potential hazards for comfortable relaxation.. However, in this respect AR-technologies have already being applied to minimize the risks. A traveler who has just arrived in a country and is only stepping out of an aircraft or train or bus tries to work out where to move. Here modern mobile apps for travelers are at his service; he enters the arriving location to the interactive map and finds out where to go, how to get, what the next station or the nearest sights are. An “ARCity - AR Navigation” mobile app (designed by «Blippar») provides innovative travelling experience around the world cities and mega-cities. By means of imposition (overlying) option the app visualizes the information for every AR-rout;
- accommodation services – a traveler can find any information about all the hotel facilities and local sights, order room-cleaning, switch on/off a TV-set or operate air-conditioning system and lightning without leaving his room. He does it by launching the hotel app on his “smart” device when locking its camera on the marker to get interactive information. For example, “HubHotel” fund interior supplies an interactive wall map for every room, which can project local sights and information about upcoming events after being locked with a gadget’s camera.
- public catering – public catering has already being using AR-technologies for: reading a menu and viewing the meals in the realistic 3D format by locking a gadget’s camera on the table («Kabaq» app). Such modern approach of visualization enables customers to make a thoughtful decision before ordering a meal.
- guided tours, museums, exhibitions, zoos, botanic gardens – today these attractions also use AR-technologies. “Visit Petersburg.AR” app designed by Russian developers introduces travelers to Saint-Petersburg unique history – using this app which is a kind of online guide they can track the way around the city depending on their own preferences [14]. Another app called “Arboretum-guide” is the AR interactive guide around Sochi Arboretum. “Arboretum-guide” offers the option of using the arboretum interactive map and audio guide, to hear about local sights. This app includes unusual AR functions – showing animals, living in the arboretum therefore giving visitors the opportunity to watch their behavior in their natural habitat or take photos with virtual animals. It also contains the basic information about the arboretum – working hours, entrance and service prices and contact numbers.
- overcoming language barriers– mobile applications for translating into different languages reduce the degree of confusion of people on a terminal visit to a country. Advanced applications are capable of translating the information signs, the speech and written information on the spot (“Google Translator” app and others) [9, 13].

Despite positive references we can’t but mention some difficulties in applying “2GO” format AR-technologies in tourism:

1. a lack of the universal mobile AR-application for all tourist destinations – which implies inconveniences for both – travelers and tourism organizations: the need for downloading a number of apps with different structures for every museum (museum group), hotel, restaurant, etc. to find the desirable which is time and sometimes money consuming;

2. additional costs of creation and maintaining the infrastructure needed for applying “2GO” format technologies;
3. costs of designing and maintaining the functionality of an AR-application;
4. excess of “smart” gadgets - a variety of mobile devices with various specifications impedes the development of AR-applications while increasing costs;
5. lacking a universal mobile platform for “smart” devices also impedes the development of AR-applications and increases the costs on part of tourism industry organizations.

### 3. CONCLUSION

Thus, a digitized tourism segment can implement innovations and create new business opportunities to ensure steady competitiveness, growth and sustainability of the industry. “2GO” format AR-technologies provide the revolutionary new ways of applying “smart” gadgetry by the tourism market players for better satisfying customers’ demands and tackling today’s challenges effectively. No one can predict to what extent the application area of AR-technologies will expand in the course of time and the degree of their sophistication. Advanced “2GO” format AR-technologies not only provide tourism organizations with a large resource for attracting visitors and travelers by means of which they can enhance people’s positive impressions about their trips but encourage them for the new ones.

### LITERATURE:

1. Ob informatsii, informatsionnykh tekhnologiyakh i zashchite informatsii [On information, information technologies and information protection]: Federal law from 27.07.2006 № 149-Ф3, edition from 18.12.2018 - Access mode: URL: [http://www.consultant.ru/document/cons\\_doc\\_LAW\\_61798/](http://www.consultant.ru/document/cons_doc_LAW_61798/) (access date: 09.01.2019)
2. O primeneniі kontrolno-kassovoy tekhniki pri osushchestvlenii raschetov v Rossiyskoy Federatsii [On using cash-controlling machines for doing calculations in the Russian Federation]: Federal law from 22.05.2003 № 54-Ф3, edition from 25.12.2018 — Access mode: URL: [http://www.consultant.ru/document/cons\\_doc\\_LAW\\_42359/](http://www.consultant.ru/document/cons_doc_LAW_42359/) (access date: 09.01.2019)
3. Programma “Tsifrovaya ekonomika Rossiyskoy Federatsii” [Program “Digital Economy of the Russian Federation”] (approved by RF Government Decree from 28.07.2017 №1632-r) - Access mode: URL: <http://static.government.ru/media/files/9gFM4FHj4PsB79I5v7yLVuPgu4bvR7M0.pdf> (access date: 09.01.2019)
4. Arkhipov, A.E., Sevrukov, I.Y., Bunkov, V.G. Osobennosti formirovaniya postindustrialnogo obshchestva Rossii [The specific features of Russia’s postindustrial society formation] /A.E. Arkhipov, I.Y. Sevrukov, V.G. Bunkov // *Economy: theory and practice.* – 2017. – № 2 (46). – P. 94-98.
5. Dusenko, S.V., Lebedev, K.A., Nyurenberger, L.B., Arkhipov, A.E. Formirovaniye upravleniya subyektami turisticheskogo bisnesa [Formation of the administrative body for tourism entities]: Monograph. – M. – Novosibirsk, 2014. – 200 p.
6. Nyurenberger, L.B., Arkhipov, A.E. Marketing turisticheskikh uslug: sushchnostnyye i funktsionalnyye osobennosti [Tourist services marketing: essential and functional features] / L.B. Nyurenberger, A.E. Arkhipov // *Herald of Altai State Agrarian University.* - 2011. - №2 (76). - P. 124 - 128.
7. Rindatch, M.A. Povisheniye konkurentosposobnosti organizatsiy turisticheskoy industrii: aspekty informatizatsii [Increasing competitiveness of tourism organizations: aspects of informatization] / M.A. Rindatch // *Crimean scientific herald.* – 2015. – № 5-1. – P. 111–121.

8. Sevrukov, I.Y. Sovershenstvovaniye metodov prodvizheniya sanatorno-kurortnikh produktov kak lokalnyy component upravleniya [Improvement of the methods for promoting health-resort products as a local management component]: dissertation for PhD in Economics: 08.00.05 / Sevrukov Ivan Yuryevich. - Sochi, 2017. - 165 p.
9. Azuma, R.T. A Survey of Augmented Reality / Ronald T. Azuma // Teleoperators and Virtual Environments. – 1997. – № 6 (4). – P. 355 – 385. – Access mode: URL: <http://www.cs.unc.edu/~azuma/ARpresence.pdf> (access date: 25.12.2018)
10. V chem rasnitsa mezhdru VR, AR i MR? [How do VR, AR and MR differ?] | AR/VR/MR Conference [Electronic recourse] - Access mode: URL: <https://ar-conf.ru/ru/news/v-chem-rasnitsa-megdu-vr-ar-i-mr-67080> (access date: 24.02.2019)
11. Dopolnennaya realnost (AR): perspektivi i budushcheye tekhnologii dopolnennoy realnosti [Augmented Reality (AR): prospects and future of the augmented reality technology] [Electronic recourse] - Access mode: URL: <https://www.kp.ru/putevoditel/tekhnologii/dopolnennaya-realnost/> (access date: 09.01.2019)
12. Dopolnennaya realnost v turisme [Augmented reality in tourism] | Augmented reality [Electronic resource] - Access mode: URL: <https://augmentedreality.by/news/turizm/> (access date: 02.02.2019)
13. Istoriya vozniknoveniya dopolnennoy realnosti: pervyye ochki AR [Augmented reality emergence history: the first AR glasses] | VR-JOURNAL [Electronic resource] — Access mode: URL: <https://vr-j.ru/stati-i-obzory/istoriya-vozniknoveniya-dopolnennoj-realnosti/> (access date: 09.01.2019)
14. O projekte [About the project] [Electronic resource] - Access mode: URL: <https://um.mos.ru/about/> (access date: 09.01.2019)
15. Putin nazval tsifrovizatsiyu odnim iz prioritetrov ekonomicheskoy politiki [Putin has called digitizing one of the priorities of the economic policy] – RIA News, 26.07.2018 [Electronic resource] - Access mode: URL: <https://ria.ru/20180726/1525382352.html> (access date: 09.01.2019)
16. Sberbank vnedril v obshchestvennom transporte Novosibirskaya sistemu QR-kodov, kotoraya umenshaet stoimost proyezda [Sberbank has implemented QR-code system on Novosibirsk public transport for commuters to cut down on the transport fare] [Electronic resource] - Access mode: URL: <https://ksonline.ru/337316/sberbank-vnedril-v-obshchestvennom-transporte-novosibirskaya-oplatu-po-qr-kodu/> (access date: 22.02.2019)
17. How to gain from Augmented Reality in tourism and travel – 2019 [Electronic resource] - Access mode: URL: <https://thinkmobiles.com/blog/augmented-reality-tourism/> (access date: 19.01.2019)
18. Visit Petersburg – The Official Tourism Portal of Saint-Petersburg [Electronic resource] - Access mode: URL: <http://www.visit-petersburg.ru/ru/> (access date: 02.03.2019)
19. World Tourism Organization UNWTO | Specialized agency of the United Nations [electronic resource] - Access mode: URL: <http://www2.unwto.org/> (access date: 09.01.2019)

# ATTITUDES TOWARDS ORGANISATIONAL CHANGE IN THE REPUBLIC OF CROATIA

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## **ABSTRACT**

*Organisational change, as a part of organisational dynamics, is the process of changing the existing organization, i.e. the transition from its current state to a future desired state with the aim of increasing organisational efficiency and effectiveness, and adapting to the new environment. Understanding of change and forces that drive it has become increasingly important in today's continually evolving business environment. Globalization, technology, different types of environment (economic, political, etc.), and organizational growth are some of the most common drivers of organizational change. The process of organizational change is very complex; thus different models have been developed to assist managers in implementing it successfully. Before implementing organizational change, change agents must carefully plan each step because a change in one factor affects other factors. A critical agent task is to predict how a change in one area of the organization will affect other areas. The most common consequence of organisational change is employee resistance caused by the fear of the unknown. It is the responsibility of managers to prepare employees for change and inform them of the positive outcomes it will bring. The paper seeks to explore the various aspects of organizational change. Based on the analysis of the survey data, it can be concluded that organizations in the Republic of Croatia have given serious consideration to organisational change and that employees have a good understanding of what it involves.*

**Keywords:** *organizational dynamics, organizational changes, change management, drivers of change, types of changes, resistance*

## **1. INTRODUCTION**

Due to growing pressures, organisational change has become increasingly important in today's highly dynamic business environment because it helps the organisation to better adapt to the changing circumstances and remain competitive. Change management has become an essential role and responsibility in a company. It is therefore vital for managers to acquire skills and qualifications that will enable them to successfully respond to the new threats and opportunities, initiate changes to take advantage of targeted opportunities, and understand the rapidly changing environment. The paper presents the basic principles of organisational change and highlights the importance of systematic change management, which is vital for achieving a sustainable competitive advantage. Given that people are a key factor in the process of organisational change, this paper focuses on determining their understanding of, and attitudes towards, organisational change.

## 2. ORGANISATIONAL CHANGE

Organisational change can be defined as a process of changing an existing organisation. It involves the adoption of new ideas or behaviours in an organisation (Sikavica, 2011, p. 670). It is aimed at increasing organisational efficiency, i.e. assisting in achieving business goals. Organisational change is essential if a company is to survive and prosper because if it does not adapt to the constantly changing environment, it is at risk of failing (Certo and Certo, 2008, p. 300).

### 2.1. Types of organisational changes

There are different classifications of organisational changes depending on the focus of change. According to Daft (1992, in Bahtijarević-Šiber et al., 2008, p. 224), there are four main types of change: technological, product/service-related, structural and systemic, and people-oriented. Organisational change can be classified based on different criteria. Klindžić (2011, in Cingula et al., 2016, p. 408) proposed a classification based on the following criteria: planning, focus of change, method of implementation, time horizon, scope of consequences, predictability, and organisational level.

### 2.2. Drivers of organisational change

Understanding the drivers of organisational change is vital for organisations to determine what to focus on. External drivers of change should be considered very carefully because the organisation has limited impact on them and needs to adapt various organisational structures to the current trends in the business environment (Belak and Ušljebka, p. 82). Some of the drivers of organisational changes are:

- Economic environment - economic conditions in the country or region where a particular organisation operates;
- Technological environment - it is reflected in the evolution of technology, and new forms of business operations;
- Socio-cultural environment - the culture, i.e. people's values, norms, beliefs, etc.;
- Political environment - different legal frameworks, bylaws, taxes, levies, ethics, and other factors to which the organisation must adapt (Buble, 2000, pp. 69-76);
- International environment - an environment that has an impact on an organisation when it accesses international market. (entrepreneurshipinbox.com).

## 3. ORGANISATIONAL CHANGE MANAGEMENT

Successful implementation of organisational change requires that it be adequately managed. For this reason, when planning organisational change, managers should take into consideration several factors that can impact the success of change:

- Change agent - anyone who has the skill and power to stimulate, facilitate and coordinate the change effort, i.e. an individual or a group that undertakes the task of initiating and managing change in an organisation (Lunenburg, 2010, p. 1).
- Individuals affected by change - employees who, together with the organisation, must adapt to a particular change (Cingula et al., 2016, p. 418).
- The focus and the type of change - these two factors can be considered in the same context because they both relate to the structure, which includes the policies and procedures; the technology, which includes different processes and equipment; and people, i.e. their attitudes, skills, etc. These factors are key to organisational effectiveness. To increase it, it is necessary to identify the focus of change (Certo and Certo, 2012, p. 323).
- Change evaluation is carried out even before introducing changes to assess their costs and benefits to the organisation, i.e. determine whether they are cost-effective (Sikavica, 2011, p. 692). It is also made after the change has been introduced to compare the intended with

the achieved outcomes and gain insights that can be useful in the future processes of organisational change (Cingula et al., 2016, p. 418).

### **3.1. Transition from the current to the future state**

According to Nadler (1988, in Sikavica, 2011, p. 677), change is the transition from a current state to an envisioned or desired future state. The term ‘current state’ refers to the functioning of an organisation before implementing change, and ‘the future state’ refers to the desired way of functioning of an organisation after the change has been introduced (Sikavica, 2011, p. 677). Between the current and the future state there is a transitional state, also known as the delta state. People react differently to the delta state - some may be happy about the change, while for some it may be a stressful and confusing experience. This is why it is necessary to turn it into a positive experience for all those affected by change (Potts and Lamarsh, 2005, p. 52). There are many steps that managers should take to help people with the transition. According to Nadler (1988, in Sikavica, 2011, p. 69), some of the indicators that the transition, i.e. change, was successful are:

- The organisation has transitioned from the current into the future desired state.
- The functioning of the organisation in the future state has met expectations.
- The transition from the current to the future state has not had any major negative impact on the organisation or individuals.

### **3.2. Change management models**

Change management is a very complex process. Different authors have identified different phases of organisational changes, and models for their successful implementation. One of the most popular is Kurt Lewin’s model involving three steps:

1. Unfreezing - a step characterised by destabilisation of equilibrium in order for old behaviour to be discarded and the new one successfully adopted (Alfirević et al., 2014, p. 66).
2. Transitioning or moving - a change process that transforms the organization from the status quo to a desired end state (Robbins and Judges, 2009, p. 651). This phase also involves processes during which conflicts and reconciliations occur between the change agent and the leader of resistance (Perkov and Radenković, 2008, p. 16).
3. Refreezing - refers to the stabilizing of the group in a new equilibrium in order to adapt their behaviour to the new environment; this often requires changes in culture, norms, policies, and practices (Alfirević et al., 2014, p. 66).

Another well-known model of change, developed by Kotter, involves eight steps which correspond to Lewin’s 3-step process. The first four steps in Kotter’s model correspond to the unfreezing stage; steps 5-7 correspond to the movement stage, and the last step relates to the refreezing stage (Robbins and Judge, 2009, p. 653). Another model that is used for identifying and linking factors crucial to successful change is the Burke-Litwin 12-dimension model. This model argues that all of the factors are integrated, and ranks them in terms of their importance. The model is expressed diagrammatically, with the most important factors featuring at the top while lower layers become gradually less important. The Burke-Litwin model begins with the external environment that creates the need for change. The model is then divided into two types of factors: transformation and transaction factors. Transaction factors are easier to change and have less influence on organisational performance than transformation factors, which are key to organisational performance. The model results in the change affecting organisational performance, i.e. its effectiveness, as well as the external environment. Thus, a change in input will result in a change in output, and affect other factors in the model as well (Mind Tools Club).



### 3.3. Consequences of organisational change

When implementing change in an organisation, the goal of the organisation is to enhance its efficiency. However, in addition to the desired outcomes, introducing change may also lead to employee resistance and stress. Resistance to change involves the behaviour of employees with intention to delay or stop a certain organisational change (Hughes, 2006, in Masunda, 2015, p. 23). Resistance is a normal reaction of people because most are afraid of change and new unknown situations that the change will bring (Sikavica, 2011, p. 708). Employees express resistance in different ways, so there are different types of resistance: overt, implicit, immediate or deferred. Overt and immediate resistance is characterised by open resistance from employees to the change as soon as it is mentioned; i.e. the employees openly voice their negative attitudes towards the change. Implicit and deferred resistance efforts are more subtle and include low motivation, increased absenteeism, increased mistakes, etc. (Robbins and Judges, 2009, p. 647). In addition to employee resistance, another inevitable consequence of any organisational change is stress. The level of stress depends on the type of change that is being made and the consequences it has on employees, which means that its levels vary. Managers need to be able to recognise stress and manage it because it can adversely affect the positive impacts of change (Sikavica, 2011, p. 714). In an organisational context, stress can be defined as a series of harmful physical, emotional, and behavioural reactions of an individual to situations where the requirements of the job do not match his/her abilities, capabilities and needs (Sauter and Murphy, 1999, in Poredoš and Kovač, 2005, p. 3). Although the definition mentions harmful reactions, they do not necessarily have to be harmful because imbalance or change can also lead to new insights and experiences, and thus facilitate individual growth and development (Miljković Krečar and Kolega, 2013, p. 232). If the stress level is optimal, it can have a positive effect on employee performance, i.e. increase motivation and energy, sharpen observation, and help one maintain self-control. When managers become aware that stress has impacted performance, they need to identify the stressors and determine the level of stress, and finally help their employees control and overcome stress (Sikavica, 2011, pp. 715-716).

