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# Economic and Social Development

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

## Book of Proceedings

Editors:

Mario Konecki, Irena Kedmenec, Abey Kuruvilla



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## THE ACTIVITIES OF A ATTORNEYS IN THE ASPECT OF LAW, ECONOMICS, SOCIOLOGY

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### **ABSTRACT**

*In the article, the authors describe the need to study the advocacy community in the framework of law, economics and sociology. The changing role of law in society is a trend in recent years. It is manifested not only in the expansion of state regulation into new areas of activity, but also in a noticeable increase in responsibility for non-compliance with legal requirements. Law enforcement practices play a significant role in this process. In these conditions, the role of lawyers should increase, lawyers act as legal representatives of the interests of citizens and are called upon to protect their interests. Using the American legal system as an example, the authors show that lawyers occupy significant posts in the economy and the state-political mechanism. From the point of view of sociology, the authors show that the main reason for the insufficient knowledge of the activities of lawyers in sociology is the closed nature of this group. The study of the legal community is important in the framework of the concept of professionalism. The interest in the activities of lawyers in sociology is dictated by the fact that they, like no other group, are between the choice of personal gain and professional ethics or professional responsibility. Traditionally, in public opinion, lawyers are considered, on the one hand, as professionals in their field, but, on the other hand, as professionals who are solely concerned with obtaining financial gain. An empirical study illustrates the heterogeneity of the advocacy community and commitment to professional ethics. The article presents the results of a qualitative study.*

**Keywords:** *benefit, lawyer, lawyer community, professional ethics, professional responsibility*

### **1. INTRODUCTION**

Advocates are a fairly elitist professional community. It's important to research the activities of a lawyer in the context of three sciences - law, economics and sociology. It's logical that advocacy takes grounds in the legal sphere. The changing role of law in society is a trend in recent years. It is manifested not only in the expansion of state regulation into new areas of activity, but also in the strengthening of responsibility for non-compliance legal requirements. Law enforcement practices play a significant role in this process. In these conditions, the role of lawyers who act as legal representatives of the of citizens interests and protect their should objectively increase (Kazun, 2015, p.3). In 2019, the advocates community in Russia celebrated the 155th anniversary. The transformation of the economy and society last 25 years has led to increase in the number of the law firm and to a high heterogeneity of this professional community. If we talk about the place of advocacy, it's opposed to the investigation, the prosecutor's office and the court, which are state structures. The advocacy community exists as an independent and self-governing structure. The advocacy is a sub-institution of law, but the professional community of lawyers aren't included in the system of state and local governments. Despite this, advocacy is tasked, which reflect the public interest of society and have state significance (Kucherena, 2009. P.43). The main task of lawyers is to provide qualified legal assistance to citizens in order to protect their rights, freedoms and interests, and

also as ensuring access to justice. S. A. Saushkin and other scientists consider as advocates task the protection of the rights of law-abiding citizens, organizations, public associations from arbitrariness of officials, abuse of the right, illegal deprivation or restriction of the rights and freedoms (Saushkin, 2010). Compared with practicing lawyers, advocates have more precise standards of competence and professional ethics. Each lawyer has a mandatory membership in the regional chamber, due to its formal status, this group of the legal community becomes one of the most accessible for sociological research. For comparison, briefly consider some of the features of advocacy in the American legal system. Here to the lawyer are presented rather high requirements are imposed not only from a position of professionalism. There is no doubt that a lawyer must have brilliant professional knowledge. But there are also high requirements to his appearance. So, in one of the law firms such a rule: «the Law firm is no exception: «If you join our firm we hand you a check for five thousand. We prefer that you spend the bulk of it on a new wardrobe. After seven years of jeans and flannel shirts, your inventory of suits is probably low, and we realize it. Appearance is very important to us. We expect our attorneys to dress sharp and conservative. There's no dress code, but you'll get the picture». (Gulyaeva, 2009).

## 2. CHAPTER 2

In the article we do not aim to analyze the activities of the advocates from the standpoint of Economics in the context of economic problems. It is important for us to show that lawyers can have a high social status not only in the legal system, but also in the economic one. Given example. In the complex legal system of the United States, the high role of legal regulation of society predetermines the exclusive place of the legal class in comparison with other professional groups. Lawyers hold key positions in the economy and the state-political mechanism. Americans believe that the legal profession is one of the three most prestigious specialties. The right to the assistance of a lawyer is a significant social good, which predetermined its consolidation at the constitutional level. The 6th amendment to the U.S. Constitution States reads: «In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense»<sup>1</sup> (The Constitution of the United States). And finally, we consider the activities of representatives of the legal sphere in the context of sociology. It is rarely studied by sociologists. An exception is a case study of Russian judges (Volkov et al., 2012). The lawyer community is usually analyzed within the legal sciences, which is quite natural. The main reason for the insufficient study of the activities of lawyers in sociology is that it is a closed professional group. Access to it for research is significantly limited. This is determined by the privileged status of lawyers in the legal community. In addition, the bar associations don't belong to state authorities or law enforcement bodies. But, nevertheless, the features of the activities of the advocate of activity, as well as the portrait of a professional, including personal characteristics, are of great interest to sociology. Advocates communities, like any other legal communities, are studied within the framework of the concept of professionalism (Kazun, 2014). Here, the focus is not on the logic of the market (as in business organizations) and not the logic of bureaucracy (as in government organizations), but the so-called “third logic.” This idea is held by E. Freidson (Freidson, 2001). The purpose of advocacy communities is to find a balance between the tasks of the market and the bureaucracy. As indicated by A.P. Kazun and A.A. Yakovlev, in sociological knowledge, the activities of lawyers are interpreted from the point of view of the terms «contract»/ «agreement», which is formed between society and the professional community.

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<sup>1</sup> <https://www.archives.gov/founding-docs>

According to this «agreement», society gives high status regalia, including a privileged position, and the professional community undertakes to observe professional ethics. Such an approach is presented in the work of J. Evetts (Evetts, 2005, p. 400). According to M. Saks, the need for this «agreement» is due to the fact that both society and the professional community are not able to fully control the quality of work of professionals (Saks, 1995). The interest in the activities of advocates in sociology, from our point of view, is dictated that they are between the choice of personal gain and professional ethics or professional responsibility. In the work of A.V. Akopyan, who is dedicated to managing the process of forming the professional identity of lawyers, presents this dichotomy. The author points out that the activities of lawyers are at the intersection of interests, rights and freedoms. To receive their winnings, the client is often ready to abandon moral and ethical principles. An attorney may be in solidarity with the client, defending him. A.V. Hakobyan points out that in case of refusal of ethical grounds, the lawyer has more opportunities to show true devotion to the interests of the client (Akopyan, 2009, p.19).

### 3. CHAPTER 3

It should be noted that, traditionally, in public opinion, advocates are considered, on the one hand, as a highly professional social group, but, on the other hand, as professionals who are exclusively concerned with obtaining financial benefits. However, empirical studies show a different picture. Russian advocates, as a professional community, are certainly diverse. A study by the Institute for the Analysis of Enterprises and Markets at the Higher School of Economics and the Institute for Law Enforcement at the European University in St. Petersburg confirms our conclusion. The authors of the research typified respondent advocates into several groups (Kazun et al. 2015, p. 53):

1. «Idealists». They are the most loyal profession professionals, because for them the high reputation capital in the professional community and high status in the law enforcement system as a whole are important. It is this circumstance that serves to ensure that the «idealists» will not protect the criminal. The idealistic orientation also focuses on the fact that it is difficult for them to leave the profession in order to obtain a more profitable job.
2. «Pragmatists». For lawyers of this group, the professional community is less a guideline. Their opinion that it is difficult to remain honest while working in the existing human rights system is indicative. This group of advocates is ready to protect criminals. They tend to use «loopholes» in laws, can focus on an official document, moving away from the search for truth.
3. «Skeptics». A distinctive feature of this group of advocates is a criticism of the state of the law enforcement system and the state of the advocates community. This group of advocates is characterized by an unpreparedness to protect criminals. It is significant that they also do not seek personal gain in the profession.
4. «Individualists». This group of lawyers doesn't need to have a high reputation in the professional legal community. But a feature of this group is that they do not criticize the human rights system.

The following table shows a theoretical generalization of the typology of advocates based on questions about professional ethics (table 1).

*Table following on the next page*

*Table 1: Typology of advocates in accordance with the research of attitudes to professional ethics*

Types of orientation	Idealists	Pragmatists	Skeptics	Individualists
Focus on the opinion of the professional community (colleagues)	High marks	Average marks	Low marks	Low marks
Assessment of the role of the enforcement system	High marks	Low marks	Low marks	High marks
Focus on personal gain, achieving results	Low marks	High marks	Low marks	Average marks