## 4. RESEARCH

### 4.1. Research objectives and methods

The paper aims to:

- examine the understanding of organisational change;
- determine whether organisations implement changes;
- determine exposure to stress in the workplace, identify the stressors and determine whether they can be managed;
- determine the importance of different methods for reducing employee resistance;
- determine which factors are essential for the change to be successful.

Primary data were collected through an online survey created using Google Forms. The survey was anonymous and the data collected were used exclusively for the purpose of this research. The survey was open from 10 September 2018 to 24 October 2018. While the original target was to survey a minimum of 100 individuals, 296 participated in the survey. The questionnaire comprised 19 questions. All respondents were required to answer the first 15 questions. Depending on their answer to question 5 regarding their employment status, the respondents who were employed were asked to answer four additional questions regarding the organisation they worked in. Fourteen questions were closed-ended, two were multiple choice questions, and three were Likert scale questions, where the respondent was asked to rate the importance of an item on a 5-point scale. The questionnaire was divided into three sections: the first section comprised five demographic questions. Question 5 (How many employees does your organisation have?) divided the respondents into two groups, the employed and the

unemployed. The following 10 questions (second section of the questionnaire) were mandatory and inquired about the respondents' viewpoints and understanding of organisational change. The respondents whose answer to question 5 was that they were not employed, could submit their questionnaires, while those who were employed (including secondary school and university students employed through adequate services) selected the number of employees and responded to four more questions related to their organisations.

## 4.2. Hypotheses

The following hypotheses are proposed:

- H1: Due to the large number of university-educated respondents, the majority have a good understanding of the concept of organisational change.
- H2: Managers have a major impact on the level of workplace stress.
- H3: Most organisations inform their employees that a change will be implemented.

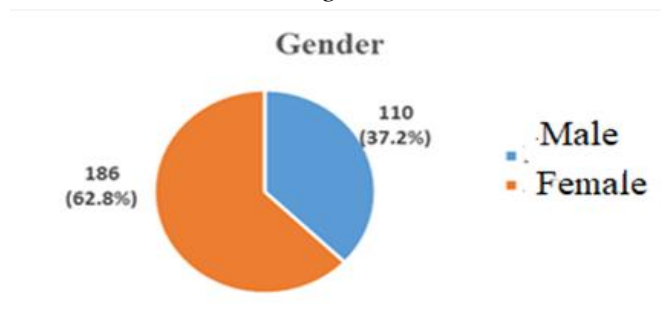
## 4.3. Research results

### 4.3.1. First section of the survey questionnaire - demographic profile of respondents

The first part of the survey comprises a total of five questions aimed at obtaining basic demographic data on the respondents. The total number of answers to each of the questions is 296, which matches the total number of respondents who took the survey.

Question 1: What is your gender?

Figure 1: Gender

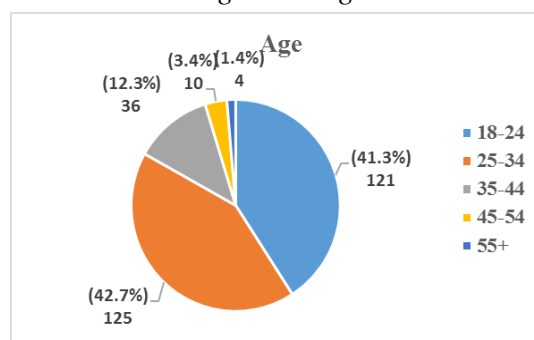


Source: Created by the authors based on the survey data

Of the total number of respondents, 186 (62.8%) were female and 110 (37.2%) male, as shown in Figure 1.

Question 2: What is your age?

Figure 2: Age

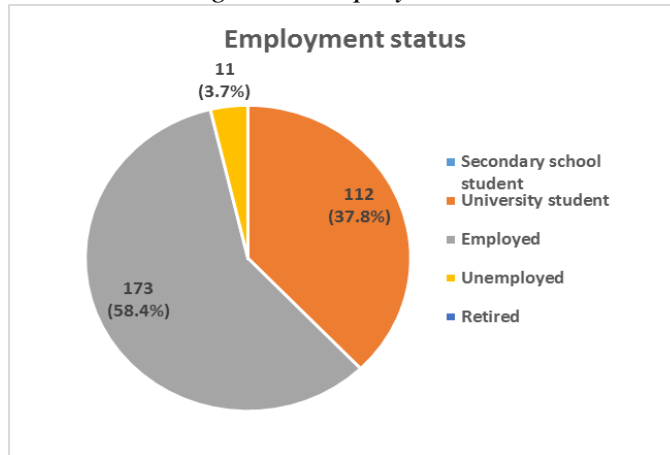


Source: Created by the authors based on the survey data

The respondents were divided into five age groups. As can be seen in Figure 2, the majority (125 or 42.2%) were aged 25-34; 121 or 40.9% were aged 18-24; 36 or 12.2% were 35-44 year old; 10 or 3.4% were aged 45-55; and 4 or 1.3% were 55 or over.

Question 3: What is your employment status?

Figure 3: Employment status

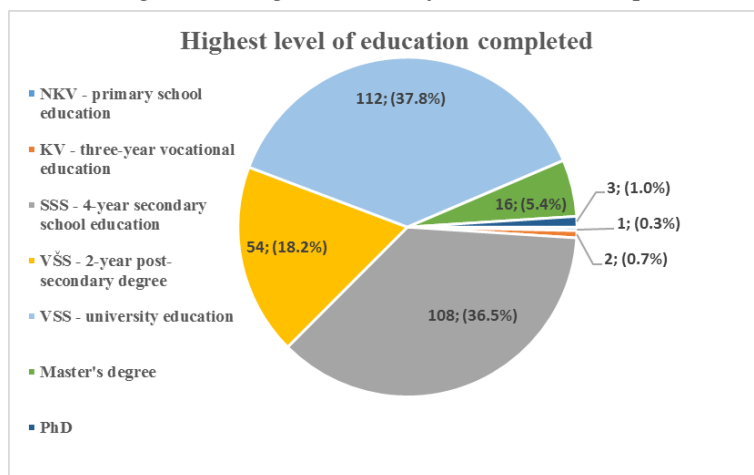


Source: Created by the authors based on the survey data

The majority of respondents indicated that they were employed (173 or 58.5%). 112 or 37.8% were university students. The percentage of students is high mainly because the survey link was shared in many student groups on Facebook. 11 or 3.7% responded that they were unemployed. As can be seen from Figure 3, there were no high school students and pensioners among the respondents.

Question 4: What is the highest level of education you have completed?

Figure 4: Highest level of education completed



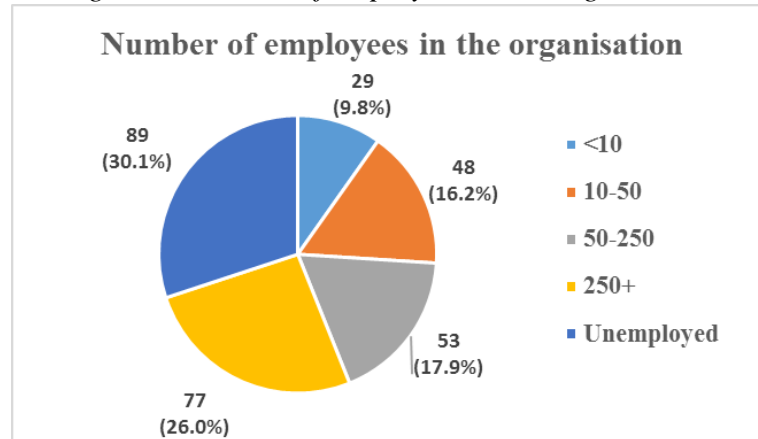
Source: Created by the authors based on the survey data

Figure 4 shows the distribution of respondents by level of education. Most respondents (112 or 37.8%) have university education (VSS). A slightly smaller number (108 or 36.5%) have secondary school education (SSS). 54 or 18.2% have a 2-year post-secondary degree (VŠS), while 16 (5.4%) have a Master's degree. Three individuals (1%) hold a PhD, two (0.7%) have primary school education (NKV), while one (0.7%) has 3-year vocational education (KV).

Thus, the first part of the hypothesis proposing that a large number of respondents have university education has been confirmed.

Question 5: How many employees does your organisation have?

*Figure 5: Number of employees in the organisation*



*Source: Created by the authors based on the survey data*

Depending on their answer to this question, the respondents were divided into two groups, the employed and the unemployed. The latter were not required to answer the remaining questions regarding their experience. Most respondents (89 or 30.1%) answered that they were unemployed, although it can be seen from Figure 5 that the number of unemployed persons is lower than the number of employed persons. Of the total number of respondents employed at the time, the majority (77 or 26%) worked in an organisation with more than 250 employees; followed by 53 respondents (17.9%) working in an organisation with 50-250 employees; 48 (16.2%) working in an organisation with 10-50 employees; and 29 (9.8%) that worked in an organisation with fewer than 10 employees.

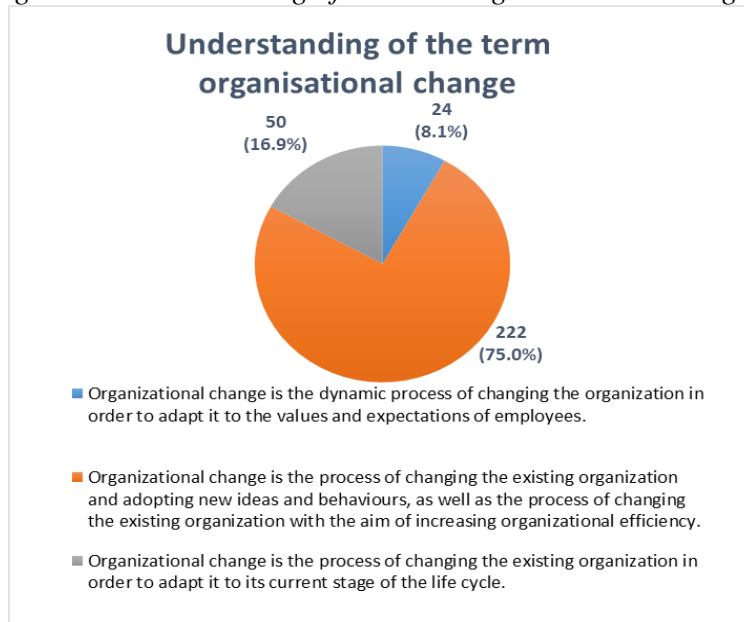
#### *4.3.2. Second section of the survey questionnaire - questions related to organisational change*

The second part of the survey questionnaire comprised a total of 10 questions pertaining to the respondents' viewpoints and understanding of organisational change. The number of respondents who answered these questions is 296, the same as for the first part of the survey.

Question 6: Which of the following three definitions do you consider to be the most accurate description of organisational change?

*Figure following on the next page*

Figure 6: Understanding of the term organisational change



Source: Created by the authors based on the survey data

This question was asked to determine whether the respondents have a good understanding of the term organisational change. The three definitions from which they had to select were similar. However, the most accurate is the one that most respondents chose (222 or 75%). 50 respondents (16.9%) selected the definition that describes only one aspect of organisational change. 24 (8.1%) respondents selected the definition that is, to some extent, misleading, as it implies that the organisation must adapt to each employee, which is impossible. The results shown in Figure 6 indicate that a large number of respondents have a good understanding of the concept of organisational change and its implications for an organisation. This confirms the second part and hence the entire hypothesis 1 which suggests that due to the large number of university-educated respondents, the majority have a good understanding of the concept of organisational change.

Question 7: In your opinion, what are the drivers of organisational change?

Figure 7: Drivers of organisational change

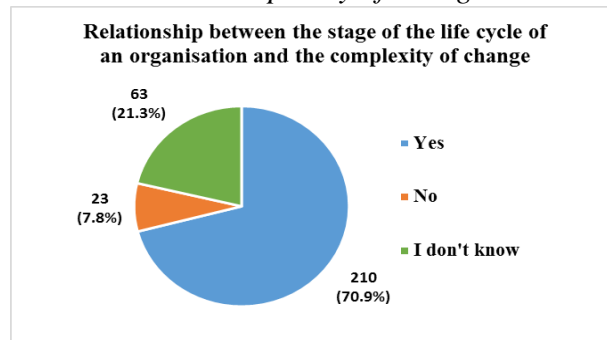


Source: Created by the authors based on the survey data

The majority of respondents (235 or 79.4%) find that the development of new technologies is the main driver of organisational change. This was expected as everyone is aware of the rapid technological evolution and the need for organisations to adapt to the changing environment in order to remain competitive. 222 respondents (75%) consider market dynamics to be the main driver of organisational change, while 174 (58.8%) believe that change is driven mainly by social and economic trends. 148 respondents (50%) selected ‘change in strategy’ as their answer, 125 (42.2%) selected ‘the process of organisational growth’, 107 (36.1%) selected ‘change in people’, 104 (35.1%) selected ‘economic turbulence, while 91 (30.7%) selected ‘global politics’. Finally, 83 (28%) selected the answer ‘life cycle of the organisation’, while only one (0.3%) respondent thought that it was none of the above, as shown in Figure 7.

Question 8: In your opinion, is there a relationship between the stage of the life cycle of an organisation and the complexity of change?

Figure 8: Relationship between the stage of the life cycle of an organisation and the complexity of change

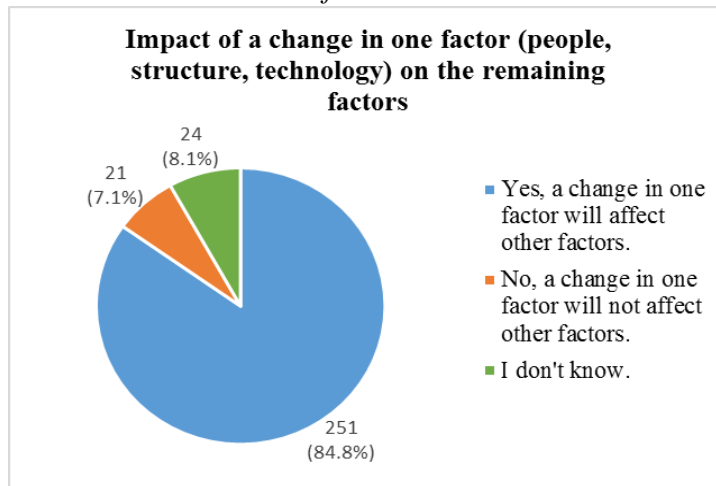


Source: Created by the authors based on the survey data

The results shown in Figure 8 indicate that the majority of respondents (210 or 70.9%) answered positively to this question, while 63 (21.3%) selected the answer ‘I don’t know’. The rest (23 or 7.8%) responded negatively.

Question 9: In your opinion, will a change in one factor (people, structure, technology) of the organisation affect the remaining two factors?

Figure 9: Impact of a change in one factor (people, structure, technology) on the remaining factors

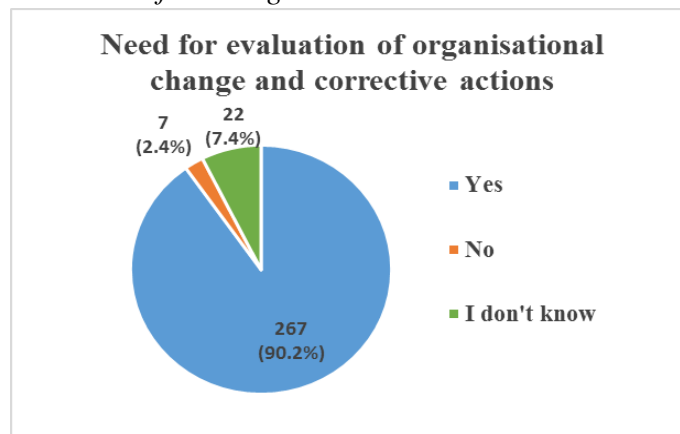


Source: Created by the authors based on the survey data

When asked whether a change in one factor (people, structure, technology) would affect the remaining factors, most respondents (251 or 84.8%) answered positively, while only 21 (7.1%) responded negatively. 24 respondents (8.1%) said they did not know. The results are shown in Figure 9.

Question 10: In your opinion, should the implemented change be evaluated and corrective actions taken?

Figure 10: Need for change evaluation and corrective actions



Source: Created by the authors based on the survey data

Figure 10 provides an insight into the respondents' opinions about the need for change evaluation and corrective actions. It can be seen that most respondents (267 or 90.2%) find that the change should be evaluated, and, if needed, corrective actions taken. 22 respondents (7.4%) are not sure, while only 7 of them (2.4%) consider that change evaluation and corrective actions are not necessary.

Question 11: In your opinion, what are the most common consequences of organisational changes?

Figure 11: Consequences of organisational changes



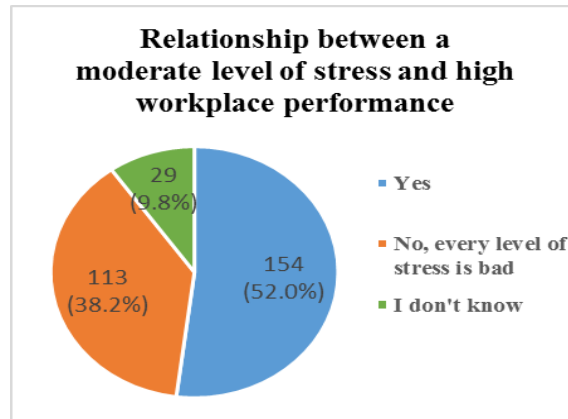
Source: Created by the authors based on the survey data

This question is complex because before introducing change, it is not always clear what its unintended consequences may be. The majority of respondents (197 or 66.6%) find that the increase in organisational competitiveness is the most common consequence of organisational change as it is the main goal of change. A slightly smaller number of respondents (147 or 49.7%) believe that the most common consequence is resistance.

An almost equal number of respondents think that it is stress (116, i.e. 39.2%) and conflicts (111, or 37.5%), while the smallest number of respondents (43 or 14.5%) selected 'organisational failure'. Only 16 respondents (5.4%) were unable to decide, as shown in Figure 11.

Question 12: In your opinion, can moderate levels of stress increase employee performance?

Figure 12: Relationship between moderate stress levels and high workplace performance

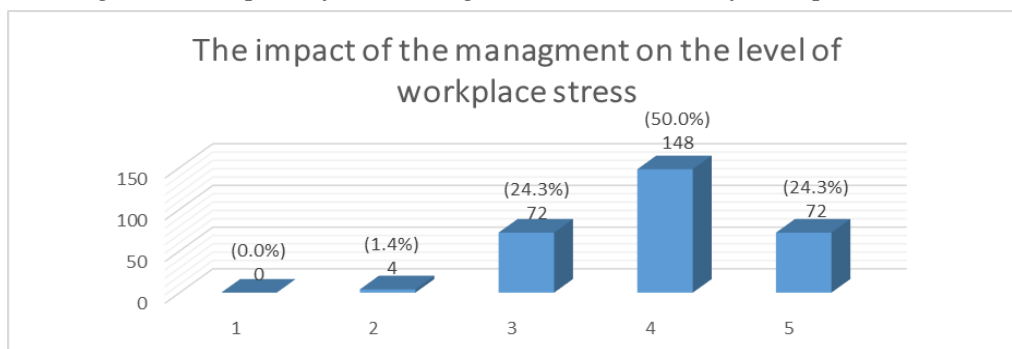


Source: Created by the authors based on the survey data

Figure 12 shows the respondents' opinions about the relationship between stress and workplace performance. Although one would assume that most respondents would find any level of stress to have a negative effect on job performance, 154 respondents (52%) believe that at moderate levels, stress can facilitate performance. 113 respondents (38.2%) believe that, regardless of its level, stress has a negative impact on performance, while only 29 (9.8%) do not know.

Question 13: Rate the impact of the management on the level of workplace stress

Figure 13: Impact of the management on the level of workplace stress



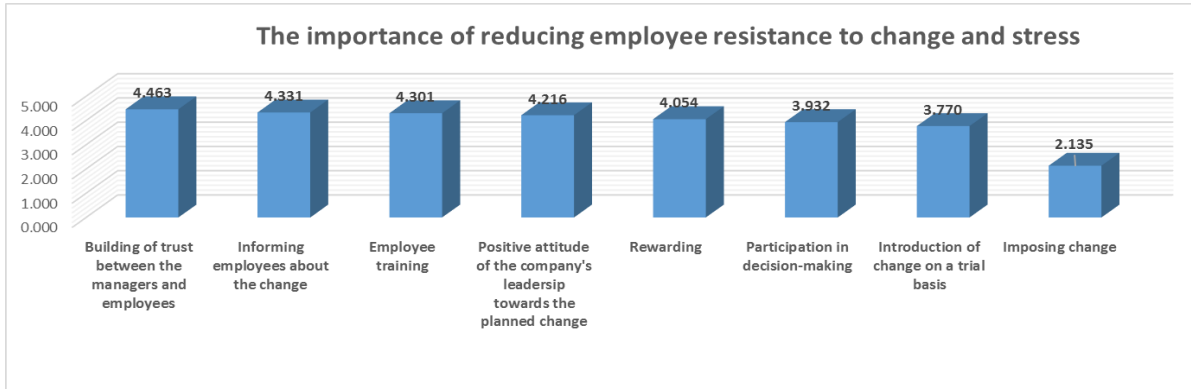
Source: Created by the authors based on the survey data

The next question relating to hypothesis 2 inquired into the respondents' opinions about the relationship between the management and workplace stress. The data indicate that most respondents (148 or 50%) find that the management has a high impact on the level of workplace stress. There is an equal number of respondents who find that the management has a very high impact on the level of stress, and those who believe that this impact is moderate (72 or 24.3%). Only four respondents (1.4%) described the impact as low, while one described it as very low. The data shown in Figure 13 confirm hypothesis 2 proposing that managers have a major impact on the level of workplace stress.



Question 14: Assess the importance of the listed factors in reducing resistance to organisational change and workplace stress.

Figure 14: The importance of various factors in reducing employee resistance to organisational change and workplace stress

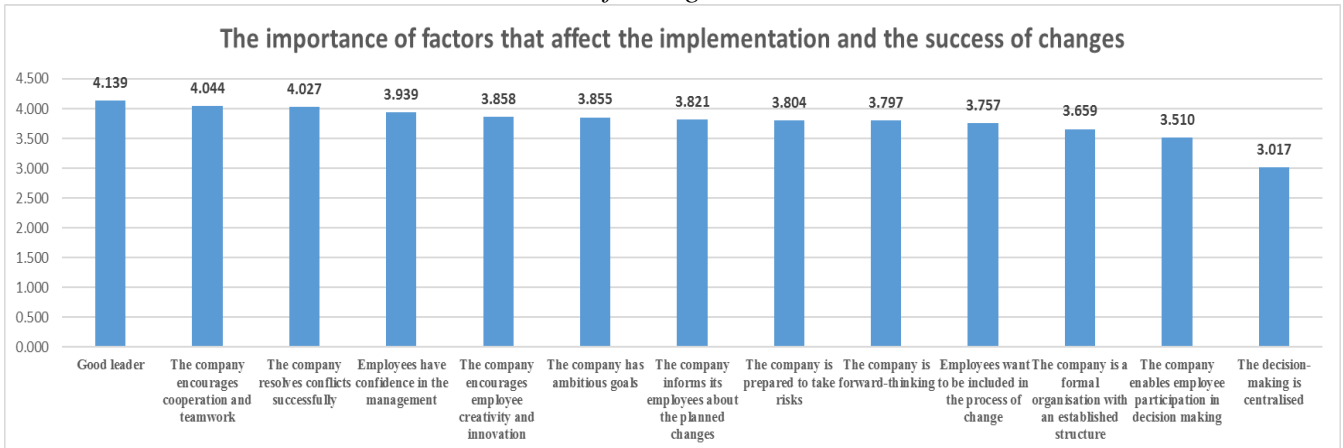


Source: Created by the authors based on the survey data

The respondents were asked to evaluate, on a scale of 1-5, the importance of eight different factors in reducing employee resistance and workplace stress. For the purpose of the analysis, the average ratings for individual factors were calculated and presented in Figure 14. ‘Employee training’ received the highest rating (4.363), followed by ‘positive attitude of the leadership towards the planned change’ (4.216), and ‘rewarding’ (4.054). Lower ratings were given to the importance of the remaining factors, i.e. ‘participation in decision-making’ (3.932), ‘introduction of change on a trial basis’ (3.770) and ‘imposing change’ (2.135). The results are as expected, i.e. the respondents attach the greatest importance to building trust between the managers and employees which will facilitate effective communication and reduce resistance to change. Informing employees of the change makes them feel important to the organisation. Moreover, a positive attitude of the managers towards the change will help employees realise that change can be beneficial for them as well.

Question 15: In your opinion, to what extent do the listed factors affect the implementation and the success of changes?

Figure 15: The importance of various factors that affect the implementation and the success of changes



Source: Created by the authors based on the survey data

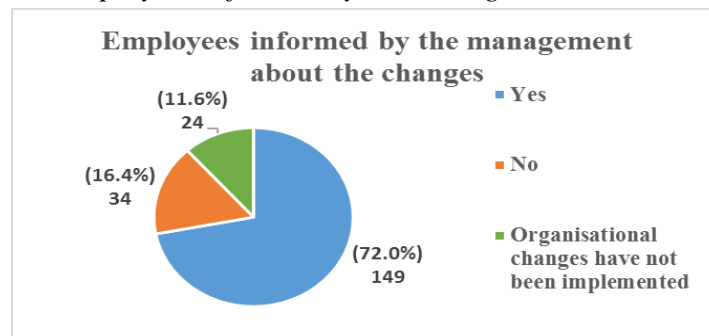
As in the previous question, the respondents were asked to rate the importance of several factors affecting the process of implementing change. Figure 15 shows the average ratings of individual factors. The top-rated factors include having ‘a good leader’ (4.139), ‘encouragement of cooperation and teamwork by the company’ (4.044), and ‘successful resolution of conflicts’ (4.027). Other factors were rated as less important. ‘Centralised decision-making’ received the lowest average rating (3.017), which was to be expected because, if the company’s decision-making process is centralised, employees cannot participate in the process of change. Based on the above data it can be concluded that the respondents find it highly important to have a good leader that will shepherd them through the process of change, encourage cooperation, and successfully resolve conflicts that may arise. The importance of other factors should not be neglected because each organisation is different, so all of these factors should be taken into consideration in order to make organisational change successful.

#### 4.3.3. Third section of the survey questionnaire - questions relating to the respondents’ organisations

The third part of the questionnaire comprised four questions relating to the implementation of change in the respondents’ organisations. 207 respondents answered these questions because 89 of them were not employed at the time.

Question 16: Has your organisation implemented any changes and, if so, were you informed about them?

Figure 16: Employees informed by the management about the changes



Source: Created by the authors based on the survey data

This question was aimed at determining whether managers informed their employees about the changes planned. Figure 16 shows the results of data analysis. As many as 149 respondents (72%) were informed that changes would be implemented, while only 34 (16.4%) were not. 24 respondents (11.6%) reported that their organisations had not implemented any changes. This question was used to test hypothesis 3 proposing that most organisations inform their employees that a change will be implemented. The results have confirmed its validity.

Question 17: Have you experienced any of the listed workplace stressors?

Table following on the next page

*Table 1: Workplace stressors*

	No. of respondents		Percentage	
	Yes	No	Yes	No
Lack of control over work activities	136	71	65.7%	34.3%
Poor working conditions	86	121	41.5%	58.5%
Too much responsibility	136	71	65.7%	34.3%
Role ambiguity	122	85	58.9%	41.1%
Poor interpersonal relations	136	71	65.7%	34.3%
Job dissatisfaction	137	70	66.2%	33.8%
Job uncertainty	73	134	35.3%	64.7%
Mobbing	49	158	23.7%	76.3%

*Source: Created by the authors based on the survey data*

Table 1 and Figure 17 show the various workplace stressors. While people cope with stress differently, the fact that it is present in an organisation is the reason why this issue was investigated in the survey. The results show that the majority of respondents (137 or 66.2%) feel dissatisfied with their jobs. A large number indicated that they experienced stress as a result of the lack of control, too much responsibility, and poor interpersonal relations (136 or 65.7% for each stressor). 86 respondents (41.5%) reported poor working conditions to be the cause of their stress; for 73 (35.3%) it was job uncertainty, while 49 (23.7%) reported they had experienced workplace mobbing.

*Figure 17: Workplace stressors*

*Source: Created by the authors based on the survey data*

Question 18: Have you experienced any of the listed consequences of workplace stress?

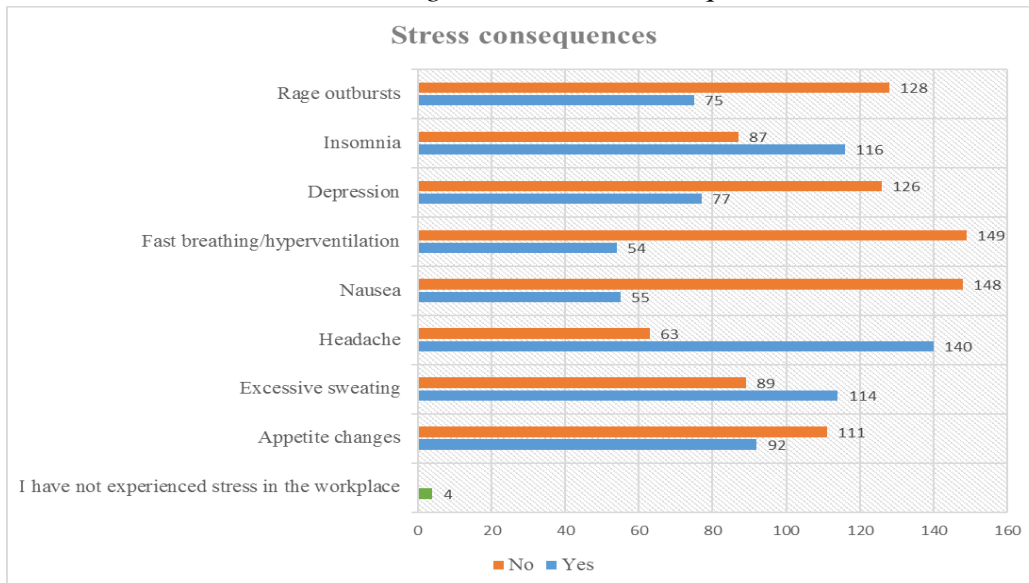
*Table 2: Consequences of stress*

	Number		Percentage	
	Yes	No	Yes	No
Rage outbursts	75	128	36.9%	63.1%
Insomnia	116	87	57.1%	42.9%
Depression	77	126	37.9%	62.1%
Fast breathing /hyperventilation	54	149	26.6%	73.4%
Nausea	55	148	27.1%	72.9%
Headache	140	63	69.0%	31.0%
Excessive sweating	114	89	56.2%	43.8%
Appetite changes	92	111	45.3%	54.7%

*Source: Created by the authors based on the survey data*

In addition to analysing workplace stressors, the paper looks at the consequences that employees may have experienced as a result of stress. Stress affects people differently, as can be seen from Table 2 and Figure 18. The majority of respondents (140 or 69%) indicated that their stress manifested as a headache; 116 respondents (57.1%) suffered from insomnia, while 114 (56.2%) experienced excessive sweating. Other consequences of stress were experienced by a smaller number of respondents. Four respondents reported not having experienced stress at work. This item was analysed mainly because the consequences of stress in the workplace are likely to lead to low performance and should therefore be properly addressed by the management.

Figure 18: Stress consequences



Source: Created by the authors based on the survey data

Question 19: Which of these steps does your organisation's management take to reduce employee resistance to change and stress?

Table 3: Steps taken by the management to reduce employee resistance to change and stress

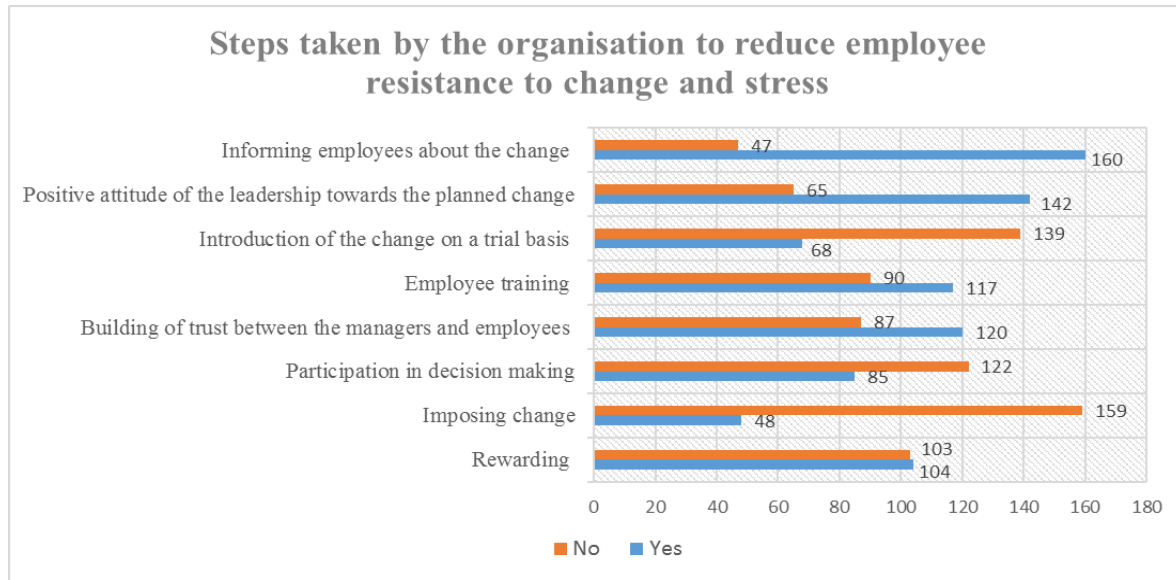
	Number		Percentage	
	Yes	No	Yes	No
Informing employees about the change	160	47	77.3%	22.7%
Positive attitude of the leadership towards the planned change	142	65	68.6%	31.4%
Introduction of the change on a trial basis	68	139	32.9%	67.1%
Employee training	117	90	56.5%	43.5%
Building of trust between the managers and employees	120	87	58.0%	42.0%
Participation in decision making	85	122	41.1%	58.9%
Imposing change	48	159	23.2%	76.8%
Rewarding	104	103	50.2%	49.8%

Source: Created by the authors based on the survey data

The paper also investigates which actions have been taken by the management to reduce employee resistance to change and stress. The results of the data analysis are shown in Table 3 and Figure 19. The majority of respondents (160 or 77.3%) indicated that their organisation informed the employees about the changes pursued, which further proves the validity of hypothesis 3. The second largest group includes respondents who indicated that their management had a positive attitude towards the planned change (142 or 68.6%).

Next, in terms of the number of employees who chose these items, is ‘building trust between the managers and employees’ (120 or 58%), followed by ‘employee training’ (117 or 56.5%), and ‘rewarding’ (104 or 50.2%). It is apparent that only a small number of organisations allow employees to take part in decision making (85 or 41.1%), and introduce change on a trial basis (68 or 32.9%). 48 respondents (23.2%) indicated that change was imposed on them.

*Figure 19: Steps taken by the organisation to reduce employee resistance to change and stress*



*Source: Created by the authors based on the survey data*

## 5. CONCLUSION

A survey was carried out to explore the respondents' viewpoints and understanding of organisational change and its implementation. Based on the results of the survey, it can be concluded that the majority of respondents (75%) have a good understanding of the term organisational change. Most find that new technologies are the main source of organisational change because organisations must adapt to the rapid technological development in order to remain competitive. The majority of respondents believe that as the organisation grows, more complex changes are needed. It follows that larger organisations or more mature organisations require more complex changes. It can also be deduced from the survey results that a change in one segment of the organisation will cause a change in another segment, as confirmed by 84.8% of the respondents. It is of note that more than 90% of the respondents believe that changes introduced should be evaluated and, if needed, corrective actions taken. The ultimate goal of most organisations is increased competitiveness, which can be achieved through organisational changes. As a result, most respondents find enhanced competitiveness to be the most common consequence of change. The consequences of change are visible only after its implementation. 14.5% of the respondents believe that changes can lead to organisational failure. The survey also inquired into the most common consequences of organisational change, i.e. employee resistance and stress. Although stress is commonly regarded as a negative circumstance in daily living, most respondents believe that moderate levels of stress can have a positive effect on employee performance, and that management has a considerable impact on the level of stress in the workplace. Management must also consider and address individual stressors and their effects on work performance. Employees attach the highest importance to trust building between them and the management, having a good leader who will shepherd them through the change, encourage co-operation, and resolve conflicts successfully, which will in turn facilitate

communication and reduce the level of stress and resistance to change, among other things. The majority of respondents confirmed that they were informed about the planned changes and that trust-building efforts were made by the management. It can be concluded that organisations are concerned about the wellbeing of their employees. 66.2% of the respondents feel dissatisfied with their job which suggests that most of them are unhappy with their present circumstances and are seeking better opportunities. The aims of the research have been achieved and all three hypotheses have been confirmed:

- H1: Due to the large number of university-educated respondents, the majority have a good understanding of the concept of organisational change.
- H2: Managers have a major impact on the level of workplace stress.
- H3: Most organisations inform their employees that a change will be implemented.