So, for the thesis «A professional lawyer should, first of all, think about his income, and only then about the benefit of the client», the following distribution was obtained: «idealists» - 0%, «pragmatists» - 9%, «skeptics» - 0 %, «Individualists» - 5%. But, nevertheless, as it seems to us, they are more focused on professionalism, on professional responsibility. The reason for this is partly because they have to go a fairly long career path. Confirmation of this can be found in the study of the above independent research centers. The study was conducted from October to December 2014. Questionnaire survey was used as the main method. In a sample of 35 regions of Russia, 3317 advocates were interviewed (Kazun, 2015). The data obtained allow us to see that the path to the advocacy was laid during the investigation (every fifth advocate), the prosecutor's office (every eighth), law enforcement agencies (11.8% of respondents), legal adviser in commercial firms (every fifth advocate), lawyer in government organizations (one in eight respondents), at a university or while doing science (4.1% of advocates), in the Ministry of Justice (2.8% of advocates), in notaries (1.1% of advocates), in courts (2.6% respondents), in the apparatus of the courts (8.4% of respondents). These figures clearly demonstrate that advocates most often already had experience in legal activity, which allowed them to take up advocacy. Not only this circumstance allows us to talk about the priority of professional responsibility in the activities of advocates. It seems to us that the features of the Russian mentality, which is more or less oriented towards justice, are important. The fact that Russian advocates don't always make a choice in favor of their own benefit, but in favor of professional responsibility, is evidenced by the results of a qualitative study. Here is a part of the expert interview conducted by the author in September 2019. The experts were advocates working in Novosibirsk. The survey involved 3 experts working at the Law Office. Requirements for experts: membership in the Chamber of Advocates, experience as a lawyer - at least 5 years. When we asked to tell the most memorable examples from our law practice, one of the experts noted the following. "The sphere of activity of the lawyer today is much wider than formal powers. You often orient your clients towards a negotiation strategy. This is not always beneficial to the lawyer himself, even from a financial point of view. But, nevertheless, you justify that it would be more correct to come to an agreement and find compromises than to focus on court decisions. This is the right decision, even in the most tense relationships with contractors. That is, a advocates acts as a mediator"(A., experience as a lawyer for 5 years). As you can see, the focus is not on financial gain, but on the client's orientation toward building lost positive relationships. This is also a defense of the interests of the client, but from the standpoint of ethical expediency. Attorney S., with more than 5 years of experience as an attorney, has a similar opinion. According to the attorney, "Advocacy is not entrepreneurial, because the primary goal pursued by attorney is to help people. We strive to help, not make money. There are very wealthy attorneys, but this doesn't mean that we only think about the fee. First of all, we listen about a person's problems, pass through ourselves, think about how to help him. And only when we realize that we can help, only after that we think how much our time will cost.

The price is determined by the labor and expenses of attorney (expenses for accountants, assistants, taxes, office equipment, transportation costs, etc.). Sometimes we work for free. Of course, there is professional ethics in pricing. The client must understand what he pays for. Another opinion is expressed by attorney V., according to the attorney: "If by entrepreneurial activity we mean any work for ourselves, then advocacy is entrepreneurial. And if we mean by entrepreneurial activity an investment of efforts to increase capital, then advocacy is not entrepreneurial. I do not consider advocacy as entrepreneurial. Almost always, attorneys work for a fee, and not for the sake of public interests. The laws of the market are more involved in the formation of the fee than professional ethics. Ethics is included in exceptional cases". In this case, the advocate is more focused on professional ethics and responsibility. From the point of view of sociology, it can be noted that the ethical attitude of the advocate to the client is always beneficial for the advocate himself. The work of E. Johnson (Johnson, 1981) leads to the conclusion that advocates are guided by such a non-economic motive as professional satisfaction. The latter, according to R. Dinovitzer, B. Garth (Dinovitzer, Garth, 2007), can be interpreted from the position of maximizing benefits. Here is an example illustrating the American approach. On the one hand, like any other advocate, the American advocate appreciates himself and his place in the profession. However, the morality and moral foundations of advocates are often questioned (Gulyaev, 2019). E. V. Gulyaeva, after studying American advocates, points out: sometimes advocates recognize that what they came to the profession for, depreciates over time. Certainly many students enter the faculty of law with the desire to be useful to society, but often the temptation to own a lot of money, the ambition to become a well-known and successful lawyer makes a defender of the right defender only of their interests. Therefore, the American advocate often becomes a hostage of false values. «A certain amount of cynicism. This business works on you. When you were in law school you had some noble idea of what a lawyer should be. A champion of individual rights; a defender of the Constitution: a guardian of the oppressed; an advocate for your client's principles. Then after you practice for six months you realize we're nothing but hired guns. Mouthpieces for sale to the highest bidder, available to anybody, any crook, any sleazebag with enough money to pay our outrageous fees. Nothing shocks you. It's supposed to be an honorable profession, but you'll meet so many crooked lawyers you 'll want to quit and find an honest job (Grisham, 1993, p. 68). So, in the context of sociology, adhering to the professional ethics of advocate brings him professional satisfaction, which can be considered in terms of maximizing non-economic benefits. And finally, consider the activities of advocate in terms of social roles. Like any other individual, advocate is both the bearer and the performer of many social roles. Thus, M. Wilkinson points out that as advocate as a professional, several roles are combined - a student, teacher and researcher (Wilkinson, 2001, p. 270). The specificity of the roles of advocate is that he must fulfill his professional roles in relation to the client, which may go against the moral and ethical component of his activity. In addition, moral standards and the law may contradict each other. All this allows us to say that the advocates is more than other role carriers in a situation of conflict of roles, role tension. The choice of this or that role remains with the advocate. At the same time, we can talk about the role stress that is influenced by the length of service in the advocacy area. In our opinion, to a greater extent role conflict accompanies young lawyers. In Russian practice, lawyers most often don't come to the bar immediately after receiving a legal education.

*Table following on the next page*

Table 2: The ratio of legal and attorney experience (excluding persons who did not give an answer of 9.3%) (Kazun, 2015, p.19).

Time to receive	Men	Women	In general
The legal experience begins after the advocate's status	1,9%	3,5%	2,6%
Attorney status received in the same year that the legal experience begins	14,0%	22,7%	17,8%
the year after the start of legal experience	7,5%	8,6%	8,0%
two years after the start of legal experience	6,7%	9,0%	7,7%
2-5 years after the start of legal experience	18,4%	17,7%	18,1%
6-10 years after the start of legal experience	24,7%	19,8%	22,6%
11 years after the start of legal experience	26,8%	18,7%	23,3%

As we can see, most often lawyers come to the bar after 6 or more years of legal practice, which is more levelheaded from the point of view of becoming professionally.

#### 4. CONCLUSION

The law profession is among the fairly elitist professions. We believe this applies to many countries. That is why we made an attempt to analyze the activities of a lawyer in the context of three sciences - law, economics and sociology. We believe that the further development of society is connected, including the development of this sub-institute in the new socio-economic socio-political conditions. Evaluation of the activities of attorney from the point of view of a sociological approach suggests that the attorneys community is quite closed and at the same time heterogeneous. A attorney is more focus on professional ethics and responsibility than on financial gain. From the point of view of sociology it can be noted that the ethical attitude of attorney to a client is always beneficial for the lawyer himself. However, it is worth noting that there is a clear lack of knowledge of the attorney community. So far, not only professional identification, but also value-normative issues remain outside the framework of sociological research.

#### LITERATURE:

1. Akopyan, A.V. (2009) *Managing the process of forming the professional identity of attorneys as a socio-professional group: socio-technological aspects*: author. dis. candidate social sciences. SPb.
2. *Constitution of the United States* <https://www.archives.gov/founding-docs>
3. Dinovitzer, R., Garth, B. (2007) Lawyer Satisfaction in the Process of Structuring Legal Careers. *Law & Society Review*, no. 41 (1), pp. 1–50.
4. Evetts, J. (2003) The Sociological Analysis of Professionalism: Occupational Change in the ModernWorld *International Sociology*, no. 18 (2), p.p 395–415.
5. Freidson, E. (2001) *Professionalism. The Third Logic*. Cambridge.
6. Johnson E. (1981) Lawyers' Choice: A Theoretical Appraisal of Litigation Investment Decisions *Law & Society Review*, no. 15 (3/4), pp. 567–610.
7. Grisham, J. (1993) *The Firm*. N.Y.: Island Books.
8. Gulyaeva, E.V. (2009) *Linguocultural character «American lawyer»*: author. dis. candidate phil. sciences. Volgograd.
9. Kazun, A. P., Yakovlev, A. A. (2014) Russian attorneys: the formation of a professional community in an imperfect institutional environment *Social Sciences and the Present*, no. 6, pp. 44-47.

10. Kazun, A. Khodjaeva, E., Yakovlev, A. (2015) *Law Society of Russia. Report Institute for Industrial and Market Studies The Institute for the Rule of Law European University at Saint-Petersburg* M. [[https://pravo.ru/store/doc/doc/Doklad\\_advokats\\_all.pdf](https://pravo.ru/store/doc/doc/Doklad_advokats_all.pdf)] (accessed 25.08.2019)
11. Kucherena, A.G. (2009) *Advocacy in the context of judicial reform in Russia: Monograph*. M.: YURKOMPANI.. P. 434.
12. Saushkin, S.A. (2010) Classics of domestic law on the role and significance of advocacy *Modern Law*, no. 3, p.p. 153-155.
13. Saks, M. (1995) *Professions and the Public Interest: Medical Power, Altruism and Alternative Medicine*. London, p.p.153–162.
14. Volkov, V.V., Dmitrieva, A.V., Pozdnyakov, M.L., Titaev, K.D. (2012) *Russian judges as a professional group: sociological research* / ed. V. Volkova. St. Petersburg: Institute for Law Enforcement at the European University at St. Petersburg.
15. Wilkinson, M. (2001) Information Sources Used by Lawyers in Problem-Solving: An Empirical Exploration *Library & Information Science Research*, no. 23., p.p. 257–276.

## REGIONAL DEVELOPMENT IN MALAYSIA: A SOCIO-ECONOMIC IMPACTS OF HUMAN CAPITAL DEVELOPMENT PROGRAMMES

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### **ABSTRACT**

*Regional development policy in Malaysia was targeted to improve economic development, particularly in the east coast region of Peninsular Malaysia, where recorded poverty and unemployment was much higher. In line with government aspirations, there are five regional economic corridors established during Ninth Malaysian Plan (2006-2010). East Coast Economic Region (ECER) Master Plan, approved by the government in 2008 has identified the high impacts programmes and projects to decrease the socio-economic inequalities, eliminate poverty and improve the income and wealth distribution sustainably. This study aims to analyze the socio-economic impacts of human capital development programmes implemented by ECER in the state of Pahang. The study uses the quantitative method by administering a set of questionnaires to 132 respondents from the human capital development programmes participants. It also uses the qualitative approach (in-depth interviews with ten key informants) including direct observation, as well as desk-based research. The outcome of this study finds improvement in the job opportunities, income, and well-being of the participants.*

**Keywords:** *Human Capital Development Programmes, Regional Development, Socio-Economic Impacts*

### **1. INTRODUCTION**

Regional development has become popular among the third world countries since the 1950s including Malaysia (Mariana et. al, 2015). In the 1960s, the main approaches used by the government to promote regional development were by decentralized urbanization approaches of basic need and agropolitan approaches. Generally, the establishment of regional economic development in Malaysia aimed to improve the economic change among the local community, particularly in rural areas. It was among the key initiatives taken by the government to enhance the standard of living of the local people and improving the economic performance of the states across Malaysia (Ghani Salleh, 2000). The concept of sustainable development that recently emphasis by new regionalist theories is in line with what indicated in the Sustainable Development Goals (SDGs). There are a total of 17 Goals listed that acts as a universal call to end poverty, protect the planet and ensure all people enjoy peace and prosperity (UNSD, 2018). In the SDGs, they embrace the so-called triple bottom line approach to human well-being which is economic development, environmental sustainability and social inclusion but the specific objectives differ globally, between and within societies. Through the tenth Goal which is sustainable development, it calls for reducing inequalities in income as well as those based on age, sex, disability, race, ethnicity, origin, religion or economic or another status within a country. By this Goal, it describing the vital objective of regional development which is to reduce inequality, improve social well-being and close the gap between develop and undeveloped region through various development programmes and projects. Mohamed Aslam & Asan Ali (2003) in their study indicated that the level of development in Malaysia can be divided into two categories, less developed states and more developed states.



A total of ten indicators used in the composite development index which comprised of unemployment rate, GDP per capita, urbanisation rate, poverty rate, infant mortality rate, population provided with electricity, population provided with piped water, registration of car and motorcycle per 1,000 of population, and number of doctors per 10,000 of population. According to the above indicators, Kelantan, Terengganu and Pahang were categorized under the less developed states. In line with Malaysian government aspirations, there are five regional economic corridors established during the Ninth Malaysia Plan (2006–2010). It consists of East Coast Economic Region (ECER), Northern Corridor Economic Region (NCER), Iskandar Development Region (IDR), Sarawak Corridor of Renewable Energy (SCORE), and Sabah Development Corridor (SDC). ECER scope is the states within the east coast of Peninsular Malaysia. It consists of the state of Pahang, Terengganu, Kelantan, and Johor (district of Mersing). Geographically, ECER covers 51 per cent of the Peninsular Malaysia, with a total area of over 66,000 square kilometres. It is a part of the national aspiration to uplift this region to become a developed region by 2020. In regards to this matter, East Coast Economic Region Development Council (ECERDC) was established in 2008 as a statutory body under the East Coast Economic Region Development Council Act (Act 688) to drive the implementation of the ECER Master Plan. ECERDC plays a vital role to come out with a proper direction, suitable policies, and dynamic strategies related to the development of this region (ECERDC, 2009). In achieving sustainable socio-economic development, ECERDC adopted a multi-prong approach that benefits all segments of the local population in the region. There are several human capital development programs, each addressing the specific needs of the local community in ECER. It is to ensure the people are not left out of the social-economic development that bringing new prosperity to the region. Every project and program is planned and implemented with the objective to improve the livelihood of the local community and increasing their income in a sustainable manner. The people involved in the programs are provided opportunities to learn about entrepreneur activities and helping them to improve their standard of living. To date, studies on regional development programmes, particularly on regional economic corridors in Malaysia mainly focus on the Iskandar Development Region. Mariana, Syahriah, & Noor Suzilawati (2015) in their study analysed the local people's perceived socio-economic impacts of Iskandar Malaysia development. Hence, this paper attempts to explore (1) the changes of income and occupation of the participants after joining these programmes, (2) socio-economic impacts of these programmes in improving the standard of living and (3) the overall impacts of these programmes in empowering local community in Pahang state.

## 2. LITERATURE REVIEW

In the context of regional development in Malaysia, besides physical development, human capital development also becomes an essential indicator to achieve sustainable development. Human capital defined as the knowledge, skills, attributes, and competencies exemplified in an individual that facilitate the establishment of personal, social, and economic well-being (OECD, 2001 quoted in Tittenbrun, 2017). The investment of government in training and education will contribute to the socio-economic development in the region, particularly in enhancing the potential of disadvantaged adults such as the unemployed, underemployed, single mothers and aspiring youths. Many studies had found the impacts of human capital investment in the socio-economic development of a region. The investment in knowledge and skills increased the employment rate (Vinokur, Schul, Vuori & Price, 2000). Other than that, a study found a positive correlation between investment in education and economic growth and development (Olaniyan & Okemakinde, 2008). Human capital development is the key factors to achieve social and economic development instead of physical, material, and capital resources. In a study by Khoo, Mohamad Shaharudin, Parthiban, Nor Malina and Zahri (2018), courses and skills training are some of the strategies suggested to alleviate poverty.

In Malaysia, a huge allocation is spent to help the poor in surviving skills. Skills programme and related courses have been implemented at various levels of society to improve their participation in the workforce. Good courses and training frameworks can provide a sustainable capacity for poor people to be actively involved in economic activities. This kind of human capital development program will have a direct impact to the participants, not only in increasing skills and knowledge but developing their self-confidence and creating a positive mindset about how to live a better life. Gennaioli et al. (2013) in their study suggests that regional education is a critical determinant of regional development. Through education of workers and entrepreneurs, it can help in improving the socio-economic of a region. The various regional development programmes reduce poverty situations in the less developed states in Malaysia. By using relevant indexes to trace the changes in poverty incidence, extent and severity, such programmes increase economic performance in the states of Kelantan, Terengganu, and Pahang (Zaleha and Noor Azlan, 2013). In a study conducted on the participants of development initiatives in Kelantan, Malaysia, shows positive impact of access to working capital and training programmes on household income and level of economic vulnerability (Wan Nurulashiah, Abdullah and Mohamed Dahlan, 2018). On the other hand, the entrepreneurs in Salem District of Tamil Nadu have been empowered by providing them with adequate technical, financial and physiology supports. As a result, it improves their socio-economic status significantly (Sasikala, 2015). Rural women entrepreneurs in Selama District, Perak also contribute significant role in socio-economic development of local community by participating in small business. They are able to create their own career as entrepreneur, own an income and improving family financial condition (Roshimi and Rosliana, 2016). A study by Yusof Ahmad et al. (2014) discussed the quality of life amongst Agropolitan participant project in Kelantan and Pahang. The result indicates the positive income progress every month before and after joining the Agropolitan project. The participants have a fixed job, fixed sources of income and better income. The participant express that they have a more assured life and a better lifestyle. Also, this project enhances work opportunities and reduces the poverty problem in Kelantan and Pahang. Their family also can live in a conducive environment and harmony residential area. Additionally, skills training programme giving positive effect in improving socio-economic status of beneficiaries of microfinance in the Northern Region of Ghana. It enhances beneficiaries' ability to provide a better education for their dependence, improve their families' healthcare, acquire more household assets and enhance their empowerment (Abdul-Nasiru and Goedegebuure, 2015).

### **3. RESEARCH METHODOLOGY**

The study used both primary and secondary data to achieve the objectives. The study used the quantitative method of research and issued a questionnaire to 132 respondents among human capital development programmes participants in Pahang. A semi-structured questionnaire was administered to the participants. Majority of the respondents were participants of empower ECER (51%), followed by agropolitan project (33%), and entrepreneur ECER (13%). The remaining 3% of respondents were from Suri@Home programme. 82% of the respondents are married while 10% of them are single. Apart from that, 8% of them are widow and divorcees. In the aspect of family members, most of the respondents (57%) have a medium family which consists of five to eight members for each family. Concerning educational background, majority of the respondents (47%) finished their secondary school education. The first objective of this study measured by the income progress and occupation changes upon joining the HCDP. In the second objective, the socio-economic impacts measured by the participant's perception of how the project affects their life in terms of economic, social, and environment. The questionnaire designed on a positive scaling rate, in which 1 is the lowest rate and the highest is 5. In measuring the third objective, the rating scale used to gain their satisfaction expression on the

overall impact of the project in transforming their life, in which 1 is the lowest and the highest is 10. Then, few open-ended questions used to gain their view pertaining to their experience upon joining the project, any problems or issues occurred, and their opinion about the project operator. Statistical Package for Social Science (SPSS) software has been used in this study to analyse the data. The descriptive analysis and Crosstab analysis used to answer the objectives. The study also uses a qualitative approach which includes in-depth interviews with ten key informants. The informants comprised of 4 informants from the implementation level, and the remaining 6 informants were selected from the respondents involved in the questionnaire survey. The in-depth interviews conducted in the participant's language. All the conversation recorded upon consent from the interviewees. Later, the interviews translated and transcribed. Each interview session took between 40 minutes to one and a half hours. Content analysis used to systematically evaluate the interview transcriptions. NVivo software used to analyse the qualitative data. A pilot study conducted with a total of 30 survey questionnaires distributed to test the reliability of the questions. Ethical approval sought before the actual survey conducted. Apart from that, the secondary data was collected from the reliable and dependable sources such as official government websites, ECER annual reports, statistics from published documents, and related journals and articles.

#### 4. RESULTS AND DISCUSSION

Table 1 shows the occupation of the respondents before and after participating in the Human Capital Development Programmes. Most of the respondents (57%) were self-employed before joining these programmes, while 31% of the respondents were unemployed as they were doing nothing and became full-time housewives. On the other hand, 10% of them were working in the private sector and there were 2% of the respondents working in the government sector before joining these programmes. Most of the self-employed respondents were running small business from home as they do not have capital to open a physical store. Many of them need to take care of their children and family at home but at the same time they are really passionate to increase their family's income and improve their standard of living. It can be seen that after joining these programmes, all of the participants are actively working, either in the private sector or self-employed.