## LITERATURE:

1. Alfirević N., Garbin Praničević D., Talaja A., (2014.), Upravljanje organizacijskim promjenama i znanjem, Split: Sveučilište u Splitu
2. Bahtijarević-Šiber F., Sikavica P., Pološki Vokić N. (2008.), Suvremeni menadžment : vještine, sustavi i izazovi, Zagreb: Školska knjiga
3. Belak S., Ušljebrka I. (2014.), Organizacijska kultura kao čimbenik uspješne provedbe organizacijske promjene, *Oeconomica Jadertina*, 4(2), str. 80-98. Available at: <https://hrcak.srce.hr/136748>
4. Buble M., (2000.), Management, Split: Sveučilište u Splitu
5. Certo S. C., Certo S. T., (2008.), Moderni menadžment, 10. izdanje, Zagreb: MATE
6. Certo S. C., Certo S. T., (2012.), Modern Management: Concepts and Skills, 12th Edition, Pearson
7. Cingula M., et al. (2016.), Organizacija, Zagreb: Sinergija
8. Entrepreneurshipinabox.com, Sources of Organizational Change <https://www.entrepreneurshipinabox.com/9/organizational-change-source/>
9. Lunenburg F. C., (2010.), Managing Change: The Role of the Change Agent, *International journal of management, business, and administration*, 13(1). Available at: [https://naaee.org/sites/default/files/lunenburg\\_fred\\_c.\\_managing\\_change\\_the\\_role\\_of\\_change\\_agent\\_ijmba\\_v13\\_n1\\_2010.pdf](https://naaee.org/sites/default/files/lunenburg_fred_c._managing_change_the_role_of_change_agent_ijmba_v13_n1_2010.pdf)
10. Masunda T., (2015.), An evaluation of resistance to organizational change and its effects on employee productivity: the case of Telecom Namibia, The university of Namibia
11. Miljković Krečar I., Kolega M., (2013.), Psihologija u poslovnom okruženju, Zagreb: Grupa VERN d.o.o.
12. Mind Tools Club, The Burke-Litwin Change Model: Unraveling the Dynamics of Organizational Change. Available at: [https://edisciplinas.usp.br/pluginfile.php/1770103/mod\\_resource/content/3/texto%2022%20-%20The%20Burke-Litwin%20Change%20Model%20-%20Unraveling%20the%20Dynamics%20of%20Organizational%20Change](https://edisciplinas.usp.br/pluginfile.php/1770103/mod_resource/content/3/texto%2022%20-%20The%20Burke-Litwin%20Change%20Model%20-%20Unraveling%20the%20Dynamics%20of%20Organizational%20Change).
13. Perkov D., Radenković A. S., (2008.), Upravljanje promjenama uz održivi rast hrvatskih poduzeća, Zbornik visoke poslovne škole Libertas Zagreb, str. 30-48. Available at: [http://www.perkov-savjetovanje.hr/str\\_radovi/up\\_or.pdf](http://www.perkov-savjetovanje.hr/str_radovi/up_or.pdf)
14. Poredoš D., Kovač M., (2005.), Stres i psihološko zlostavljanje na radnom mjestu, *Ljetopis socijalnog rada*, 12(2), str. 333-346. Available at: <https://hrcak.srce.hr/2020>
15. Potts R., Lamarsh J., (2005.), Upravljanje promjenom do uspjeha, Zagreb: Školska knjiga
16. Robbins S. P., Judge T. A., (2009.), Organizacijsko ponašanje, 12. izdanje, Zagreb: MATE
17. Sikavica P., (2011.), *Organizacija*, Zagreb: Školska knjiga

## THE OWNERSHIP STRUCTURE OF CROATIAN COMPANIES

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### ABSTRACT

*The issue of corporate governance in transitional economies has become important topic and usually it is connected with the ownership structure, ownership concentration and principle-agent problem. The role and importance of different types of owner and their concentration have changed throughout period of 25 years of privatization in Croatia. The changes in the ownership structure directly reflected on the changes in corporate governance processes. The paper examine the ownership structure of publicly traded companies and the role and influence of specific type of investors (owners) on monitoring power and better corporate governance practice of companies. The main objective of this study is to identify and provide detail analysis of ownership structure and ownership concentration in Croatian companies, and for that reason, we observed 154 companies that were continuously listed at the Zagreb Stock Exchange in the period from 2007 and 2016. Further, the authors discuss the relationships between ownership structure, ownership concentration and a number of consequences for the company's performance.*

**Keywords:** *Corporate Governance, Ownership Concentration, Listed Companies, Performance Indicator*

### 1. INTRODUCTION

The goal of the paper is to identify and provide detail analysis of ownership structure and ownership concentration in Croatian Companies in the period from 2007 and 2016 and examine the effects of different type of owners on the quality of corporate governance measured by number of consequences for the company's performance. Several previous studies examined the relationship between corporate governance, ownership structure and firm performance. Those studies generated different results, which are usually affected by the different phase of market development, economic development, type of sectors, business environment, corporate governance model and other variable. Usually they are not all consider for the same research at the same time. It means that each country or economic sector might have different types of sustainable ownership structure (Elvin, Hamid, 2016). Division of ownership and management in companies usually are connected with the principle-agent problem. The essence of the problem is in ownership structure or, in fact, how different type of owners ensured that the hired professional managers run the company. The corporate governance issue in transition economies has become important in the last few decades and it is connected with the differences in economy's investment and its growth rates during the period of state-owned ownership (Zheka, 2003). The paper is organized as follows: Section 2 contains the extensive literature review on corporate governance, ownership structure and company performance. Section 3 focused on data and methodology. In section 4 are described the characteristics of the sample, empirical result and analysis. Finally, concluding remarks are described in Section 5.

## 2. PREVIOUS EMPIRICAL EVIDENCE

In the last two decades a significant number of empirical and analytical research were done examining relationship of ownership structure, ownership concentration and quality of corporate governance (measured by different indicators), but often yielding conflicting results. Because of its complex issue, it is difficult to measure corporate governance system (Tipuric, 2015). Croatian corporate governance model is based on the German corporate governance model (continental corporate governance model), which differs the Company Assembly and two dominant company bodies, namely the Managing Board and the Supervisory Board (Klačmer Čalopa, Cingula, 2009). This model of corporate governance is characterized by ownership that is more concentrated with large controlling shareholders. Some of previous empirical results from already developed capital market show that share liquidity decrease with a lower ownership dispersion (Jacoby, Zheng, 2010). Yosra and Sioud (2011) also found that stock liquidity decreases significantly with concentrated ownership. The results in their research paper indicate that pyramidal structures of the Tunisian firms have a significant negative impact on liquidity. Aluchna and Kuszewski (2018) define a pyramidal structure as “a specific ownership pattern adopted worldwide, which increases the power of controlling shareholder”. In their research on the sample of 168 non-financial Polish listed companies for the period of 2010–2014, they indicate that pyramids are an important ownership and control arrangement. They described a pyramidal structure as a tool for expansion of the business group but also they found out that governance by financial entities in a pyramid discourages investment by portfolio-oriented financial investors. Pervan, Pervan and Todoric (2012) in their research observed Croatian listed companies for the period of seven years and the results indicate that foreign controlled companies, measured by ROA, perform better than domestically controlled companies. On the other hand, research made by Džanić (2012), using a sample of companies listed on the Zagreb Stock Exchange in period 2003-2009 shown that foreign ownership is not significantly better than domestic. Also, Pervan, Pervan and Todoric (2012) observing ownership structure conclude that majority of state owned companies perform worse (using ROA indicator) than privately one. In Croatia, there are many examples of state ownership domination among various industries and sectors, such as oil industry, electric company, airlines company and banking. Using data gathered in the 2008 – 2016 period, Bajo, Primorac and Zuber (2018) shown that the performance of companies with the state owned ownership is unpredictable. They found out that in many cases they operate at a significant loss and they are not profitable for the state. In their research paper, Al-Sharif, Bino and Tayeh (2015) investigated the relationship between company's ownership structure and its stock liquidity for firms listed on Amman Stock Exchange. They found, that the largest shareholder are a family or a private publicly traded corporation. Additionally, Abdallah and Ismailb (2017) found the positive relationship between governance quality and firm performance, which is stronger when the diversity of ownership structure is higher. Their results pointed heterogeneity in governance quality. In the article Škuflić, Turuk, Crnjac (2013) state that differences in performance of private and state-owned companies can be analysed with the principal - agent theory which takes into account the relationship of manager (agent) and owner (principal). The assumption of this theory, which usually results as a problem, is that managers will rather invest their efforts into maximizing their own benefits than the benefits of the company owners. In private owned companies, because of fears of takeovers, bankruptcy, and high turnover of managers the principal - agent problem is less visible (Škuflić, Turuk, Crnjac, 2013).

## 3. METHODOLOGY AND EMPIRICAL ANALYSIS

The research was conducted on Croatian companies whose shares have been listed on the Zagreb Stock Exchange continuously from January 2007 to December 2016. Sample include companies in all categories of economic activities according to National classification of



economic activities (NKD, 2007), excluding the companies in the Sections K: Financial and insurance activities. Thus, the analysis covers the following sectors: (1) Agriculture, forestry and fishing; (2) Manufacturing; (3) Construction; (4) Wholesale and retail trade; (5) Transportation and storage; (6) Accommodation and food service activities; (7) Information and communication; (8) Real estate activities; (9) Professional, scientific and technical activities; (10) Arts, entertainment and recreation. Furthermore, according to the business continuity criteria selected companies were analysed from the aspect of the liquidity of their shares. The liquidity is measured as the average monthly trading rank in the observed period from January 2007 to December 2016. Out of 154 companies that meet these criteria, 50 most liquid companies were taken into further analysis. Secondary data were collected from the Croatian Financial Services Supervisory Agency (cro. HANFA), the Central Depository & Clearing Company Inc. (cro. SKDD) and the Zagreb Stock Exchange. The data were coded according to the ISN symbol and the number of ordinary shares owned by investors (institutional investors, legal entities, private investors, banks) in a particular company was observed.

#### 4. EMPIRICAL RESULTS

The analysis of the ownership structure implies a detailed analysis of top 10 shareholders in each of the companies surveyed. This study narrows the ownership structures categories into 7 categories: *B* = banks; *G* = government; *PI* = private investors; *IF* = investment funds; *PF* = pension funds; *IC* = insurance companies; *LE* = legal entities. From the Figure 1, it could be notice that the ownership structure changed through the period and sectors. In general, analysing the type of ownership according to total amount of capital we can conclude that through the years the dominate ownership type were legal entities (corporation, cooperative, limited partnership, limited liability company). The recent trend actually reveals revival of the state-owned companies and pension funds, and on the other hand, we can notice decreasing the number of banks and private investors in an ownership structure of 50 most liquid companies. In the Croatian market, as in the markets of other (post)transition countries, foreign ownership prevails in the capital of insurance companies (Ćurak, Utrobičić, Kova, 2014). As institutional investors, insurance companies are among the most important participants in the in the capital market (Balaban, 2014). Figure 1 shows that insurance companies, as s important type of institutional investors, became one of the major capital holders since the size of their ownership in analysed companies continuously increases in different sectors. Therefore, they role to make stronger corporate governance and participation at the capital markets becoming more important.

*Figure following on the next page*

Figure 1: Total amount of capital by type of ownership per year [Based on SKDD annual reports for 2012, 2013, 2014, 2015 and 2016]

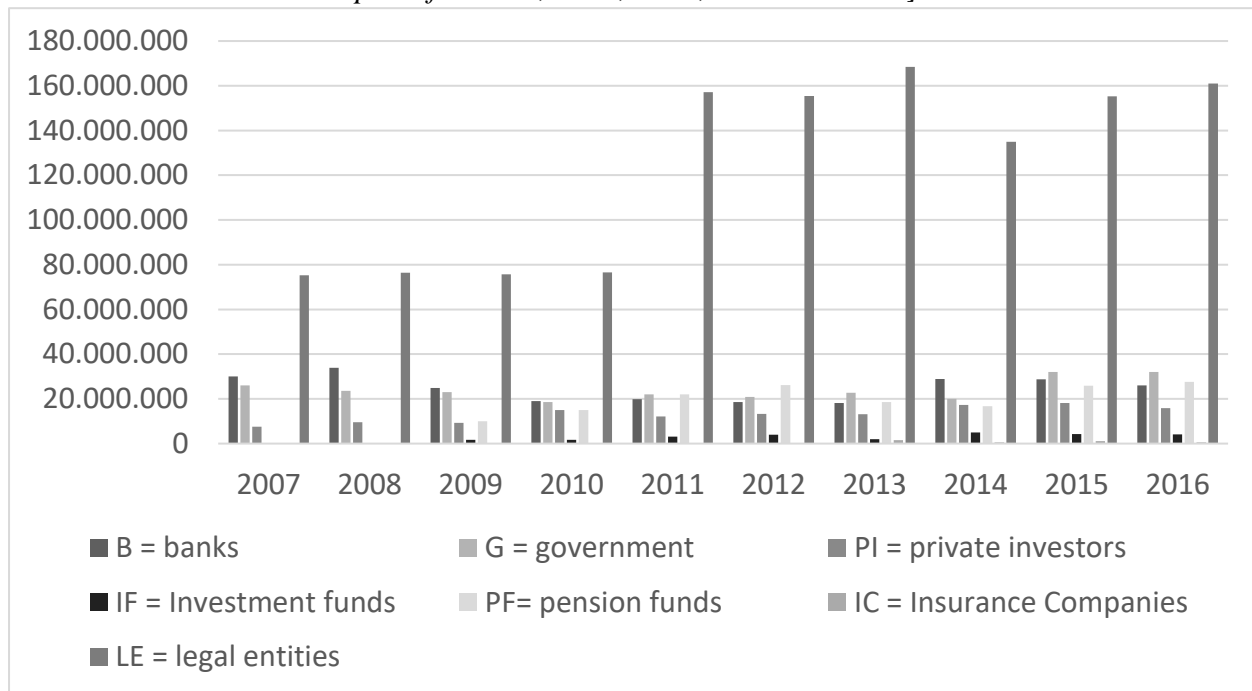
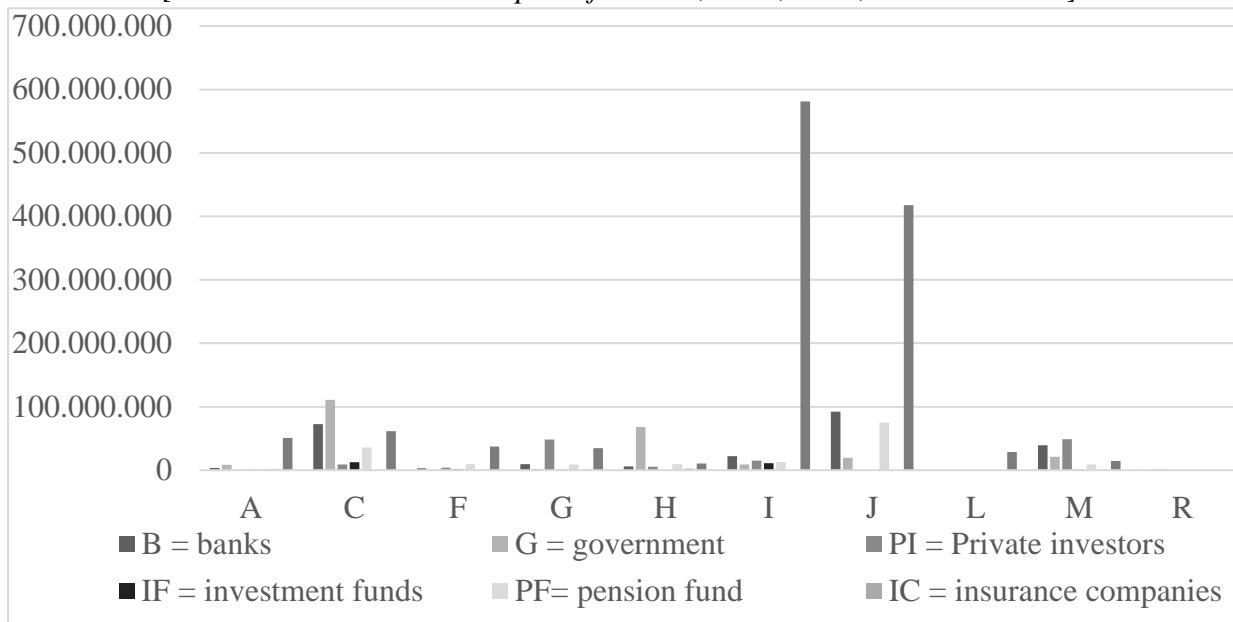


Figure 2 shows the domination of different owners depending on the observed categories of economic activities according to National classification of economic activities (NKD, 2007). The dominance of legal entities is visible in sector I = Accommodation and food service activities and J = Information and communication, while the dominance of an institutional investor pension fund is visible in the sector J = Information and communication. In view of the strengthening of the technological sector, it is not surprising that the pension funds dominance as one of the most important investors (owner) in this sector. Pension funds are one of the largest asset owners. They repurchase shares of good companies with a high performance indicator, as the companies from technological sectors. This investment policy is the result of legislative restriction, investment guidelines and expectation of a reasonable return on investment. In the G = Wholesale and retail trade and M = Professional, scientific and technical activities sector there is a dominance of private investors. The role of other institutional investors - investment funds is visible in two sectors: C= Manufacturing and I= Accommodation and food service activities. Because of the legislations, investment funds are focus on the companies that create new values and have a high shareholders equity. But still, in Croatia one of the largest and most popular institutional investors are still money market UCITS funds intended for relatively conservative investor (Klačmer Čalopa, Đunđek Kokotec, 2017).

Figure following on the next page

Figure 2: Total amount of capital for each type of ownership in particular sector per year  
 [Based on SKDD annual reports for 2012, 2013, 2014, 2015 and 2016]

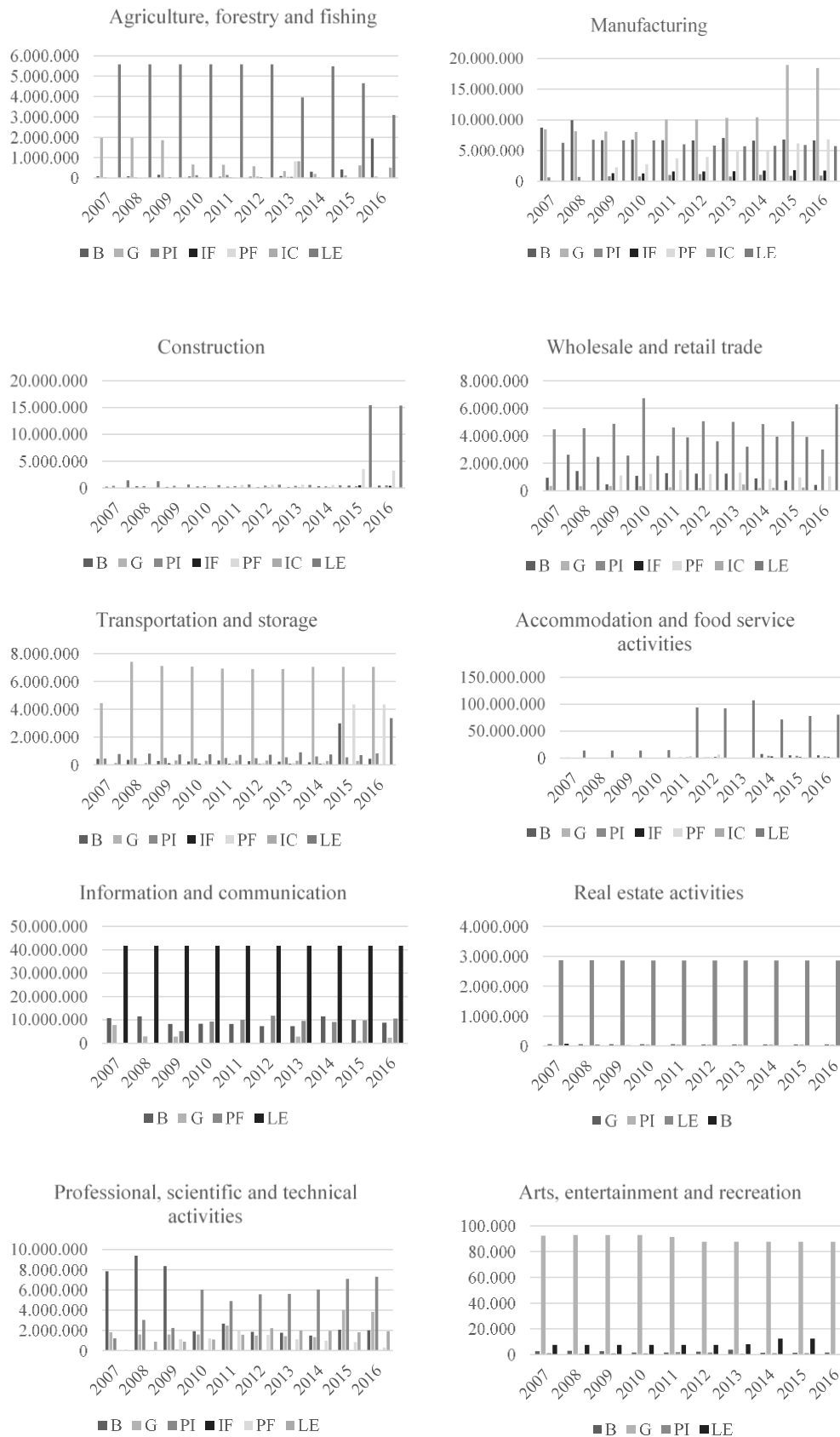


A = Agriculture, forestry and fishing; C= Manufacturing; F= Construction; G= Wholesale and retail trade; H= Transportation and storage; I= Accommodation and food service activities; J= Information and communication; L= Real estate activities; M= Professional, scientific and technical activities; R= Arts, entertainment and recreation

The ownership concentration and domination of the specific type of owners is different depends of the sector. The detail analysis of the owners in the specific sector is present at the Figure 3.

Figure following on the next page

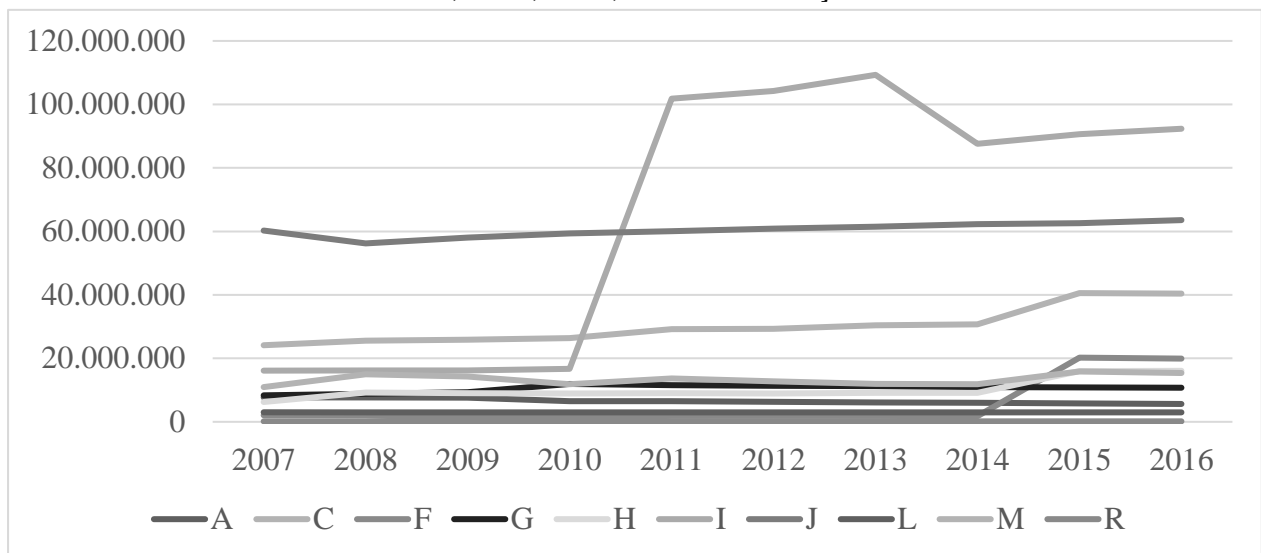
Figure 3: Type of ownership in particular sector per year [Based on SKDD annual reports for 2012, 2013, 2014, 2015 and 2016]



*B = banks; G = government; PI = private investors; IF = investment funds; PF = pension funds; IC = insurance companies; LE = legal entities*

Changes in owners' structure through the observed sectors affect the total capital investment, as can be seen at the Figure 4. After the privatization or transition period, the new owners (sometimes-foreign investors as legal entities) continued with investments to increase profitability (Aljinović Barać, Muminović, 2013). Most changes are visible in the sector I = Accommodation and food service activities, mostly due to the dominance of legal entities and the assumption that they recent know-how has a major impact on total capital investment. The presence of state-owned companies in the sector C= Manufacturing is very high according to other sectors considering the strategic significance of these companies and their performance. Total capital investment means investing in a company with the goal to further its business objectives. From this point of view, total capital investment in the observed period is constant and significant in sector J= Information and communication, because of the facts that some of the companies from this sector are significant technological innovators, and there is an interest of legal entities and pension funds for their shares.

Figure 4: Total capital investment per observed sector [Based on SKDD annual reports for 2012, 2013, 2014, 2015 and 2016]



A = Agriculture, forestry and fishing; C= Manufacturing; F= Construction; G= Wholesale and retail trade; H= Transportation and storage; I= Accommodation and food service activities; J= Information and communication; L= Real estate activities; M= Professional, scientific and technical activities; R= Arts, entertainment and recreation

## 5. SUMMARY AND CONCLUSIONS

In this paper the detail analysis of ownership structure and ownership concentration in the context of corporate governance is addressed. The structure of corporate ownership with respect to ownership concentration have a significant impact on corporate performance. It can be concluded that the ownership concentration is a significant internal governance mechanism which is connected with the principal-agent problem or with the influence of the owners on the management to do the job in their interest. The research study was conducted on the 50 most liquid companies in Croatia and the results shows that ownership structure in Croatia is still very concentrated. Also, the data shows that one of the largest owners depends of the sector are legal companies, pension funds and government. Still the private investors are minor. This fact opens another problem which is connected with the protection of small private investors.

**LITERATURE:**

1. Abdallah A.A.N., Ismailb A. K. (2017). *Corporate governance practices, ownership structure, and corporate performance in the GCC countries*. Journal of International Financial Markets, Institutions and Money, Volume 46, January 2017, Pages 98-115
2. Aluchna M., Kuszewski, T. (2018). *Pyramidal structures: The evidence from Poland*. South African Journal of Business Management ISSN: (Online) 2078-5976
3. Al-Sharif F., Bino A., and Tayeh M. (2015). *The Impact of Ownership Structure on Stock Liquidity: Evidence from Amman Stock Exchange*. Jordan Journal of Business Administration, Volume 11, No. 1.
4. Aljinović Barać Ž., Muminović S. (2013). *The impact of capital investments*. Mljekarstvo 63 (3), 140-149 (2013)
5. Bajo A., Primorac M., Zuber L. (2018). *Financial performance of state-owned enterprises*. FISCUS. Institute of Public Finance, No. 5/January 2018
6. Balaban M. (2014). *Role of insurance company as institutional investors*. Retrieved May 27, 2019 from [http://ebooks.ien.bg.ac.rs/243/1/mb\\_2014\\_01.pdf](http://ebooks.ien.bg.ac.rs/243/1/mb_2014_01.pdf)
7. Ćurak M., Utrobičić M., Kova D. (2014). *Firm specific characteristics and reinsurance – evidence from Croatian insurance companies*. EKON. MISAO PRAKSA DBK. GOD XXIII. BR. 1. (29-42)
8. Džanić A. (2012). *Concentration of ownership and corporate performance: evidence from the Zagreb Stock Exchange*. Financial theory and practice. 36 (1) 29-52
9. Elvin P., Hamid N.I.N.A. (2016). *Ownership Structure, Corporate Governance and Firm Performance*. International Journal of Economics and Financial Issues, 6(S3) 99-108.
10. Jacoby G., Zheng S.X. (2010). *Ownership dispersion and market liquidity*. International Review of Financial Analysis, vol. 19, issue 2, 81-88.
11. Klačmer Čalopa M., Cingula M. (2009). *Privatization and Corporate governance - financial and legal aspects: The case of Croatia*. Managing in a Global Economy XIII “Management Challenges for a New World”, Rio de Janeiro, Brazil, June 21 - 25, 2009, Eastern Academy of Management
12. Klačmer Čalopa M., Đunđek Kokotec I. (2017). *The performance of the investment trust industry: Evidence from Croatia*. 20th International Scientific Conference on Economic and Social Development - ESD Jubilee with "City of Prague"
13. Pervan M., Pervan I., Todoric M. (2012). *Firm Ownership and Performance: Evidence for Croatian Listed Firms*. World Academy of Science, Engineering and Technology 61
14. Škuflić L., Turuk M., Crnjac J. (2013). *The influence of ownership structure on the performance in Croatian hotel industry*. EKONOMSKA ISTRAŽIVANJA-ECONOMIC RESEARCH ISSN 1331-677X print, Vol 26(2): 209-224 Juraj Dobrila University of Pula, Department of Economics and Tourism “Dr. Mijo Mirković”
15. Tipuric D. (2015). *COPRORATE GOVERNANCE IN CROATIA Quality Evaluation of Corporate Governance in Croatian Joint Stock Companies via SEECGAN methodology*. 2015. CIRU - Governance Research and Development Centre Ltd, Zagreb, pp 272. ISBN: 978-953-57413-9-8
16. Yosra G., Sioud O.B.O. (2011). *Ultimate ownership structure and stock liquidity: empirical evidence from Tunisia*. Studies in Economics and Finance, Vol. 28 Issue: 4
17. Zheka, V. (2003). *Corporate governance, ownership structure and corporate efficiency: the case of Ukraine*. Master Thesis in Economics. National University of Kyiv-Mohyla Academy.

## **PROBLEMS OF THE INFORMATION SOCIETY AGAINST THE BACKGROUND OF THE GLOBALIZATION PROCESS**

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### **ABSTRACT**

*Globalization is one of the drivers behind scientific and technological advances, including the development of information technologies. Nowadays, the way we live is closely linked to modern technologies and Internet access. The Internet provides us with an increasing variety of services and facilities. The number of Internet users is growing and their age range is widening. The Internet has become part and parcel of our work, entertainment and everyday life. The paper presents an analysis of a particular set of diagnostic features. The variables, whose relevance and statistical accuracy were first verified, formed a basis for the classification of the selected European countries and US states in terms of the computer and Internet use by physical persons aged 55-75 and 12-22. The data comes from the statistical yearbooks published by the Central Statistical Office and from the Eurostat websites; it covers the years 2018 and 2012. The aim of the analysis is to investigate the level of Internet and computer use by people aged 55-75 (12-22) in the selected European countries and US states in the years 2018 and 2012 by means of Forgy-Jancey method.*

**Keywords:** *Econometric Methods, Information Society, Taxonomic analysis*

### **1. INTRODUCTION**

New technologies, in particular the Internet, have been permeating our lives, thus enabling us to function properly in the society. They contribute to the economic, political and social development (Goban-Klas and Sienkiewicz, 1999), (Bliźniuk and Nowak, 2005). Technological advancement plays a part in the development of various fields of science, including medicine, which, in turn, significantly affects the changes occurring in the demographic structure of particular countries. The number of senior citizens has been rising year by year, and the populations of the highly developed countries have been steadily ageing. Unfortunately, it is difficult for seniors to find their feet in the world dominated by new technologies and the Internet. The development of the information society, whose existence is based on information gathering and information transfer by means of new technology tools and the Internet, leads to the digital exclusion of elderly citizens. There can be various causes of this phenomenon, including lack of physical Internet access, lack of skills necessary to use the computer or other electronic devices of a similar kind, and difficulty using online facilities and services. Digital exclusion of the elderly can be observed in the majority of countries. It poses an enormous problem as people who are not able to use new technologies are deprived of the possibility to fully participate in the normal activities available to the other members of the society. The article aims to analyze senior citizens' ICT activity, focusing on the Internet usage.

### **2. THE METHOD FOR THE CLASSIFICATION OF COUNTRIES BASED ON THE LEVEL OF INTERNET USE BY PEOPLE AGED 55-75 AND 12-22**

One of the taxonomic clustering methods is the optimization method developed by Forgy and Jancey (Panek, 2009, pp. 139). It involves the application of the following partition-based framework. First, a certain number of clusters, where all the objects are initially assigned, as well as the number of iterations relocating the objects between the clusters are pre-specified.

Next, the coordinates of the clusters' centers of gravity (the initial cluster centroids) are calculated (Panek, 2009, pp. 130). After that, each object is reassigned to the cluster whose centroid is closest to the object. The centroid of the new cluster is calculated using the following formula (1):

$$J_r^t = J_r^{t-1} + a\bar{O}_r^{t-1} - aJ_r^{t-1}, r = 1, 2, \dots, z \quad (1)$$

where:

$J_r^{t-1}$  - the centroid of the current cluster of objects,

$Q_r^{t-1}$  - the center of gravity of the current cluster of objects,

$a$  - the adopted parameter.

The procedure is considered completed when either the pre-specified maximum number of iterations is reached or the membership of the clusters stops changing (Panek, 2009, pp. 130).

### 3. THE EMPIRICAL ANALYSIS

The aim of the analysis was to divide the selected European countries, and next, the US states, into clusters characterized by a similar level of new technology use, particularly the Internet, in two age groups: 55-75 and 12-22 in the years 2012 and 2018. The clustering was performed by means of Forgy-Jancey method. The years 2018, 2012 were selected for the comparative purposes, and the data comes from the Statistics Poland website. The variables employed in the analysis had to meet certain requirements: they are measurable and best describe the level of Internet use by the individuals examined in the study (Janiga-Ćmiel, 2016, pp. 94-103), (Janiga-Ćmiel, 2017a, pp. 283-288), (Janiga-Ćmiel, 2017b, pp. 787-795), (Janiga-Ćmiel, 2018a, pp. 2099-2106), (Janiga-Ćmiel, 2018b, pp. 76-84). The following variables were used:

$X_1$  - Number of the Individual lives in household without the Internet use,

$X_2$  - Percentage of individuals who used internet within the last year,

$X_3$  - Number of the Individuals who have never used either the computer or the Internet,  $X_4$ -

Number of the Individuals who finding information about goods and services - Internet use,

$X_5$  - Number of the Individuals who posting messages to social media sites or instant messaging.