*Table 1: Occupation of the Participant Before and After Joining the Programmes  
(Abdul Rahman, 2019)*

	Occupation Before (%)	Occupation After (%)
Government	2	0
Private	10	38
Self Employed	57	62
Jobless	20	0
Housewife	11	0

Table 2 and Chart 1 reveal the monthly income of the respondents before and after participating in the HCDP. Majority of the respondents (42%) earned a monthly income of RM 300 and below before joining these programmes. while 16% of them earned between RM 301 and 600 per month. After joining these programmes, only 4% of them earned between RM 301 and 600. As expected, the respondents with a monthly income of RM 1501 and 1800 increased by 12% and the top earners on a monthly income of RM 3000 and above increased their wages by 19%. This figure indicates that in average, the incomes of the participants gradually increased after joining these programmes. Apparently, these programmes succeed in improving their household income.

*Table 2: Income Progress (Abdul Rahman, 2019)*

Income (RM)					
Before	No	Percent (%)	After	No	Percent (%)
300 and below	56	42	300 and below	0	0
301-600	21	16	301-600	6	4
601-900	5	4	601-900	16	12
901-1200	20	15	901-1200	24	18
1201-1500	11	8	1201-1500	13	10
1501-1800	0	0	1501-1800	16	12
1801-2100	5	4	1801-2100	9	7
2101-2400	0	0	2101-2400	0	0
2401-2700	2	2	2401-2700	4	3
2701-3000	3	2	2701-3000	10	8
3000 and above	9	7	3000 and above	34	26
Total	132	100	Total	132	100

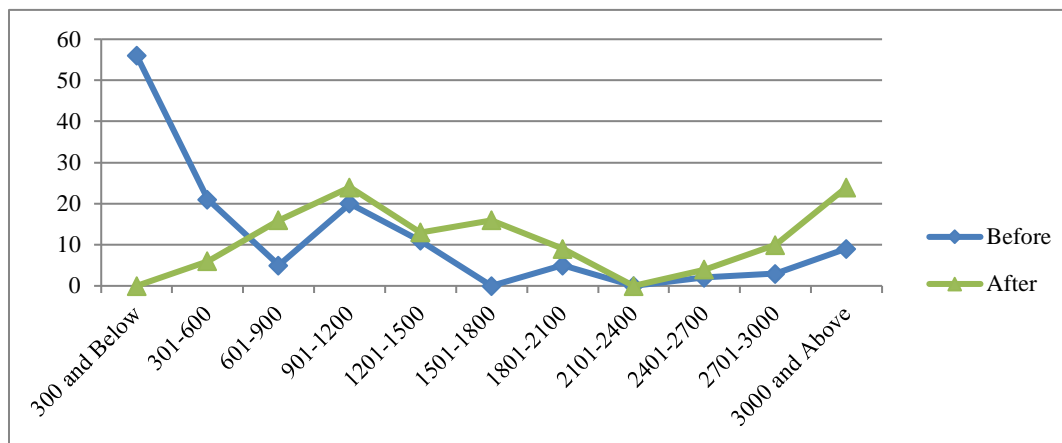
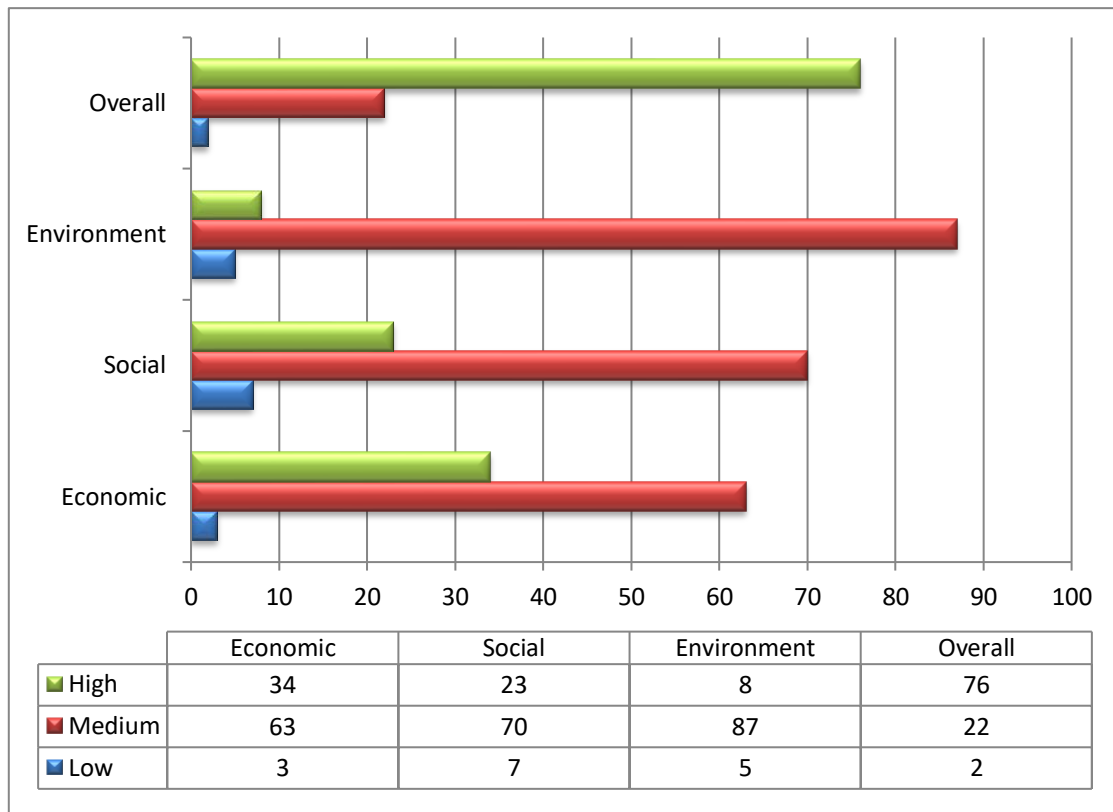
*Chart 1: Income progress before and after joining the programmes (Abdul Rahman, 2019)*

Chart 2 presents the socio-economic impact of human capital development programmes in Pahang. Majority of the respondents from this state experienced medium impact of these programmes on their economic, social, and environmental aspects. About 63.0% of them felt that these programmes have helped to boost the economic state in Pahang. As the biggest state with the highest population in the east coast region of Peninsular Malaysia, these programmes have offered numerous job opportunities to the needy and increased the income for the poor people. Most of them are able to start their own business and participate in entrepreneurship. The current local entrepreneurs have also increased their productivity and profitability, which have attracted more foreign investors.

*Chart Following on the next page*



*Chart 2: Socio-Economic Impact of Human Capital Development Programmes in Pahang (Abdul Rahman, 2019)*

In particular, most of the respondents (70.0%) felt that these programmes have contributed positive impact on their well-being. Through the intensive course given to empower them with useful knowledge and skills, these programmes have succeeded in reducing poverty as well as social problems. The development project has also improved their access to improved public facilities and amenities. The increasing development of infrastructures in the local areas has benefitted the local people in this state. Besides that, 87.0% of them also agreed that these programmes have contributed positive impact on the environmental aspects. Generally, most of the respondents (76.0%) in Pahang were highly satisfied with the implementation of these programmes since these programmes have brought positive changes, both physically and mentally. The concept highlighted by ECER appears to differ from other agencies—these implemented programmes offer the participants the required skills and knowledge and monitor their progress even after the completion of course. Unlike most training programmes, it was not a one-off programme and the participants have to demonstrate their efforts before they are able to receive further assistance. Apparently, the human capital development programmes in Pahang have contributed positive socio-economic impact on the local community. These programmes have provided various skills to the participants, especially unemployed youths, housewives, and underprivileged people. These skills are expected to help them to participate in entrepreneurship for additional income. This programme has taught them to be independent and have their own initiatives to improve their standard of living without being too dependent on the assistance from the government. The involvement of various races and ethnics in the human capital development programmes reflects the concept of inclusivity that is practised by ECER. For instance, the community of Orang Asli in Tasik Chini received special training on handicraft weaving and motorcycle maintenance through empower ECER. According to one of the informant, the following insights on programmes in Pahang are as follows:

*“For empower programme in Pahang, every year we have intake about 200 participants for one area. We gave them training and we have interaction with the local community. The demand for the courses provided was high and apparently they were satisfied with our efforts. The groups such as unemployed people and housewife that before this inactive, once they joint this program, they could earn at least RM 300 a month. It was not much but at least it provided incomes to them. We taught them to be independent. ...*

*... The courses provided not only to create new entrepreneur but more than that, we wanted to prepare skilled workforce to the industry such as wiring and automotive. Everybody can join this programme as we have Malay, Chinese, Indian and Orang Asli participants. As for example, we have offered courses such as handicraft weaving and motorcycle maintenance specifically for the Orang Asli adults and youths in Tasik Chini. It was specially designed to suit the Orang Asli way of life.”*

(Respondent No. 2, Pahang)

Basically, most youths gain employment after they complete the programmes where some of them make the decision to become an entrepreneur after quitting their current job. These programmes have increased their skills and knowledges, particularly in entrepreneurship activities. They are now more confident to survive in entrepreneurship industry with all the skills gained. The changes must be consistent and persistent for the creation of successful youth generation. The following participant revealed the experience of being part of empower ECER:

*“I was a Doctor before. Currently I just opened a western café in Temerloh, Pahang. This programme gave me a chance to explore my potential in foods and beverage industry. I did not have any knowledge about business and cooking before. Through the hard and soft skills gained from this program, I decided to quit my job as a Doctor and joint the entrepreneurship activities. As a youth, this programme empowered me to achieve my dream and yes, I am happier with my life now.”*

(Respondent No. 8, Pahang)

As for the current entrepreneur in Pahang, the entrepreneur ECER programme has benefitted them in many ways. First, this programme provided them with supports and guidance needed to grow their market. In doing so, ECER has cooperated with many government agencies to ensure that their products can be upgraded to an international standard and penetrate international market. Second, they also being provided with continous training on business management, product certification, and marketing strategies to ensure that they are remain competitive in the industry.