The diagnostic variables selected for the analysis of the European countries in the year 2012 (population aged 55-75) were standardized. 4 groups, comprising the following objects, were pre-specified:

$G_1^0$	$G_2^0$	$G_3^0$	$G_4^0$
Belgium	Greece	Lithuania	Portugal
Bulgaria	Spain	Luxembourg	Romania
Czech Republic	France	Hungary	Slovenia
Denmark	Croatia	Malta	Slovakia
Germany (until 1990 former territory of the FRG)	Italy	Netherlands	Finland
Estonia	Cyprus	Austria	Sweden
Ireland	Latvia	Poland	United Kingdom
Norway			Iceland

Table 1: The initial classification (2012) (population aged 55-75) (based on own research)

In addition, it was assumed that the optimal clusters would be obtained after 20 iterations ( $a=1$ ). For each cluster, the center of gravity (as a cluster centroid) was calculated, receiving:

$$O_1^0 = [0.130; -0.656; 0.179; -0.702; 0.159],$$

$$O_2^0 = [-0.457; 0.245; -0.187; 0.204; 0.755],$$



$$O_3^0 = [0.865; -0.314; 0.662; -0.320; 0.080],$$

$$O_4^0 = [-0.264; 0.684; -0.918; 0.828; -0.774].$$

Each country was assigned to the cluster with the smallest distance to the centroid. As a result, the following classification emerged:

$G_1^1$	$G_2^1$	$G_3^1$	$G_4^1$
Iceland	United Kingdom	Slovenia	Poland
Norway	Finland	Slovakia	Portugal
Sweden	Romania	Estonia	Malta
Netherlands	Austria	Czech Republic	Croatia
Luxembourg	Hungary		Italy
Denmark	Spain		Cyprus
Germany (until 1990 former territory of the FRG)	France		Latvia
			Lithuania
			Bulgaria

Table 2: The classification (2012) (population aged 55-75) (based on own research)

The second stage of calculations:

$G_1^2$	$G_2^2$	$G_3^2$	$G_4^2$
Germany (until 1990 former territory of the FRG)	United Kingdom	Slovenia	Poland
Norway	Finland	Spain	Portugal
Sweden	Iceland	Estonia	Malta
Netherlands	Austria	Czech Republic	Croatia
Luxembourg	France	Hungary	Italy
Denmark	Slovakia		Cyprus
			Latvia
			Lithuania
			Bulgaria
			Romania

Table 3: The classification (2012) (population aged 55-75) (based on own research)

The new centroids:

$$J_1^2 = [0.963; -0.610; 0.061; -0.702; 1.021]$$

$$J_2^2 = [-0.457; 0.946; 0.082; 0.866; 0.661]$$

$$J_3^2 = [0.051; -0.309; 5.644; -0.320; 0.481]$$

$$J_4^2 = [0.339; 0.285; -0.918; 2.575; -0.630]$$

After calculating the new centroids and minimum distances, the original membership of the clusters did not change, and thus the classification remained unchanged. A similar analysis was performed for the year 2018. This time, the following clusters were identified:

Table following on the next page

$G_1^2$	$G_2^2$	$G_3^2$	$G_4^2$
Finland	United Kingdom	Slovenia	Latvia
Norway	Germany (until 1990 former territory of the FRG)	Spain	Bulgaria
Sweden	Iceland	Estonia	Malta
Denmark	Austria	Czech Republic	Cyprus
	France	Hungary	Lithuania
	Netherlands	Poland	Romania
	Luxembourg	Croatia	Slovakia
		Portugal	
		Italy	

Table 4: The classification (2018) (population aged 55-75) (based on own research)

For the population aged 12-22, the following clusters emerged in the years 2012 and 2018 respectively:

$G_1^2$	$G_2^2$	$G_3^2$	$G_4^2$
Germany (until 1990 former territory of the FRG)	Luxembourg	Slovenia	Poland
United Kingdom	Finland	Spain	Portugal
Sweden	Iceland	Austria	Malta
Netherlands	France	Czech Republic	Croatia
Denmark		Hungary	Italy
Norway		Slovakia	Cyprus
			Latvia
			Lithuania
			Bulgaria
			Romania
			Estonia

Table 5: The classification (2012) (population aged 12-22) (based on own research)

$G_1^2$	$G_2^2$	$G_3^2$	$G_4^2$
Germany (until 1990 former territory of the FRG)	United Kingdom	Slovenia	Romania
Norway	Finland	Spain	Portugal
Sweden	Iceland	Estonia	Malta
Netherlands	Austria	Czech Republic	Croatia
Luxembourg	France	Hungary	Italy
Denmark	Slovakia	Poland	Cyprus
			Latvia
			Lithuania
			Bulgaria

Table 6: The classification (2018) (population aged 12-22) (based on own research)

In the selected US states, the analysis of the 55-75-year-olds in the years 2012 and 2018 led to the identification of the following clusters:

Table following on the next page

$G_1$	$G_2$	$G_3$	$G_4$
New York	Alaska	Oregon	New Mexico
District of Columbia	New Hampshire	Utah	Kentucky
Washington	Maryland	California	Mississippi
Minnesota	Massachusetts	Pennsylvania	Illinois
New Jersey	Delaware	Florida	Vermont
Connecticut	Tennessee	Maine	Nebraska
	Arkansas	Wyoming	
	Rhode Island		
	Colorado	Hawaii	North Carolina
		Virginia	Indiana
		Alabama	South Carolina
		Oklahoma	Missouri
		North Dakota	Texas
		West Virginia	Wisconsin
		Georgia	Montana
		Nevada	Kansas
		Iowa	Arizona
		Michigan	Louisiana
		Ohio	South Dakota
		Idaho	

Table 7: The classification (2012) (population aged 55-75) (based on own research)

$G_1$	$G_2$	$G_3$	$G_4$
New York			
Alaska	Tennessee	Wyoming	
District of Columbia	Colorado	Florida Maine	New Mexico
	Rhode Island	Alabama	
Connecticut Maryland	New Hampshire	Virginia	Kentucky
Washington	Delaware	California	Mississippi
Minnesota	Massachusetts	Pennsylvania	Illinois
	Arkansas	Oklahoma	Montana
New Jersey	Hawaii	North Dakota	Vermont
		West Virginia	Nebraska
		Nevada	South Carolina
		Iowa	Indiana
		Arizona	Louisiana
		Ohio	
		Michigan	
		Georgia	
		Idaho	Wisconsin
		North Carolina	Texas
		South Dakota	Missouri
		Oregon	Kansas

Table 8: The classification (2018) (population aged 55-75) (based on own research)

For all the groups, formed both in the year 2018 and 2012, the differences between the inter-group and intra-group variances were examined. It was found out that in each case the inter-group variance is significantly higher than the inter-group variance. Thus, the calculated difference is statistically significant and there is no need for further delimitation of the groups (Grabiński, Wydymus, Zeliaś, 1989), (Panek, 2009), (Pociecha, Podolec, Sokołowski, and Zając, 1988).

#### 4. CONCLUSION

The multivariate comparative analysis performed by means of the selected method enabled the examination of ICT use, the Internet in particular, by individuals from two age groups (55-75), (12-22), taking into consideration a set of selected features that characterize the level of ICT adoption in the selected European countries and US states (55-75). The analysis spanned the years: 2012 and 2018. As far as the European countries are concerned, they were classified into similar clusters in both years. Minor changes can be observed in relation to the following countries: Netherlands, Luxembourg, Denmark, Poland, Portugal etc. As for the US states, the membership of the clusters did not change significantly in the two years covered by the study. The very few exceptions include the following states: Alaska, Maryland, North Carolina, Hawaii etc. The results of the analysis indicate that countries (states) displaying a high level of social and economic development lead in ICT use. They also show that it is necessary to undertake any activities which can counteract digital exclusion since it always affects the most vulnerable social groups: the elderly, the unemployed, people with disabilities, as well as the inhabitants of rural and small urban areas. Modern economic systems, societies, and countries depend on technology. The only people who can fully participate in today's socio-economic life are those who have acquired ICT literacy and have the necessary skills in this respect. At the same time, it is worth stressing that the improvement in individuals' lives contributes to enhanced socio-economic development.

#### LITERATURE:

1. Bliźniuk, G., Nowak J.S. (2005), *Spółeczeństwo informacyjne 2005*, Katowice, PTI, ( pp. 15-40)
2. Goban-Klas, T., Sienkiewicz, P. (1999), *Spółeczeństwo informacyjne. Szanse, zagrożenia, wyzwania*. Kraków, Wydawnictwo Fundacji Postępu Telekomunikacji, (pp. 40-117).
3. Grabiński, T., Wydymus, A., and Zeliaś, A. (1989), *Metody taksonomii numerycznej w modelowaniu zjawisk społeczno-gospodarczych*. Warszawa, PWN, (pp.71-100).
4. Janiga-Ćmiel, A. (2016), *Analiza społeczeństwa informacyjnego wybranych krajów*, Studia Ekonomiczne, Zeszyty Naukowe nr 301, Katowice, Wydawnictwo UE w Katowicach, ( pp.94-103).
5. Janiga-Ćmiel A. (2017a), *A Comparative Analysis of the Information Society In Poland and Selected Countries*. Proceedings of 35<sup>th</sup> International Conference Mathematical Methods In Economics, Hradec Kralove, Czech Republic, (pp. 283-288).
6. Janiga-Ćmiel, A. (2017b), *Globalisation and the information society in Poland and selected countries*. Proceedings of 17th International Scientific Conference. Globalization and its socio-economic consequences, Zilina, Czech Republic, (pp. 787-795)
7. Janiga-Ćmiel, A. (2018a), *Analysis of the level of internet - based information processing in the USA and selected countries of the European Union against a background of globalization*. Proceedings of 18th International Scientific Conference. Globalization and its socio-economic consequences, Zilina, Czech Republic, (pp. 2099-2106)
8. Janiga-Ćmiel, A. (2018b), *Correspondence analysis of the information society*. Contemporary issues and economic problems, ed. Martina Blaskova, Sylwia Pangsy-Kania, Karolina Drela, Aneta Sokół, Aachen: Shaker Verlag, (pp. 76-84)
9. Panek, T. (2009), *Statystyczne metody wielowymiarowej analizy porównawczej*. Warszawa: Szkoła Główna Handlowa w Warszawie – Oficyna Wydawnicza, (pp. 58-114).
10. Pocięcha, J., Podolec B., Sokołowski, A., and Zajac, K. (1988), *Metody taksonomiczne w badaniach społeczno-ekonomicznych*, Warszawa, PWN

## **COOPERATION BETWEEN LOCAL GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATIONS AS A PLATFORM FOR THE DEVELOPMENT OF SOCIAL DIALOGUE**

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### **ABSTRACT**

*The independence of territorial self-governments in the process of implementing the tasks imposed on them does not mean that they have to implement them independently. Achieving the assumed goals of action often requires skillful cooperation with other entities, including non-governmental organizations. Local government is the closest partner of non-governmental organizations, not only through action in the local community, but above all through a community of purpose, which is to meet the needs of residents. NGOs represent the local community. The basis for the functioning of the state is social dialogue. The guarantee of successful cooperation between partners is cooperation based, on the one hand, on the awareness of local governments of jointly diagnosing and solving local problems, and on the other – on the awareness of non-governmental organizations to jointly implement their goals. It should be emphasized that territorial self-government – fulfilling statutory tasks and non-governmental organizations (voluntary associations of people devoting their time and energy to achieve social goals) are two different types of entities. Dialogue and cooperation between them should aim to integrate and mobilize entities to improve the quality of life in small homelands. The main goal of the article is therefore to draw attention to the importance of cooperation between territorial self-governments and non-governmental organizations in order to achieve positive results. It emphasizes the principles on which such cooperation should be based. The areas of this cooperation were indicated, giving examples of practices. The work mainly uses the desk research method in the form of literature analysis, reports and exploitation of online resources, as well as case analysis.*

**Keywords:** *cooperation, local government, management, non-governmental organizations, social dialogue*

### **1. INTRODUCTION**

Cooperation of local government administration with external bodies, including non-governmental organizations, should be based on the creation of information instruments, dialogue with citizens and establishing partner relations with the surrounding entities. The foundation of good cooperation is a properly developed information policy focused on particular groups of stakeholders with whom such cooperation is required. In modern local government administration, information policy is a management instrument which enables the implementation of designated public tasks and strategic goals (Jastrzębska, 2010, p. 125). Local self-government units, especially in the sphere of official contacts with recipients should

(Kowalczyk, 2011, p. 24) provide reliable information. An important mission is to broaden the recipients' knowledge about reality, so as to reduce their uncertainty about the state of their surroundings. Thanks to good communication- or a well-run information policy- one can build the right relationship in both social and economic life. A very important element is to create mutual trust and establish cooperation in co-deciding about the use of resources. A partnership founded by an appropriate system of values creates and tightens the ties between individuals in the region, positively impacting the efficiency of individuals' operations. The essence of the partnership is to cooperate in establishing common goals and in effective and efficient implementation. Dialogue and cooperation between local government and non-governmental institutions should aim to integrate and motivate those entities to improve the quality of life in the respective region. The main purpose of this article is to highlight the importance of cooperation between self-government authorities and non-governmental organizations in order to achieve common goals for the benefit of all parties involved. Social dialogue and partnership must be based on easy access to information and its efficient circulation. In the article, the authors used the analysis of literature, reports and the use of online resources and the results of interviews with local government representatives.

## **2. ESSENCE AND PRINCIPLES OF COOPERATION BETWEEN SELF-GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATIONS**

Partnership in the region should be considered a specific determinant of development (see: Marciszewska, Studzieniecki, Wanagos, 2017, pp. 648–656). However, to be effective it must result from the good will of each partner. Creating a partner relationship is a dynamic and inter-dependent process. M. Saunders indicates that the partnership's success requires: frequent communication, both formal and informal; cooperative attitude of the parties; trust between the parties; honest information; multidisciplinary involvement (Black, Akintoye., Fitzgerald, 2000, p. 423). It also requires imagination and empathy. Within the local environment, there are non-governmental organizations that share many features with local government; it should be emphasized, however, that territorial self-government and non-governmental organizations are two different entities (Iwankiewicz-Rak, 2011, pp. 13–20; Rados, 1996, p. 15). Municipalities, poviats and voivodships perform their respective statutory tasks for which they have resources (funds, human capital), while non-governmental organizations are voluntary associations of people who devote their time, know-how and energy to achieving important (social) goals. They implement priority objectives for particular social groups, not for the general public. Units of territorial self-government, while making decisions about conducting a dialogue, are aimed at proper identification of needs and expectations in the sphere of public objectives, and subsequently their correct implementation by directing resources to local issues. As for NGOs, the decision to cooperate is based on different motivations, as this sector is very divergent. The essence of successful cooperation between partners is cooperation based, on one hand, on the local authorities' awareness and willingness to jointly diagnose and solve local problems, and on the other – on the NGO's awareness and willingness to jointly implement the set objectives. The development of a common information policy and basis for dialogue should be to build a culture of cooperation between local government and non-governmental organizations. The specificity of territorial self-government, where the residents participate not only directly but also through the activities of non-governmental organizations in the socio-economic life, indicates that relations between partners should be based on particular principles (Model..., 2019; Poradnik..., 2019) including: sovereignty, subsidiarity, partnership, efficiency, openness and fair competition. In principle, sovereignty emphasizes that cooperating partners remain independent in mutual relations, respect the competences of the other party, among others in achieving set goals. This rule ensures mutual constructive exchange of views and its own representation and strengthening of its structures in order to increase the potential for effective

action. According to the principle of subsidiarity, the exercise of public authority should rest in the hands of the institutions closest to citizens, therefore the tasks and competences, as well as financial resources, are first and foremost available to municipalities. The main assumption of this rule is the appropriate distribution of tasks among particular levels according to the nature and effectiveness of their implementation (Gołębiowska, Zientarski, 2016, p. 23). This principle attempts to answer the question of the scope of independence and self-sufficiency of citizens, social groups, smaller and larger communities in various spheres of the functioning of the state (Dolnicki, 2009, p. 23). The local government performs public tasks to meet the needs of its residents. The local government should allow citizens to solve their problems, that is, delegate tasks to non-governmental organizations, if they are able to perform these tasks according to an established and accepted standard, and support the implementation of civic initiatives. On the other hand, non-governmental organizations should undertake only tasks which they are able to perform for the benefit of the local community, support informal citizen initiatives and act to empower residents in solving their issues and assuring independent functioning in the community. In the management of territorial self-government (public affairs), the principle of openness of information processes should also be respected. In the information policy of local self-government bodies, in particular in respecting the right of residents to obtain information, which decisions about their community were made, how and how self-governmental funds are managed. Public character of territorial self-government requires various forms of citizen involvement in decision-making processes and building a system of actual social control. Authorities should strive to obtain public support for policy and possible changes. Information should be made available in different forms (accessibility, appropriate formats), be adequate in terms of content (meeting the needs of the recipient related to the decision, high level of clarity). It must be timely, credible, and present matters in accordance with reality. It should also be able to be cross-checked, completed, deepened and extended. The principle of fair competition assumes that all properly prepared entities may compete for the possibility of performing public tasks. You can find the most effective implementer of public tasks. Local government units must suppress monopolistic tendencies and conflicts of interest related to combining public and social functions. It is the duty of non-governmental organizations to combine their interests with the interests of the community and the authorities. Together, they should develop non-discriminatory, clear criteria for each co-operation partner within all sectors. The principle of effectiveness requires local governments and non-governmental organizations to constantly raise the potential for efficient implementation of public tasks, so that they are implemented based on the principles of economy (economically), creating maximum value for specific expenditure while respecting public resources. It is important to draw attention to the good quality and practicality (usefulness) of the proposed solutions for the implementation of a specific goal. The last of the principles quoted – the partnership principle – assumes the cooperation of sovereign partners for the purposes that are crucial for the development of the local community and the well-being of its citizens. Both sides undertake efforts to convince them that by combining resources and competences they shall achieve better results. The partnership assumes that all parties cooperate with each other, based on the principles of participation, co-decision and co-responsibility.

### **3. FORMS OF COOPERATION BETWEEN SELF-GOVERNMENT AND NGO'S**

The number of non-governmental organizations as well as their role in the local government administration is growing all over the world. However, this does not always translate into their activity and the way they cooperate with public administration in a globalization era (Ebrahim, 2003, pp. 151–169; Broniewska, 2013, p. 415; Adamiak, Czupich, Ignasiak-Szulc, 2013, p. 23). One of the symptoms of decentralization of public management is supporting the so-called third sector and involvement of public authorities in the functioning of voluntary social organizations

(Alcock, 2012 pp. 219–238). Such actions are to facilitate the strengthening of civil society, the essence of which is often highlighted today (Pollard, Court, 2008, pp. 133–152). Decentralization of public management is also associated with the transfer of many tasks to non-governmental organizations. It is very important to develop standards for cooperation between public administration and the non-governmental sector (Bogacz-Wojtanowska, 2011; Rymsza, Frączak, Skrzypiec, Wejman, 2007). In Europe, two models of cooperation between public administration and non-governmental organizations in the area of public benefits (social benefit) are used most commonly: the German and the English model (see: Rymsza, Frączak, Skrzypiec, Wejman, 2007, pp. 9–14). The first is characterized, first of all, by two features: full implementation of the state subsidiarity principle, utilised in the legal system as a principle of social entities priority in the provision of social services through public funds, and the corporate character of public administration- and NGOs; this is reflected in building, within the third sector, structures compatible with public administration structures which are able to negotiate terms of cooperation at any level of the administrative division of the state. The English model, on the other hand, is characterized by a greater openness to competition between healthcare providers and a greater role of market (or quasi-market) mechanisms in the system of commissioning public tasks. In Great Britain, there is talk of the state's cooperation with the "independent sector", there are no special preferences for non-governmental organizations, and the principles of intersectoral cooperation are determined to a large extent by public-private partnership rather than public-social partnership. In both models, the standardization of cooperation serves to professionalize the third sector. Non-governmental organizations in Germany are becoming similar to public institutions; they take over their standards and organizational culture. The English model makes non-governmental organizations similar to commercial companies (corporations). In both models, you can see attempts to introduce elements of the competitive model. The Polish model of cooperation of local government administration with non-governmental organizations includes elements of both these competing models. The competition procedure for commissioning public tasks assumes the principle of relative priority of non-governmental organizations (in relation to commercial entities that can not submit bids, but not to public entities), while introducing elements of competition within the third sector. In Poland, the Law on Public Benefit and Volunteer Work has imposed on local governments the obligation to create an annual program of cooperation with non-governmental organizations, which should ultimately translate into a fuller fulfilment of the various needs of local residents (Programy..., 2019). Self-government gives the local community the right to decide on the quality of life in a given administrative area, the right to take actions to stimulate the development of its own region and to more efficiently meet the diverse needs of its inhabitants (Przybyszewski, Atamańczuk, 2011, p. 32). The cooperation of local government administration with NGOs can take various forms – both financial and non-financial. One of such forms of cooperation is the above-mentioned fact of transferring some of the tasks directly to the citizens. Commissioning public tasks and own tasks, partnership agreements, agreements for the implementation of a local initiative, and implementation of joint projects are financial forms of cooperation. The support is given in the form of grants on the terms set out in the Act, after the competition procedure has been carried out on the initiative of a public administration authority or at the request of a non-governmental organization. The subsidy may be dedicated strictly to the implementation of particular tasks, it may not be a subject-based subsidy or be intended for the business activity of the organization. An example of the implementation of a joint project, within the financial form of assistance, are various types of projects proposed by the Human Capital Operational Program. It is worth noting that one can also encounter the situation (especially in less developed countries), when NGOs replace typical (especially in Western regions) state functions. They build schools and hospitals, provide drinking water, introduce new methods of farming, etc. (Koch, 2009, pp. 143–200].