*“I joined this programme in 2013. At first, I just have a small business. After that, I received continuous supports and guidance from ECERDC until ten of my products got halal and MeSTI certification. They really help me in marketing, branding, packaging, design and account management. They pushed me to go further in this industry. Before this nobody know my products but now, I can bring my products to the international level. Three of our products have penetrated Singapore and Brunei market. As a women entrepreneur, I can proudly present Pahang traditional products to the world now. Within just three years, the impact of this programme on my business is huge and I am very grateful to be among the successful women entrepreneur in ECER.”*

(Respondent No. 10, Pahang)

Despite its achievement, there are a few barriers of these programmes that hinder the achievement of its ultimate goals.

- Criteria in the selection of participants: The highly passionate candidates who want to involve in entrepreneurship activities after the course ended must be prioritized by the project operator. Based on the observation during the field world, they were some of the participants did not really apply and practice the skills and knowledge provided to them. As a result, their income did not achieved the targeted amount.
- The assistance after courses ended. Some of the participants cannot afford to start a business after the course ended as they come from a poor family. ECERDC will only provide assistance once they have shown good progress in their business. Prior to that, the participants themselves must find their own initiatives on how to start their business activities. In a long term, if no initiatives taken by the project operator, those participants cannot survive in this industry.
- Sustainability of the programme. Based on the finding, the programmes such as empower ECER and entrepreneur ECER can be sustained in a long term but for the projects like agropolitan project and Suri@Home, they were some issues pertaining to the project operator and attitudes of the participants. It was affected the ultimate goals of these projects in socio-economic development of local community.

## 5. CONCLUSION

This paper revealed numerous valuable insights on the socio-economic impact of human capital development programmes in the east coast region of Malaysia, particularly in the state of Pahang. Undeniably, these programmes have brought positive changes in participant's occupation and income. Other than that, these programmes have transformed the participants' lives and improving the socio-economic status of the targeted groups such as low-income household, women, and youths. However, the obtained findings demonstrated that there are several issues related to the implementation of these programmes that require attention from ECER and project operator. The survival of the participants in entrepreneurship after the completion of the programme should be considered. A proper planning and support group can help the participants to sustain their entrepreneurship activities. Besides that, ECER should also pay attention to the sustainability issue of agropolitan project since it involves extremely poor families. A proper exit policy should be prepared to ensure that this programme achieves its ultimate goal. With regard to the impact of these programmes on local community in Pahang, more research should be conducted on other development programmes under other divisions that implemented by ECER in realizing the vision to become a developed nation.

## LITERATURE:

1. Abdul-Nasiru Iddrisu Alhassan, and Goedegebuure, R. (2015). The Value of Skills Training in the Improvement of the Socio-Economic Status of Microfinance Beneficiaries: A Case Study at Grameen Ghana. *Special Issue- UMM Master Awards 2015*.
2. Abdul Rahman Abdul Latip. (2017). *The Impacts Evaluation of ECER Development Programmes in Improving the Socio-economic Status of Local Community* (Ph.D Proposal Presentation). Universiti Sains Malaysia.
3. East Coast Economic Region Development Council. (2009). East Coast Economic Region Development Council Annual Report 2008. Kuala Lumpur.
4. Gennaioli, N., Laporta, R., López-de-Silanes, F., and Schleifer, A., (2011). "Humancapital and regional development," *Economics Working Papers* 1286, Department of Economics and Business, Universitat Pompeu Fabra.
5. Ghani Salleh. (2000). *Urbanisation and regional development in Malaysia*. Kuala Lumpur, Malaysia: Utusan Publication & Distributors Sdn Bhd.

6. Khoo, S. L., Mohamad Shaharudin Samsurijan, P. S. Gopal, Nor Malina Malek & Zahri Hamat. (2018). Urban poverty alleviation strategies from multi-dimensional and multi-ethnic perspectives: Evidences from Malaysia. *Kajian Malaysia* 36(2): 43–68. <https://doi.org/10.21315/km2018.36.2.3>
7. Mariana Mohamed Osman, Syahriah Bachok, & Noor Suzilawati Rabe. (2015). Local Residents' Perception on Socio-economic Impact of Iskandar Malaysia: An Example of Urban Regeneration Program in Malaysia. *Procedia - Social And Behavioral Sciences*, 170, 58-69.
8. Mohamed Aslam Gulam Hassan & Asan Ali Golam Hassan. (2003). Development Planning And Regional Imbalances In Malaysia. *Working Paper*, (5). Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.194.6239&rep=rep1&type=pdf>
9. Olaniyan, D., & Okemakinde, T. (2008). Human Capital Theory: Implication for Economic Development. *Pakistan Journal Of Social Sciences*, 5, 479-483.
10. Roshimi Mohd Saleh, and Rosliana Ahmad Razilan, (2016). The Role of Women in Rural Socio-Economic Development in Selama District, Perak. *International Journal of Accounting and Business Management*, 4(1), pp.37-49.
11. Sasikala, T. (2015). The Socio-Economic Status of Women Entrepreneurs in Salem District of Tamil Nadu. *HuSS: International Journal of Research in Humanities and Social Sciences*, 2(1), p.40.
12. Tittenbrun, J. (2017). Human Capital Theory and Evidence in Light of Socio-Economic Structuralism. Retrieved 25 September 2019, from <http://www.worldscientificnews.com/wp-content/uploads/2017/07/WSN-79-2017-1-168-1.pdf>
13. United Nations Sustainable Development. (2018). About the Sustainable Development Goals Retrieved 1 September 2019, from <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
14. Vinokur, A., Schul, Y., Vuori, J., & Price, R. (2000). Two years after a job loss: Long-term impact of the JOBS program on reemployment and mental health. *Journal Of Occupational Health Psychology*, 5(1), 32-47. doi: 10.1037/1076-8998.5.1.32
15. Wan Nurulasiah Wan Mustapa, Abdullah Al Mamun, and Mohamed Dahlan Ibrahim (2018). Economic Impact of Development Initiatives on Low-Income Households in Kelantan, Malaysia. *Social Sciences*, 7(7), p.118.
16. Yusof Ahmad, Hamid Saad, Yendo@Yendo Afgani & Naeemah Yusof. (2014). Quality of Life amongst Agropolitan Participant Project: A Malaysian Experience. *Procedia - Social And Behavioral Sciences*, 153, 479-490
17. Zaleha, M. N., and Noor Azian Asfari (2013). Regional Development Programmes and Poverty Reduction in East Coast States of Malaysia. *Pertanika Journal Of Social Sciences & Humanities*, 21(S), 201-210.



## THE ROLE OF WATERFRONTS IN THE PROCESS OF TRANSFORMATION OF MODERN PORT CITIES

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### **ABSTRACT**

*In the case of port cities, the idea of building waterfronts is the revitalization of aquatic areas where port functions have disappeared, the importance of these areas has decreased, and as a consequence their degradation. Unfortunately, at present one can notice a common trend of transforming port areas towards the creation of elite enclaves and abandoning the reconstruction of existing port activities. The construction of waterfronts is often a source of conflicts both in the financial, organizational and social sphere, as well as in the existing city-port relations. The dependencies in this relationship have changed over time, and shaping the synergy between the port city and seaport is still not a simple task and is a challenge for both of these organisms. Only the implementation of effective solutions for revitalization of quays and post-port areas will give character to modern port cities while maintaining their current functions. The article presents the problems and challenges connected with the sustainable management of port areas in the aquatic spaces called waterfronts. The aim of the article is to assess the concept of transformation of port and waterfront spaces and to analyze the opportunities and threats arising from these transformations. The article also focuses on analyzing the strategy of managing post-port areas of selected ports and indicates the main directions of changes in the process of revitalizing the aquatic areas of modern port cities.*

**Keywords:** *post-port areas, revitalization, seaports, waterfront*

### **1. INTRODUCTION**

Waterways have always been the basis of transport, and people settled near them. Human residences were established over natural water reservoirs, which also had a positive impact on urban development. Cities and ports have always been the economic space of the region, and the cooperation of both entities was conducive to progression. The development of the port was influenced by the city's development, although in the case of the Polish port of Gdynia the construction of the port was the impulse to build the city. Port cities, due to their location, perform functions related to maritime activities, and as a consequence the port strongly influences the city and its city-forming functions. However, these relationships are unstable and are constantly changing over time. In the history of the development of port cities, port space has undergone all the time transformations, at least due to the development of transport or transshipment techniques, and its areas have been enlarged or shifted. Currently, effective ways of revitalizing post-port and per-port areas are being sought and new functions corresponding to the requirements and needs of modern cities will be given. The trend of transforming water fronts called waterfronts is characteristic of contemporary urbanization processes and spatial development of cities, but is also a cause of conflict in the search for an appropriate transformation model. The article begins with a brief historical review of the changes that have taken place in the city of Bilabo and other cities, which through the changes made have indicated the direction of other cities in terms of the development of post-port and per-port areas. Then, the evolution of port cities and the accompanying revitalization of aquatic areas, i.e. the so-called waterfronts, is presented. Subsequently, the article presents an example of the Polish port city of Gdynia and an analysis of the Study of conditions and directions of spatial development in Gdynia laid out for public inspection on 20.05.2019, at the same time presenting

the main problems faced by the port of Gdynia in the light of restrictions and the purpose of some areas bordering the port for residential and service buildings.