In spite of the fact that many organizations are only local in scope, they can create advantageous conditions and play an important role in the area of education, social activation, counteracting all kinds of discrimination, as well as professional activation. A doubtless advantage of NGOs is a less formalized organizational structure and its wider access to the group of potential recipients. On the basis of interviews with local government representatives and own observations, it is noted that in many communes the most calls for cooperation between self-government and NGOs concern social issues, mainly support for the elderly and people at risk of poverty, for the disabled, for families at risk of domestic violence and helpless in solving basic care problems as well as educational issues and help in solving alcohol addition problems. Many joint activities are also in the field of culture and art, including supporting local artists or promoting local culture. Non-financial forms of intersectoral cooperation include, most importantly, information, exchange of information, consultation of normative acts, creation of joint advisory and initiative teams, joint projects regarding events, trainings, professional development etc. Mutual exchange of information is vital, which means that not only the administration has an obligation to provide information to non-governmental organizations: the flow of information should also work the other way round. The subject of mutual information by NGOs and administration can be, for example: issues related to the announcement of competitions / results of contests, current training and meetings, adoption of final resolutions and decisions of administrative authorities, ongoing activities of the organization, etc. The local government authorities are obliged to consult with the NGO community all the legal acts whose scope concerns the sphere of statutory activity of these organizations. The purpose of consultations is to make better, more thought-out decisions and develop more satisfying outcomes. One of the ways to form a more systematic cooperation is to create teams (of an advisory and initiative character), consisting of representatives of local government and non-governmental organizations together. On the basis of interviews with local government representatives, as far as non-financial forms are concerned, local governments usually participate in the preparation of trainings, conferences, a forum for exchanging experiences in order to improve the efficiency of the organization. Self-governments also share premises and technical means for open meetings and events. Cooperation also concerns the exchange of information on the planned directions of activity and cooperation by creating joint task forces (with an advisory and initiative character). With various forms of cooperation between non-governmental organizations and local government, one should also be aware of obstacles, including economic, legislative, administrative or social barriers (Ziółkowska, Gronkiewicz, 2012). In addition, both sectors are required to comply with the specific cooperation rules mentioned in the previous section. Representatives of the local government frequently pointed out certain claims of some organizations; among others low degree of integration, not always transparent and "clean" competition in access to public funds characterized by thinking only in terms of the interest of their own organization, low level of involvement in group initiatives, inability to present their achievements and work for the benefit of the local community. The cooperation system, nonetheless, certainly strengthens, assures and increases the effectiveness of the adopted social solutions.

#### **4. CONCLUSION**

Local government units and non-governmental organizations have an important common goal, which is, namely, to meet the needs of the local community. Actions undertaken by both sectors are complementary on many levels which facilitates their implementation more efficiently and more effectively. This cooperation must be based on mutual trust and understanding of each others' needs. Each time the decision to initiate such cooperation (and its scope) should take into account the analysis of the needs and expectations of local communities, so as to maximize their satisfaction.

Non-governmental organizations, thanks to their functioning, can (and should) generate additional added value apart from creating civil society. They are to be partners in the creation and implementation of development strategies and local ventures, and provide a channel for local government communication with the local community. Therefore, the involvement of public authorities should support the activity and creativity of citizens who form the institutions belonging to this sector. Non-governmental organizations, fulfilling tasks falling within the competence of public administration, should consider local government their natural ally and look for support there. Unfortunately, the most common form of help that is expected from the local government is financial subsidies or assistance in obtaining funds from diverse sources. They also see cooperation in the organization and service of events for, or commissioned by, the self-government. Local government authorities are supposed to support external organizations, not to replace and finance them. It is worth emphasizing that it is necessary to allow the local community and local authorities to engage non-governmental organizations in solving local problems. However, it is necessary to educate those involved in the dialogue between the local government and non-governmental organizations in a given area.

#### LITERATURE:

1. Adamiak, J., Czupich, M., Ignasiak-Szulc, A. (2013). Wybrane aspekty współpracy samorządu terytorialnego z organizacjami pozarządowymi w realizacji zadań publicznych. *Prawo Budżetowe Państwa i Samorządu*, No. 2 (1).
2. Alcock, P. (2012). New Policy Spaces: The Impact of Devolution on Third Sector Policy in the UK. *Social Policy & Administration*, Vol. 46, No. 2.
3. Black, C., Akintoye, A., Fitzgerald, E. (2000). An analysis of success factors and benefits of partnering in construction. *International Journal of Project Management*, No. 18.
4. Bogacz-Wojtanowska, E. (2011). *Współdziałanie organizacji pozarządowych i publicznych*. Kraków: Monografie i Studia Instytutu Spraw Publicznych Uniwersytetu Jagiellońskiego.
5. Broniewska, M.J. (2013). Współpraca organizacji pozarządowych (NGO) z administracją publiczną – strategia i zasady. *Zeszyty Naukowe Uniwersytetu Przyrodniczo-Humanistycznego w Siedlcach. Seria: Administracja i Zarządzanie*, No. 98.
6. Dolnicki, B. (2009). *Samorząd terytorialny*. Warszawa: Oficyna a Wolters Kluwer business.
7. Ebrahim, A. (2003). *NGOs and Organizational Change. Discourse, Reporting, and Learning*. New York: Cambridge University Press. Retrieved from 4.03.2019 from: <https://epdf.pub/ngos-and-organizational-change-discourse-reporting-and-learning.html>.
8. Gołębiowska, A., Zientarski, B. (eds.) (2016). *Funkcjonowanie samorządu terytorialnego – uwarunkowania prawne i społeczne*. Warszawa: Kancelaria Senatu.
9. Iwankiewicz-Rak, B. (2011). *Marketing w organizacjach pozarządowych – obszary zastosowań*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.
10. Jastrzębska, K. (2010). Polityka informacyjna władz lokalnych w zakresie możliwości zdobywania i podnoszenia kwalifikacji przez mieszkańców. *Zeszyty Naukowe Instytutu Spraw Publicznych Uniwersytetu Jagiellońskiego „Zarządzanie Publiczne”*, No. 4 (12).
11. Koch, D. (2009). *Aid from International NGOs: Blind Spots on the AID Allocation Map*. London: Routledge.
12. Kowalczyk, R. (2011). Samorząd terytorialny jako uczestnik komunikacji społecznej. *Przegląd Politologiczny*, No. 4,
13. Marciszewska, B., Studzieniecki, T., Wanagos, M. (2017). Tourist Arrivals in Poland and Regional Development – A Case Study of the Pomerania Province. *Economic and Social Development (Book of Proceedings)* (pp. 648–666), 26th International Scientific Conference on Economic and Social Development, Zagreb, Croatia.

14. *Model współpracy administracji publicznej i organizacji pozarządowych* (2019). Retrieved 15.01.2019 from: [www.pokl541.pozytek.gov.pl](http://www.pokl541.pozytek.gov.pl).
15. Pollard, A., Court, J. (2008). How Civil Society Organizations Use Evidence to Influence Policy Processes. In: A.J. Bebbington, S. Hickey, D.C. Mitlin (eds.), *Can NGOs make a difference? The Challenge of Development Alternative*. (pp. 133–152) London & New York: Zed Books. Retrieved 10.01.2019 from: <https://biblio.flacsoandes.edu.ec/libros/digital/52467.pdf>.
16. *Poradnik. Na czym polega współpraca merytoryczna administracji z organizacjami pozarządowymi* (2019). Retrieved 15.01.2019 from: <https://poradnik.ngo.pl/na-czym-polega-wspolpraca-merytoryczna-administracji-z-organizacjami-pozarzadowymi>.
17. *Programy współpracy. Poradnik* (2019). Retrieved from 4.03.2019 from: <https://poradnik.ngo.pl/programy-wspolpracy>.
18. Przybyszewski, R., Atamańczuk, K. (2011). *Administracja publiczna w wymiarze społecznym i humanistycznym. Założenia, teraźniejszość i przyszłość*. Toruń: Wydawnictwo Adam Marszałek.
19. Rados, D.L. (1996). *Marketing for Nonprofit Organizations*. London: Auburn House.
20. Rymśa, M., Frączak, P., Skrzypiec, R., Wejcman, Z. (2007). *Standardy współpracy administracji publicznej z sektorem pozarządowym*. Warszawa: Instytut Spraw Publicznych.
21. Ziółkowska, A., Gronkiewicz, A. (2012). Współpraca administracji samorządowej z organizacjami pozarządowymi jako forma współdziałania jednostek samorządu terytorialnego z podmiotami niepublicznymi. In: C. Dolnicki (ed.), *Formy współdziałania jednostek samorządu terytorialnego* (pp. 35–51). Warszawa: Wolters Kluwer Polska.

## DEVELOPMENT POTENTIAL ANALYSIS OF RURAL TOURISM IN THE SAMOBOR AREA

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### **ABSTRACT**

*The purpose of this paper is to explore the potential development of rural tourism by providing an example of an existing accommodation facility located in Samobor hillside. The aim is to introduce a new tourist offer for visitors and recommend an improvement of resources to revive the existing facilities. The existing house requires renovation and expansion of accommodation capacities. Cooperation with other tourist facilities is one of the solutions to the problem of attracting more visitors. Animation in tourism has become increasingly important element of tourist offer, therefore authors recommend various animation programs through celebratory and fun activities, as well as active vacations for those who want to spend quality time in a natural rural environment. The financial resources needed for conversion, its resources, as well as the allocation processes are described in the paper. The paper also explores the other existing infrastructure near Samobor area, as a possible form of competition. Research methods used in this paper are; desk research, analysis, synthesis and quantitative empirical research. Survey conducted in this paper aims to identify the perception of the local population and visitors about their awareness and views regarding rural tourism in Samobor hillside. The research results indicate that various accommodation facilities and current tourist offers should be improved in order to offer specific autochthonous amenities and tourist attractions. The tourists should be offered a unique form of relaxation, refreshments and revitalization providing new experiences in compliance with requirements of rural tourism development.*

**Keywords:** *animation in tourism, rural tourism, Samobor hillside, tourism development*

### **1. INTRODUCTION**

The Republic of Croatia has a prerequisite for the development of rural tourism and all special forms of tourism related to rural areas, but its potential is not fully utilized. Rural tourism is a common name for various activities and forms of tourism developed in rural areas. It is accomplished within natural and cultural resources in rural areas, which enable numerous tourist activities and form a large number of different forms of tourism.

The importance of rural tourism is reflected in a strong interaction with agricultural production, production of traditional products, traditional gastronomy and tourist services. Rural tourism in Croatia is currently based on the natural and cultural resources and has begun its development in recent times. With the development of rural tourism, Croatia could provide visitors with much more than the sun and the sea, as well as tourism that takes place on the coast. Animation in tourism, its development, as well as the development of rural tourism and all its forms that are currently present in the area of the research, are identified in this paper. The aim of this paper is to analyze the features of Samobor and Zumberak area in order to improve rural tourism. An example of an existing vacation home shows many opportunities and different types of activities that an existing infrastructure in the continental part of Croatia can provide. An example of the revival of an existing vacation home could encourage others to consider this type of tourism, to take advantage of their own farms, family businesses and domestic products, for the purpose of their own promotion, as well as for the promotion of the whole region. The development of rural tourism in Croatia that is rich in natural resources and tourist attractions, would be of great importance for an extension of tourist season to all year-round tourism too. Given that today's visitors tend to travel for healthier and individualized holidays, while trying to avoid mass tourism, crowded destinations, the rural tourism and vacation houses are an ideal way to spend time in preserved and clean natural environment. In order to fulfill the needs of tourists for active and healthy entertainment while enjoying nature and landscape, animation programs should be created in compliance with rural tourism characteristics.

## **2. ANIMATION IN TOURISM**

Animation programs are offered to tourists in order to experience the tourist destination or the expected program. All programs, including animation programs, are constantly changing according to the changes caused by the development of science and technology. Today's models of development and potential contents of the development of the tourist offer are based on the wellness contents and the whole system of maintenance and encouragement of maintaining the health and physical harmony of the human body and the nature surrounding it (Cerović, 2008, page 19). "Tourist animation, as part of a tourist offer, is defined as a set of services that meet the needs and wants of tourists to experience the expected and desired tourist program, through which the organizer of the program increases the tourist consumption"(Cerović, 2008, page 19). Animation services accomplish the set goals only in conditions of market valorization in the tourist market, in order to meet the needs and motives of tourists. Market-valued animation service is essentially accomplished through marketing activities. The application of marketing in tourism animation is specific to the application of marketing in other market valorizations of other tourist, catering services and products. Market valorizations of animation programs, in a selective tourist market, makes the marketing skills and its common concepts an important and necessary knowledge of every manager who deals with tourist animation. Animation in tourism, as a tourist offer system, plays an important role in meeting the needs and motives of tourists, in order to provide expected experience in their chosen tourist destination (Cerović, 2008, page 15).

### **2.1. Goals of animation in tourism**

The sun and the sea remain the most important motive (82% of visitors come exclusively for this motive), according to Zdenko Cerović. In spite of that, increasing number of tourists have other motives that enable them to experience new tourist attractions. There are two main goals of tourist animation; tourist satisfaction and tourist spending. Animation programs are an important part of tourism services and this makes them a valuable aspect of tourism expenditure. If the needs and expectations of tourists are satisfied the expenditure increases (Cerović, 2008).

By developing a tourist offer, food and accommodation are no longer a motive for tourists to change their place of residence. In addition to meeting the primary needs, the tourist expects a better and more attractive tourist offer in every new trip, which besides basic needs, will meet the needs for socializing, fun and feeling of belonging. A tourist is looking for a service that will provide him with a unique experience and in some way achieve goals and meet all needs. The goals of animation are to satisfy the needs of the guests for entertainment and recreation, increase the consumption spending therefore increasing the hotel's income and influencing the awareness of tourist workers (Bošković, 2015).

### **3. RURAL TOURISM**

According to Ružić, the rural area is defined as a place outside the urban environment with a low concentration of inhabitants, dominated by occupation of agriculture, characterized by a special social structure (customs and rural identity). “The rural area can also be defined as an area whose economic development is based on traditional agriculture, which is beyond the influence of larger towns and cities, directly affecting their development. The characteristics of rural areas have different landscapes; mountains, valleys, rivers, lakes etc” (Ružić, 2012, 4,9). Apart from the above definitions, rural tourism can be characterized as a form of tourism that implies the occasional stay of tourists in rural lifestyle. It also offers participation in the holiday and cultural ceremonies, carnival customs and other events (Čavlek & Vukonić, 2001, page 54). Rural tourism forms are agritourism or rural tourism, residential tourism, national or nostalgic sports, recreational tourism, adventure tourism, health tourism, cultural tourism, religious tourism, hunting tourism, fishing tourism, gastronomic tourism, wine tourism, nature tourism, education tourism, camping tourism, nautical tourism and mixed and other forms of rural tourism.

### **4. NATURE PARK ZUMBERAK**

Tourist activity in Zagreb County has recorded positive results in recent years. In the last few years investment was made to improve the quality and expansion of accommodation capacities, various development projects, especially in the rural tourism. Potential for tourism development is based primarily on attractive natural and cultural heritage, parks, wine roads of Plesivica and Zelina, cultural and historical attractions. Particularly valuable natural tourist resources of the county include Naftalan sanctuary, nature parks Zumberak and Medvednica, zoo Varoski lug and ornithological reserve Crna Mlaka. ([https://www.zagrebackazupanija.hr/static/files/misc/dokumenti/2014/zupanijska\\_razvojna\\_strategija.pdf](https://www.zagrebackazupanija.hr/static/files/misc/dokumenti/2014/zupanijska_razvojna_strategija.pdf) 3.4.2018.). The largest hillside area of Samobor occupies the protected nature park Zumberak. As an idyllic historical and climatic place in the vicinity of Zagreb, Samobor is developing as a retreat and a summer resort. Baths and health resorts are built on Vugrinscak and Smidhen, the promenade at Anindol and numerous catering facilities. Samobor aims to develop in two main directions: production economy (food, glass, porcelain, textiles, etc.) and tourism industry (Jakopec, 2011). Zumberak and Samobor mountains represent an area of high natural and cultural value, a landscape created by natural processes over millennia and shaped by centuries-old human activity. These values were recognized at the national level and this area was declared by the Croatian Parliament as a nature park on May 28, 1999, when the boundaries of this protected area were determined. Within the boundaries of the Park there are three specially protected sites; special reserve of forest vegetation Japetic, a significant landscape of Slapnica near Krasic and park - the forest zone of Okic city. Thanks to the rural lifestyle, the landscape of Zumberak and Samobor hillside is decorated with numerous rural settlements, preserved traditional infrastructure and architecture. There are 14 destinations in the Zumberak Nature Park that visitors can explore. Each destination is rich in cultural and historical customs, heritage, educational paths, panoramic views, indigenous specialties also suitable for certain activities - cycling, climbing,

mountaineering and paragliding. Within the Park, tourists can visit destinations Budinjak, Japetic, Kupcina Zumberacka, Mrzlo Polje – Gornja Vas, Okic, Plesivica, Radatovici, Slani Dol, Slapnica, Sosice, Stojdraga, Sveta Gera, Vivodina i Zecak. (<http://www.park-zumberak.hr/dogadanja.html> 4.4.2018.). In addition to sports and recreational there are also educational activities, these are the "Thousands of cuisine" - workshops of prehistoric, Roman, medieval and traditional Zumberak cuisine, educational program "Young guardian of nature" designed for children (<http://www.park-zumberak.hr/aktivnosti.html> 4.4.2018.).