## **2. BILBAO EFFECT**

At the end of the 70s, the Spanish city of Bilbao was the main service center of the metropolitan area, but above all the city was characterized by industrial and port activities, which focused mainly around the mouth of the Nervión River. During this time, the city of Bilbao also became the region's most important commercial center with the advent of department stores such as Precious Galleries or English Court. Unfortunately, the industrial crisis in the 1980s caused a serious collapse of the area previously dependent on the steel industry, heavy metallurgy and shipbuilding (Atutxa et al., 2015, p. 132). Degraded buildings and quays related to industrial infrastructure along the river have become a symbol of the end of the industrial city era. However, this serious crisis was the beginning of changes in the architectural and social sphere. In 1989, a draft general plan for the development of the city of Bilbao (Spanish Plan General de Ordenación Urbana, PGOU) was presented. The implementation of the program assumed its implementation based on public-private-partnership in the design and management of investment processes in urban space (Waszczuk, 2017, pp. 231-235). Local authorities wanting to lead the city out of lethargy and stop unemployment successfully began implementing the plan for the revitalization of the city. The key point and flagship investment of revitalization was the Guggenheim Museum designed by the world-famous architect Frank Gehry. Although the construction of the museum was only part of the broader strategy pursued in the city, its multi-faceted character was also manifested in many other initiatives. The new image of Bilbao began to be created by architectural blocks designed by the greatest creators of contemporary architecture, such as the stations of the new metro line by Norman Foster, the footbridge of the Spanish engineer Santiago Calatrava and the Zorrotzaurre district on the island of Nervión designed and put into use in 2018 by the famous architect Zaha Hadid. The creation of the Zorrotzaurre area has contributed to the development of housing, the creation of new jobs, and the former quays and shipyard-industrial areas have turned into spectacular boulevards. Bilbao revitalization also means expanding communication infrastructure, improving the urban transport system and pollution monitoring systems. After years of transformation, the city has gained a unique character and became tourist-friendly (Waszczuk, 2017, p. 225). With the new face of the city, there has been a significant increase in the number of tourists by about 2 million per year, while in 2018 the Guggenheim Museum was visited by 1,265,756 tourists (Fernando, 2019). The Bilbao effect is certainly not a recipe for spectacular success for everyone but a model of the city's transformation, which today should be perceived not as an architectural achievement but the cooperation of many entities, thanks to which this success was achieved.

## **3. THE ROLE OF WATERFRONTS**

Waterfronts are defined as areas located above water reservoirs. These are areas located at the interface of urban and port structures. The quays have always performed important functions, ranging from port, commercial and transshipment functions, but also were related to shipbuilding activities. Due to the period of establishment, among the port areas one can distinguish ports that arose in antiquity, ports from the medieval times, port areas from the nineteenth and early twentieth centuries and modern ports of the 4th and 5th generation, which are the main points of global maritime transport connections simultaneously following trends in innovative transport technologies (Lorens, 2013 p. 15). Changes in the relations of cities and ports took place both with the passage of time, the evolution of sea transport, transshipment technology, availability of goods and commercial policy. The consequence of these changes was also the evolution of port and city structures.

One of the model combinations is a study by Mieczysław Kochanowski, which illustrates the evolution of synergies between cities and ports. (Table 1)

Development phase	The degree of integration of the city with the port	Period of time	Types of port structure	Waterfront type
<b>I</b>	Full integration and connection of the port and city structure.	From antiquity to the early 19th century	<b>The first generation port</b> - located on natural sea or river quays. Adapted to small scale units. Organic, spontaneous development of port structures.	<b>Lack.</b> Water front used as a reloading space.
<b>II</b>	Separating port and industrial structures from strictly urban areas.	From the beginning of the 19th century to the middle of the 20th century.	<b>The second generation port</b> - located on natural or artificially created quays, adapted to the new type of marine vessels - steam ships. Port development planned by companies operating separately or together to form complexes of quays, warehouses, docks, etc.	<b>Waterfront type A.</b> Moving the main stream of cargo to the 2nd generation port resulted in leaving the port areas of medieval origin (1st generation port and opening the possibility of its adaptation for other purposes).
<b>III</b>	Full separation of port and city structures, while returning some specialized port functions (sea, passenger, yachting) to the A-type waterfront area.	Since the middle 20th century.	<b>The third generation port</b> - developed in the form of specialized transshipment bases, mass and container terminals connected to distribution and logistics centers, specialized processing plants (e.g. refineries) and economic connections going beyond the city or region. Establishment of port regions.	<b>Type B waterfront.</b> The transfer of cargo stream and the development of modern industries leave the 2nd generation port, and the area freed from port functions can be adapted to new functions.

*Table 1: Development phases of port and city structures (Lorens P., (2013), Obszary poportowe-problemy rewitalizacji, Fundacja Instytut Studiów Regionalnych, 2013, p. 18)*

Waterfronts, popularly called revitalized postport areas, are nowadays excellent investment areas for many. They have great potential, attractive location as well as functional values. But the revitalization of waterfronts is extremely controversial and is also the subject of many disputes among developers, authorities and local communities. Located close to city centers, they become an opportunity for stakeholders. Unfortunately, many port cities are rebuilding their quays in a context that has little to do with the port's continued operation. Currently, waterfronts are a problematic zone for planning and revitalizing areas difficult to develop, which were formerly the heart of the port city and today as a result of the collapse of the shipbuilding industry and some port functions are a zone of neglect and destruction. The redevelopment of aquatic areas is associated with many challenges, as redesigning the land requires reconciling port and urban functions. Revitalization of neglected areas also means meeting conflicting goals and visions of many potential beneficiaries. Assessment of the condition of areas requiring regeneration is difficult and needs varied. It should be remembered that revitalization is an extensive and complex process. However, the preparation of a revitalization program should start with determining problem areas and setting realistic goals for their implementation.

#### 4. PROBLEM OF MANAGEMENT OF POST-PORT AREAS IN GDYNIA

The port space development strategies in Gdynia were shaped along with the development of the port of Gdynia, when this fishing village was chosen for its construction. The decision was made in 1920, and in 1923 the so-called A temporary seaport and a shelter for fishermen implementing the design of engineer Tadeusz Wenda. Today, the port of Gdynia performs the function of a modern universal port, specializing in handling general cargo, transported in containers and in the ro-ro system, based on a developed network of multimodal connections with developed facilities. The length of the quays in the port is 17,700 meters, of which over 11,000 are intended for transshipment operations. The total area of the port is over 971,000 hectares, including almost 620,000 hectares of land. (Gdynia Port Authority, 2019) The port of Gdynia has been dynamically developing its operations for many years, thus successfully implementing the adopted investments. For further development, however, it is necessary to expand the territory, as well as unify the vision of spatial planners, urban planners, city authorities, potential investors and residents. One of the documents regulating the development of the city's space is the Study of conditions and directions of spatial development of the city of Gdynia. The latest study document was approved by resolution No. XI / 342/19 of the Gdynia City Council of 28.08.2019 and made available to the public on 20.05.2019. It consists of a text and graphic version. The text part is divided into two chapters:

- I - Spatial development conditions
- II - Directions of spatial development.

The Study of conditions and directions of spatial development project is a document that defines the main directions of development of the city of Gdynia and takes into account long-term directions of space development. The document includes conditions and arrangements regarding, among others Gdynia Development Strategy, the condition of the transport system, spatial structure and land use, areas excluded from development, technical infrastructure, areas requiring remediation and revitalization (Gdynia City Hall, 2019). This is an important document that everyone interested in city development and further planning policy should read, as it covers many changes and entities. The entities closely related to the development of the areas of the city of Gdynia include areas belonging to, but also bordering the areas of the Port of Gdynia Authority, dedicated to port activities. Currently, some of the areas located near the quays are damaged and neglected, and the directions of revitalization of these areas are also specified in the Study of conditions and directions of spatial development of the city of Gdynia. Unfortunately, the actions presented in the Study document towards which the city of Gdynia is heading clearly indicate a limitation of the port function in the area of degraded areas performing port and industrial functions. Wanting to implement the Sea City concept, the city of Gdynia forgets about the basic activity of sea ports which is shipping and sea transport. The concept of the city that residential buildings in degraded areas will block further port activity, the port of Gdynia requires further investments towards its development and expansion, and not restrictions on the part of the local government by including housing in its areas, transforming the port areas into waterfalls. This type of transformation of degraded areas occurs when the port industry is moved from city centers. A great example of modern development of post-industrial and neglected port areas are the cities of Rotterdam, Hamburg - the Hafen City district, Oslo - the Aker Brygge district, as well as London - the Canary Wharf district and London Docks. The cited examples of cities are typical for areas where the location has allowed the port functions to be transferred and the port areas revitalized in waterfalls. The main purpose of the construction of waterfronts is the revitalization of areas where there has been a disappearance or a clear limitation of port functions, which in the case of the Port of Gdynia does not take place, as evidenced by annual record transshipments. 2018 was a record year in the history of the Port of Gdynia in terms of transshipments - a total of 23.5 million tonnes was

transhipped, while in the first quarter of 2019, 14% more goods were transhipped, compared to the first quarter of 2018. ( Gdynia Port Authority, 2014). Currently, the operation of the port of Gdynia generates not only huge revenues for the state budget, but also the budget of the city of Gdynia. Analyzing the Study of conditions and directions of spatial development of Gdynia, we can distinguish two main problems related to the revitalization and development of post-port and per-port areas in Gdynia.

- The main problem for the further development of the port of Gdynia is the development of the areas of Fishing Pier (Chart1), which is the area of the multifunctional city center, where the development of downtown housing and service buildings and major public spaces is planned. These directions are included in the Study of conditions and directions of spatial development of Gdynia, which does not provide for the development of port functions in this area. Gdynia councilors expressed a negative opinion on the project of the Ministry of Maritime Economy and Inland Navigation and the Port of Gdynia Authority assuming the extension of the port borders in the area of Fishing Pier. The city authorities argue that it is contrary to the vision and development directions of Gdynia, assuming the construction of service and housing in this area, which is also expected by the current owner of the area - Polski Holding Nieruchomości, formerly Dalmor operated there. So far, PHN on the area of Fishing Pier has completed the construction of a complex of six five-storey residential buildings, next to which plans are to be built open for tourists and residents. City authorities explain that through direct contact with water, buildings in the form of waterfronts will increase the attractiveness of areas in the city and will make them unique. In their opinion, combining various functions - residential and recreational - is crucial in this type of area. But a survey of 1,560 respondents carried out by the local Tri-City website indicates that as many as 38% of respondents believe that the best solution for managing degraded areas will be to allocate them to periport functions (Figure 1). The termination of operations of the Dalmor enterprise dealing, inter alia, in deep-sea fisheries should not result in the exclusion of areas from the port borders. The land acquired after the collapse of Dalmor should be a contribution to the development of accompanying port functions in this area, which at the same time constitute a buffer zone. Destining Dalmor areas for housing is a rational and hasty decision (Szczzerba, 2019).

### How should the areas of Fishing Pier be developed in Gdynia?

■ port-related services ■ public recreation area  
■ residential buildings ■ mixed function

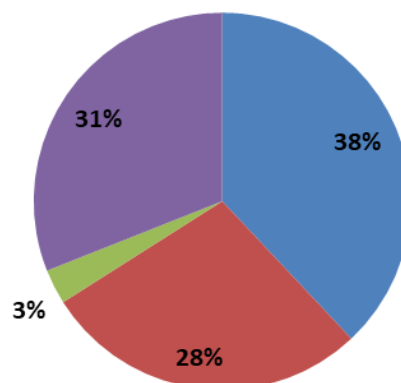


Chart 1: How should the areas of Fishing Pier be developed in Gdynia? (Szczzerba, 2019)



*Figure 1: Port and port-related areas in Gdynia (own study based on the Study of Gdynia spatial development conditions and directions, 2019)*

- The second problem is the planned development of the inter-track area between the City Center Development Zone (intended for service functions, business services, economic sector, downtown functions with a supplementary housing function) and between areas located within the port and the area after Nauta Shipyard (intended for the development of the function of multimodal rail transport of ro-ro cargo and containers and the handling of bulk cargo terminals) (Figure 1) will cause growing conflicts between residents and the port and entities that in the future will use these areas within the port boundaries. Both activities are mutually exclusive, generating conflicts. On the so-called The inter-track will be significantly affected by planned port investments and the area nearby for the investment supported by the Polish Parliament which is the construction of the deep-water Outer Port. Therefore, this area should constitute a zone of contact between the city and the port and create the so-called buffer zones in the form of green space and functions conducive to the development of the port and city in order to eliminate potential and future inconveniences arising from the operation of the port. Currently, areas with huge port potential are torn out by the sea, they will be allocated to service and residential functions, completely ignoring the fact that the city of Gdynia was created from the port. On the other hand, there is no agreement reached between the city authorities and, among others The Port of Gdynia Authority and entities with port activities is also caused by the sharpened political situation taking place in the country (Gdynia City Hall, 2019).

## 5. CONCLUSION

While Bilbao, Hamburg, Rotterdam, Oslo and London are examples of good governance, with the balanced participation of authorities and communities, the case of the city of Gdynia is characterized by a lack of a coherent strategy and various development plans for many entities. Cooperation on many levels is a key factor in creating lasting relationships and the interface between the port and the city. Due to the limited area, the city of Gdynia is unable to transfer its port and industrial activities to the outskirts. The city center dividing the area along with the port of Gdynia is a difficult situation for both organisms. Revitalization of extensive damaged and degraded areas faces many difficulties, ranging from financial, organizational, technical, social and environmental.

This kind of undertaking, which is the restoration of port and industrial functions, requires, first of all, large financial outlays, which usually exceed the possibilities of budgets of both investors and local governments. Currently in Gdynia there is a noticeable trend of abandoning and limiting port functions in favor of the uncontrolled expansion of residential and service functions in the city center, represented by developers who want to locate their buildings near the quays. The modern development of modern technologies would allow for coexistence of both organisms in one area, i.e. the port and the city. In the Study of conditions and directions of spatial development of Gdynia, there is also no visible cooperation between the city authorities and, for example, the Port of Gdynia Authority, the role of the Maritime Office as an important entity in further development plans for both port areas and city areas bordering the Port area is invisible. Gdynia. Undoubtedly, the Maritime Office in Gdynia should speak in a noticeable dispute regarding, among others areas for residential and service development in the area of former enterprises performing port, industrial and shipbuilding functions. To revitalize and develop pre-port and post-port areas in a sustainable manner, the following steps are necessary:

- establishing an institution for integration and creating synergies at the port - city level
- developing joint plans and dialogue in consultation with spatial planners, urban planners, city authorities, potential investors and residents
- implementation of innovative technological and pro-ecological solutions in the sphere of spatial planning of aquatic areas
- revitalization of degraded post-port and post-industrial areas with the intention of rebuilding their current functions
- building awareness that seaports are the gateway to the economic growth of the country and the city, as well as increasing international competitiveness
- developing a spatial transformation model using public funds, private investors, and support instruments
- modeling on cities that have successfully implemented regeneration solutions
- partnership approach of ports and cities, searching for a platform for cooperation
- building port and logistics facilities in areas remote from the city center bordering the port
- respect for historic areas of the city and port.

#### LITERATURE:

1. Atutxa, E., Campelo, P., Izaola, A., Urrutia, V., Zubero, I. , (2015), Bilbao: en la búsqueda de nuevos modelos de ciudad, *Quid* 16, 5 (2015) pp. 123-160
2. Fernando F., (2019), Annual evolution of the number of visitors to the Guggenheim Museum Bilbao (Spain) from 2010 to 2018, Retrieved 25.08.2019 from <https://www.statista.com/statistics/781335/annual-number-of-visitors-in-the-museum-guggenheim-in-bilbao/>
3. *Gdynia Port Authority*, (2015), Historia portu - Budowa portu, Retrieved 15.08.2019 from <https://www.port.gdynia.pl/pl/port/historia-portu?showall=&start=1>
4. *Gdynia Port Authority*, (2019), *Znakomity pierwszy kwartał 2019 roku w Porcie Gdynia*, Retrieved 20.08.2019 from <https://www.port.gdynia.pl/pl/wydarzenia/aktualnosci/1397-wyniki>
5. Gumuła- Kawęcka A., Malina G., (2014), *Zastosowanie podejścia holistycznego w zrównoważonej rewitalizacji nabrzeży i terenów poportowych*, *Inżynieria Morska i Geotechnika*, 6 (2014), pp. 597-602
6. Hoyle B., (2000), *Global and Local Change on the Port-City Waterfront*, *Geographical Review*, 3 ( 2000), pp. 395-417
7. Lorens P., (2013), *Obszary poportowe-problemy rewitalizacji*, Fundacja Instytut Studiów Regionalnych, 2013, p. 15-19

8. Pluciński M., (2014), *Teoretyczne i praktyczne aspekty zagospodarowania przestrzeni współczesnych portów morskich ze szczególnym uwzględnieniem portów morskich o podstawowym znaczeniu dla gospodarki Polski*, Instytut Logistyki i Magazynowania, Logistyka 3 (2014), pp. 5174-5180
9. Sánchez J. M., (2016), *Port-City governance. A comparative analysis in the European context.*, AESOP YA Conference, pp. 4-7, Ghent 2016
10. Gdynia City Hall, Study of the conditions and directions of spatial development of Gdynia, approved by resolution No. XI / 342/19 of the Gdynia City Council of August 28, 2019, (2019), Zarząd Miasta Gdynia, Retrieved 15.07.2019 from <https://www.gdynia.pl/bip/studium-uwarunkowan-i-kierunkow-zagospodarowania-przestrzennego-gdyni,425/studium-uwarunkowan-i-kierunkow-zagospodarowania-przestrzennego-gdyni,383263>
11. Szczurba P., (2019), *Radni Gdyni przeciw poszerzeniu granic portu*, Retrieved 10.09.2019 from <https://www.trojmiasto.pl/wiadomosci/Radni-Gdyni-przeciw-poszerzeniu-granic-portu-n137598.html#t>
12. Waszczuk, T., (2017), Transformations of Brownfields in the Period of Economic Recession. Illusion of "Bilbao Effect", *Space & Form*, 30 (2017), pp. 217-240



## ANALYSIS OF PASSENGER'S SATISFACTION USING THE PUBLIC TRANSPORT SYSTEM - CASE STUDY: BUCHAREST

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### ABSTRACT

*The increasing growth of population, along with economic and social activities promote an expanding demand for the use of public transportation. In these circumstances, assessing the quality of the public transit system, as well as identifying opportunities to improve the service quality should be the main objective for every policy maker. The main objective of the current study is to evaluate the user's satisfaction regarding the quality of the public transportation network in Romania's Capital Bucharest. The paper will focus particularly on the negative aspects that could be further improved by the public authorities or the transport operators. Accordingly, a user satisfaction survey was performed on a number of 247 respondents. The public transport users were interviewed in the Capital in September 2019. The key findings of this study illustrate the user preference for transport service that can provide high quality services even in rush hour congestion. According to the criteria analyzed, the main issues for public transport users are related to congestion, cleanliness, lack of online schedules and service delays.*

**Keywords:** *Bucharest, public transport, quality, survey*

### 1. INTRODUCTION

The increasing interest in public transport worldwide has heightened the need for continuously increasing the service quality. Nowadays, most activities take place in cities, important economical and administrative locations developed around a transport system. As a result of economic development, growth of population and extension of urbanization, many cities and their inhabitants face increasingly mobility problems. In this frame, public transport is a part of everyday life in urban areas and it is considered the most efficient mode of transportation. Of particular interest and complexity at the global level is the competitiveness between public and private transport organizations which is increasing. Accordingly, this phenomenon has its effect also in our country. Therefore, public operators managers need to analyze more closely and in detail the problems identified, the decisions or the necessary investments. Correspondingly, urban areas in Bucharest are facing nowadays an increasing demand in mobility that generates more and more traffic congestion and have a negative environmental impact. Nonetheless, in the current economy, the public transportation systems across the world are facing constant challenges due to users high expectations. As a result, policy makers from all the major cities need to cope with this new situation and expand their strategies and long-term projects. Furthermore, public representatives need to consider raising their attention to more sustainable transport policies that will positively influence the environmental impact. In response, this study will analyze the public transport services attributes in terms of quality and their influence upon daily passengers.