## **5. ANALYSIS OF AN EXISTING ACCOMMODATION FACILITY**

A holiday house can be defined as a multi-functional facility that is available to guests at their own leisure. This facility provides guests with accommodation services, preparation and consumption of food, use of garden, with possible animation and educational contents. The attractiveness of space is determined by the degree of enthusiasm that visitors have experienced during their stay (Ružić, *Analiza posebnosti i percepcije ruralnog turizma Istre*, 2012). The existing holiday house is located in the Samobor hillside area, across the border of the Zumberak Nature Park, in the village of Greguric Breg, and is 5 km away from the city center of Samobor. Above the holiday home, the Mountaineering Home Ivica Sudnik is located 2 km away in Veliki Dol, 530 meters above the sea level. The size of the main building is 240 m<sup>2</sup> of enclosed space and 200 m<sup>2</sup> of balcony and terrace. The house consists of three floors - basement, ground floor and first floor. In the basement there is a bar with and open fireplace, a room for socializing and sanitary facilities. The room can accommodate up to 30 people and contains all the necessary food and beverage, utensils, tables, chairs and other necessary appliances, and is decorated in a traditional style. At the basement level there is a large terrace located below the pergola of the vine and a covered outside bar with barbecue and cooling cabinets, outdoor and indoor showers and a space reserved for a sauna that is currently not in use. Next to the terrace is the water garden with wooden bridge. On the ground floor there is a large room that combines a kitchen with an open bar, a dining room and a living room with a fireplace. On the ground floor there is also a bathroom and an entrance hall which represents the main entrance to the house and a spacious terrace with a beautiful view of the surrounding green hills and neighboring Slovenia. The ground floor of the house consists of an apartment decorated in an autochthonous hunting style. Upstairs there are 3 bedrooms and bathrooms. The house has a total capacity of 15 beds. The garden is 10 000 m<sup>2</sup> and includes forest, stream, natural resources, blackberries, orchards, a plot with 200 shrubs of continental lavender, garden, meadow for the construction of bungalows, parking and a private chapel. A chapel of 17 m<sup>2</sup> is dedicated to the "Heart of Jesus". Every year, the feast is traditionally celebrated by the Holy Mass bringing together the local population, as well as other friends and acquaintances.

### **5.1. Vision and mission**

The vision of a holiday home is to expand the accommodation capacities in order to provide accommodation for as many potential visitors as possible. To achieve external cooperation with other facilities in order to promote a holiday home, become recognized in the rural tourism market, present the opportunities and potential of the existing facility to the public. The mission of the holiday home is to meet the needs of future visitors and provide them with a safe and comfortable stay. Through organized educational excursions they are introduced to the culture of the region enabling them to participate in producing home-made products, such as jams and blackberry liquors, picking lavender, making scented bags, gardening, harvesting fruits, planting vegetables as well as other activities in the fresh mountain air. The goal is to provide visitors with an adequately equipped meeting facilities for conferences, workshops and events.

The future employees of the facility are encouraged to emphasize their creativity, practice teamwork, express ideas and fulfill their assignments. Their work ethics and dedication should gain the trust of future visitors as well as future employees.

### **5.2. Expansion of accommodation capacities**

Accommodation capacities would be expanded by the construction of 4 bungalows. Each bungalow would have a sleeping area with 4 beds, which would be in the attic. On the ground floor of the bungalow there would be a living room with an open fireplace, a kitchen and a bathroom. Each bungalow would have a terrace with a view of the surrounding hills and a small garden for recreational land cultivation. Bungalows would have television and internet access. All visitors could freely use the reception room for socializing and workshops located in the main building, a short walk away from the plot with bungalows. By building a bungalow, the accommodation capacity would be able to accommodate 16 beds more and would have a total of 30 beds for future visitors. On the plot intended for the construction of bungalows, the bases for 1 bungalow were in the process of construction, but the construction was suspended due to lack of funds. The sources and methods for financing the expansion of accommodation capacities and the renovation of the existing house are described in detail in the further part of the paper.

### **5.3. Competition**

Facilities within the Nature Park are hiking huts, picnics, rural households, renovated old mills, areas for Robinson tourism, and their contents can be a potential competition for the existing holiday home. The listed facilities are located on the official tourism hospitality list of Zumberak Nature Park – Samobor hillside. There are a total of 10 mountain huts that number about 280 beds in the park that are open on weekends, on holidays and as needed for larger organized excursions and meetings. The park has 5 picnic sites with the total of 24 beds and are open every day or by arrangement. Excursions offer homemade food and wine, possibility of overnight accommodation, celebrations, off-road rides, bio-farming, organized two-day excursions and picnics in nature. In addition to the facilities of the Park, there is 1 hostel with 20 beds that is open daily. In Nature Park there are 6 rural houses for rent that represent direct competition to an existing holiday home. The listed houses offer the following; 3 houses have 4 beds, 1 house with 6 beds, 1 house with 10 beds and 1 house with 12 beds, while the existing house has a maximum potential of 15 beds and an advantage over the listed competitive holiday houses. These competitive holiday homes are fully equipped, and there is a possibility of renting a bicycle at a surcharge. Rural holiday homes in the Park do not provide organized animation content or activities for their visitors, but they themselves decide what to do with their free time. Accommodation prices vary depending on the nature of the occasion, the number of visitors, the number of overnight stays and the use of additional contents. Prices range from 350 to 3,000 kunas per day. Of the above-mentioned holiday homes, the closest competition house is 15 kilometers away by car from an existing holiday home, while other competing holiday homes are between 30 and 60 kilometers away.

### **5.4. External cooperation**

External cooperation with other facilities is used to promote and position a rural vacation home on the market. In addition to promoting and acquiring certain recognizability, external cooperation provides mutual benefit to all participants who are part of the co-operation. The existing holiday house would work together with the Ivica Sudnik mountaineering home, located near the holiday home and the House of Tabor, located in center of Samobor. Mountaineering house Ivica Sudnik is located at 530 m above sea level and is owned by the town of Samobor. The house has 40 beds and it offers food and beverage services.



It's opened on the weekends or as needed for mountaineers and organized excursion groups. The external cooperation of the existing holiday home and hiking house would be realized through recreational activities for visitors outside the house, which include bicycle riding, hiking, recreational walking and educational trails for children and adults. Trails and marked roads would allow visitors to head to hiking house where lunch, various workshops, socializing, sleeping and other activities would be organized. Meeting House of Tabor organizes spiritual retreats. Since the private chapel dedicated to the "Heart of Jesus" is located on the property, the external cooperation would be achieved by organizing suitable masses and rituals for all visitors to Tabor. Various workshops and spiritual retreats in the natural environment would be held, and visitors could socialize in the reception room. The holiday house would also benefit from accommodating Tabor visitors.

### **5.5. Animation programs and activities for visitors**

Animation programs and activities for future holiday house would offer trimming and cultivating blackberries, making jams, liqueurs, ice cream, cakes, picking lavender and making fragrant lavender bags and lavender candies, gardening, planting, picking vegetables, planting flowers, picking fruits in the orchard, harvesting and deciphering mushrooms, harvesting and learning about medicinal herbs, making walnut brandy, cooking local specialties and making home made cheese and cream. Decorating antique decoupage furniture, creative workshops for drawing and knitting, organizing poetry and haiku meetings and team building would be held in the reception area. Recreational activities outside the circle of the holiday home would include biking, hiking, recreational walks, educational trails for children and adults, while the facilities for children would be knitting knots and camping. Religious contents would be prayers in the chapel, the Holy Masses, wedding ceremonies, christenings and confirmations. It is necessary to ensure the quality and safe implementation of these programs for the purpose of mutual satisfaction. Visitors can freely propose their type of activity, which is not listed, and the implementation of activities can be assessed in accordance with available facilities.

### **5.6. Financing**

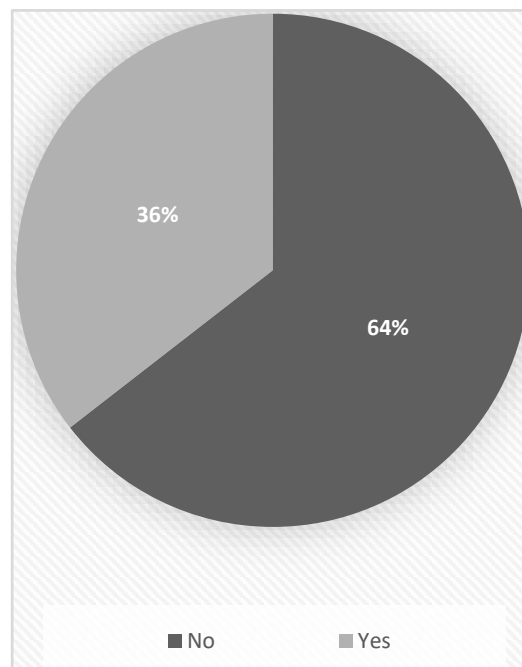
Vacation home requires large financial investments in order to be competitive and modernized. Building bungalows would require two different financial sources both private financial investment and European Union's financial grant. Eurokonzalting is a leading Croatian consultancy company based on the number of approved EU projects. One of measures that Eurokonzalting implemented is a grant for rural tourism amounts to 75,000 €. In the 2014-2020 programming period of the European Union Croatia has been allocated EUR 2.026 billion for agriculture and rural development. Measure 6.2 and Measure 6.4 allow farmers to receive grants to start a new non-agricultural activity in the rural area. The aim of this measure is to stimulate a development of rural tourism, but also the sustainable development of rural areas. The measure is intended for people or companies that are at least or mostly engaged in agriculture and at the same time want to start some non-agricultural activities - mostly holiday homes (<http://www.eurokonzalting.com/index.php/bespovratna-sredstva-i-krediti/item/106-bespovratna-sredstva-za-ruralni-turizam-u-iznosu-do-75-000> 6.4.2018.). The need for additional capacities in all forms of accommodation is increasing every year leading to an additional expansion of both quality and quantity of services. The trend of accommodation in the rural areas, in places and villages away from the city and crowds, is increasingly popular. The tender for this measure and funds was announced at the end of September 2017 and provides an excellent opportunity for the reconstruction, expansion and construction of an existing holiday home.

## 6. EMPIRICAL RESEARCH

Empirical research is based on a survey questionnaire conducted through social networks and in Samobor Tourist Board, in order to compare and analyze the perception of the local population with the opinion of potential consumers from other communities about rural tourism development in Samobor hillside. The purpose of the survey questionnaire is to collect information concerning opinion, attitudes and preferences of the respondents from the survey on rural tourism in the Samobor hillside. The questionnaire contains a total of 12 questions and is completely anonymous, in order to protect the identity of all respondents. The survey questionnaire was conducted in the period from May 2 to May 16, 2018, and a sample of 130 respondents was collected.

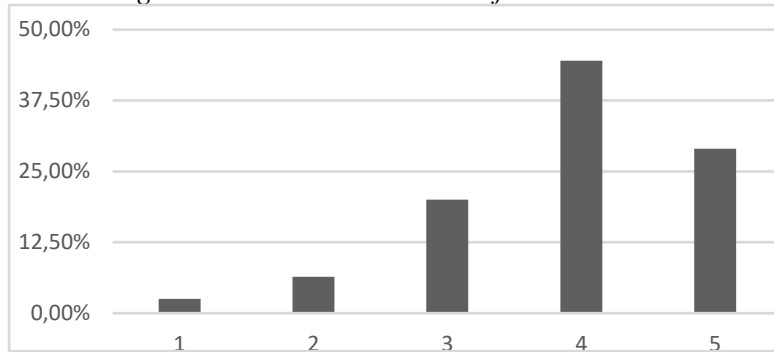
### 6.1. Research results

A survey questionnaire was completed by a total of 130 respondents, of which 20 questionnaires were filled in the Tourist Board of Samobor, while the remaining 110 were filled through social networks. In the further review of the results, the results are analyzed. Out of 110 respondents through social networks, 86.4% are female, while 13.6% are male. The age groups range includes those younger than 18, followed by 18-25, 26-35, 36-45, 46-55 and over 56 years. Of the above-mentioned groups, most of the respondents (90%) range in between 18 to 25 years of age. In the age group 26 to 35, there were 3.6% respondents, followed by 2.7% in the age group 36 to 45, 0.9% in the range 46 to 55, 0.9% above 56 and 1.8% under the age of 18. Majority of respondents come from Zagreb County (22.7%), followed by Varazdin County (19.1%), Koprivnica – Krizevci County (11.8%), City of Zagreb (10%), Međimurje County (6.6%), Krapina-Zagorje County (4.4%), Split-Dalmatia County (3.3%) and the rest from other Counties. Majority of respondents never visited Samobor hillside – Zumberak (64.5%) while only 35.5% of the respondents did.



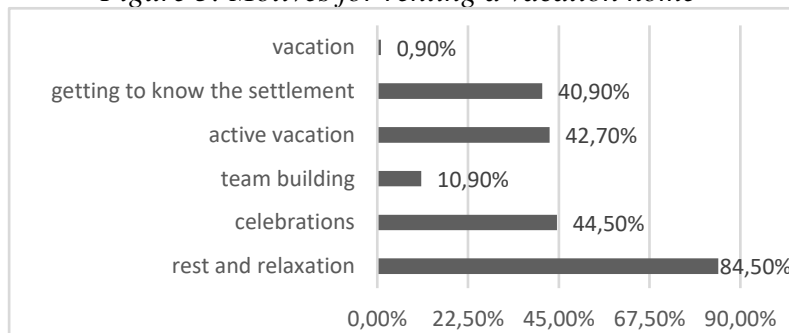
*Figure 1: The visit to the Samobor hillside – Zumberak  
Source: created by authors*

The attractiveness of rural tourism is graded on a scale from 1 to 5. Majority of respondents find rural tourism attractive as presented in the figure 2.

*Figure 2: The attractiveness of rural tourism*

Source: created by authors

Amongst respondents, 77.0 % never rented vacation home while only 44.0% did. The motives to rent vacation homes are mostly associated with rest and relaxation (84.5%) while the second motive included various celebrations (44.5%).

*Figure 3: Motives for renting a vacation home*

Source: created by authors

The activities that the holiday house provides to respondent are activities such as picking blackberries and making jams, liqueurs, ice cream, cakes, harvesting and deciphering medicinal herbs, preparation of herbal tea, liqueurs and brandy, cycling, hiking, recreational walks, educational paths for children and adults and camping. The top three desired activities are recreational walks, cycling and other forms of active vacationing. In addition to the mentioned activities, the respondents could also propose some new types of activities. Some of the suggestions were art and literary workshops, swimming, riding, hunting and fishing, table tennis and darts, running and animal care. Whether a rural vacation house should have access to the Internet 79.2% of respondents consider it necessary, while the other 41.8% do not.

## 6.2. Discussion

Rural tourism is a vital selective form of tourism for rural part of Croatia. Samobor hillside is situated close to city of Zagreb and is a popular tourist site for weekend trips for neighboring inhabitants. It is becoming increasingly popular for visitors who come from continental but also southern Croatia. In order to enhance and improve attractiveness amongst local visitors, domestic and foreign tourists the improvement of animation infrastructure in the whole region is needed. Through analysis of the holiday house in this paper, authors provide a guideline for other similar houses, accommodation and hospitality facilities in the area. With the use of EU funds many holiday houses could be build, renovated and expanded with a purpose of offering unique rural experience as well as improving the wellbeing of tourists by utilizing the nature, mountains, fresh air and activities related to it. The animation programs offered as an additional tourist service in a holiday house could be adopted by other similar forms of accommodation

and contribute to further development of rural tourism in the area. With appropriate marketing mix elements, infused with experience marketing of animation activities, rural tourism could attract more tourists. The empirical research results indicate that there is a need for such animation programs because there is a recognition by potential users of services and there is a potential to visit such places. Majority of respondents did not visit Samobor area yet, but they are interested in different forms of rural tourist services and activities. The potential of rural tourism is obvious and needs further development in the particular area of Samobor. Rural tourism is an important selective form of tourism for the rural part of Croatia.

## 7. CONCLUSION

The advantage of rural tourism is that it has a great potential by offering hospitality services in old existing holiday houses, which can be renovated for the purpose of implementing rural tourism and providing traditional products, home-made dishes and learning old crafts. This increases accommodation capacities and revives households, without the need for new and additional construction. Rural tourism provides coexistence with nature, the revival of forgotten crafts and customs, a shift away from everyday obligations and provides a quality holiday in nature. In rural tourism, the relationship between nature and the rural population is preserved, developing a sense of tourism independently, with modest tourist knowledge. Rural tourism in Croatia is promising because of its untouched natural beauty and diversity of the flora and fauna. The natural environment is pleasing, giving peace to any visitor who opts for this type of tourism. The results of the survey questionnaire indicate that many people are interested in this type of vacation and that rural tourism is attractive to them. Rural tourism needs to be developed and improved in order for its quality and diversity to be able to compete with sea, sun and sand tourism. It is evident that Croatia offers various projects, investments and development funds providing the opportunity to start and support a rural type of tourism. Rural tourism in Croatia has the potential that should be utilized and further expanded to provide visitors with new form of vacation.

## LITERATURE:

1. Bošković, M. (2015.). Značaj animacije u turizmu. Preuzeto 5. veljča 2018. iz [http://www.fms-tivat.me/download/spec-radovi/Maja\\_Boskovic.pdf](http://www.fms-tivat.me/download/spec-radovi/Maja_Boskovic.pdf)
2. Cerović, Z. (2008.). Animacija u turizmu. U Z. Cerović, Animacija u turizmu. Opatija.
3. Čavlek, N., & Vukonić, B. (2001.). Rječnik turizma. Zagreb: Masmedia.
4. Eurokonzalting:  
<http://www.eurokonzalting.com/index.php/bespovratna-sredstva-i-krediti/item/106-bespovratna-sredstva-za-ruralni-turizam-u-iznosu-do-75-000> (6.4.2018.).
5. Jakopec, L. (2011.). U D. Feletar, N. Buzjak, I. Dujmović, P. Feletar, Ž. Holjevac, R. Ibrišević, i dr., Samobor - zemljopisno - povijesna monografija. Samobor: Meridijani.
6. Ružić, P. (2012.). Analiza posebnosti i percepcije ruralnog turizma Istre. Preuzeto 14. veljača 2018. iz file:///C:/Documents%20and%20Settings/PC.PC-808E0ED094C6/My%20Documents/Downloads/17\_Ruzic.pdf
7. Ružić, P. (2011). Ruralni turizam Istre. Pula.
8. Zagrebačka županija:  
[https://www.zagrebackazupanija.hr/static/files/misc/dokumenti/2014/zupanijska\\_razvojna\\_strategija.pdf](https://www.zagrebackazupanija.hr/static/files/misc/dokumenti/2014/zupanijska_razvojna_strategija.pdf) (3.4.2018.).
9. Žumberak – Samoborsko gorje. Aktivnosti. <http://www.park-zumberak.hr/aktivnosti.html> (4.4.2018.)
10. Žumberak - Samoborsko gorje. Događanja. <http://www.park-zumberak.hr/destinacije.html> (4.4.2018.)



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