## 2. LITERATURE REVIEW

The literature analysis provides nowadays an extensive range of research paper on quality in public transportation, among with strategies and projects to improve the current services. Specifically, the major approaches used in the assessment of the quality in public transportation are the following:

- Passengers satisfaction surveys. In detail, this method is used to obtain a deeper understanding of the customer levels of satisfaction while using the public transit networks. For this reason, it uses rating scales to measure the user experience, as well as their loyalty or customer behaviour. For instance, studies by (Fornell, 1992), (Anderson and Sullivan, 1993), (Brog and Kahn, 2003), (USAID, 2011) develop the method of customer surveys and also aims to correct errors and ameliorate the users experience.
- Quality indexes. The method includes multi-dimensional instruments, which test the user perceptions and expectations regarding a certain service. As an illustration, (Zeithaml et al. 1994), developed the SERVQUAL index, which initially evaluated five significant dimensions that would represent the main aspects of service quality. Furthermore, the method was developed and improved by (Van der Wiele et al., 2003) and (Shahin, 2006).
- Evaluating the Quality Level of Service (LOS). LOS is a qualitative method design specifically to evaluate the quality of motorized traffic services. It is mainly used in transport related analysis (Ryus et al., 2010) evaluating characteristics such as average speed, travel convenience, safety and security or users comfort.

With this in mind, relevant studies are conducted annually in the field of public transportation since passenger satisfaction is an essential factor for any modern society. Furthermore, nowadays projects for sustainable transport cities are conducted in all major metropolis. For instance, (Stead & Pojani, 2015) analyzed the necessity for governments to implement sustainable strategies in order to develop the public transport networks efficiency. Additionally, (Rastogi, 2011) evaluated the impact of non-motorized modes of transport upon the cost of transport and the resource's consumption.

## 3. RESEARCH METHODOLOGY

### 3.1. The Questionnaire

The questionnaire had 20 predefined questions, divided in two categories: surface and underground transportation networks. The questions were organized with focus on service quality and user perception. Given these points, the questionnaire provided the possibility to rank the quality attributes on a “very low” to “very high” scale. Furthermore, there was optional space for respondents to elaborate their answers.

### 3.2. Survey sample

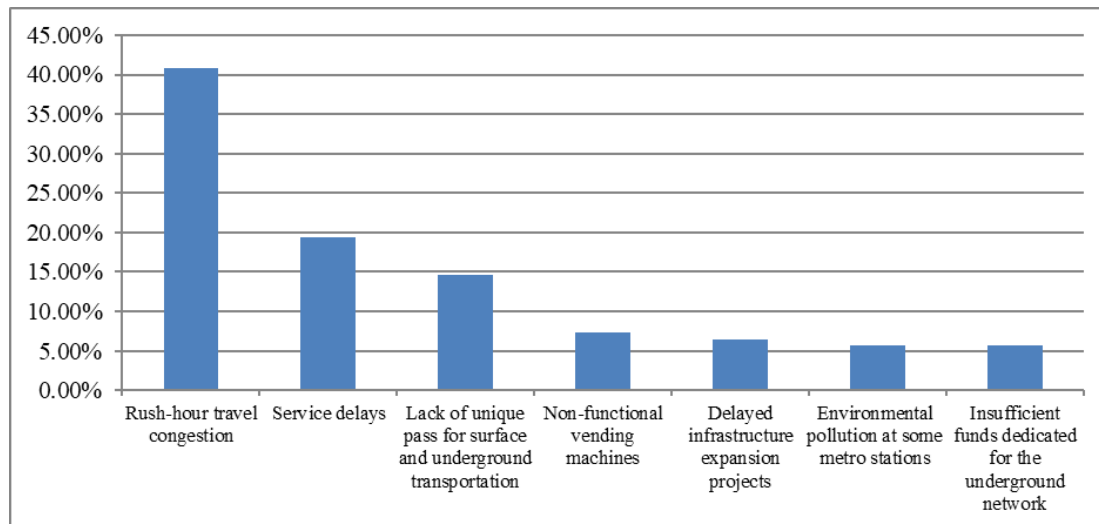
In order to conduct the survey, a number of 250 public transport users were interviewed within September 1<sup>st</sup> - September 30, 2019. From the total number of survey, 247 were considered valid. In terms of methodology, we used a mix of methods, respectively both online and off-line mode of administration. As a result, 143 answers were received online, and 104 from a traditional offline survey. Concerning the gender distribution, 53% of the respondents were males and 47% females. Explicitly, Table 1 presents the public transport negative characteristics resulted from the survey analysis.

*Table following on the next page*

*Table 1: Survey - Underground public transport network. (Author's own calculation)*

Public transport negative attributes	Repondents	% people
Rush-hour travel congestion	101	40.89%
Service delays	48	19.43%
Lack of unique pass for surface and underground transportation	36	14.57%
Non-functional vending machines	18	7.29%
Delayed infrastructure expansion projects	16	6.48%
Environmental pollution at some metro stations	14	5.67%
Insufficient funds dedicated for the underground network	14	5.67%
Total number of respondents	<b>247</b>	

As can be seen from Table 1, the most important aspect for transport users is the congestion encountered during rush hours. Specifically, 40.89% of the respondents appreciate this aspect as the main issue in underground transport. As an illustration, the graphic representation of the analysis is presented in Figure 1.

*Figure 1: Graphic representation. (Author's own calculation)*

Another key point that can be observed from Figure 1 is that service delays are the second most important negative aspect regarding the subway network, with a percentage of approximately 20%. On the other hand, with reference to the surface transportation system, the main issue for the respondents is the current absence of an online real time transport schedule.

*Table 2: Survey - Surface public transport network. (Author's own calculation)*

Public transport negative attributes	Repondents	% people
Absence of precise and online schedule transport modes	82	33.20%
Inadequate safety level	64	25.91%
Unsatisfactory number of buses	58	23.48%
Service delays during rush hours	28	11.34%
Cleanliness and general hygiene	15	6.07%
Total number of respondents	<b>247</b>	

We can see from the statistics that safety and security (25.91%) are also noteworthy attributes in the surface network, along with an unsatisfactory number of buses (23.48%). To put it differently, Figure 2 presents the graphic representation for the surface transit network.

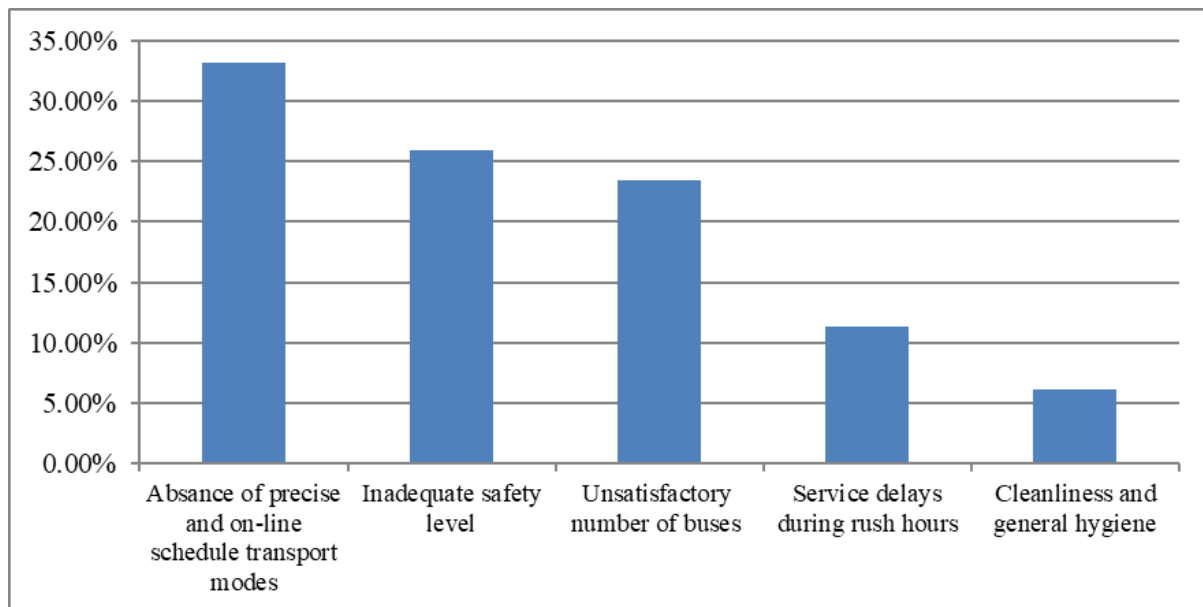


Figure 2: Graphic representation. (Author's own calculation)

In conclusion, when analyzing the figure above, one finds that the respondents wave completely different opinion when comparing surface with underground transportation. Finally, to complete the investigation of the survey it is important to essential to note that the findings are relevant for our research, as well as for transport operators or public authorities, that should implement a periodically quality assessments.

#### 4. CONSLUSION

The public transport networks in Bucharest are currently at a very decisive moment. On the one hand, they are facing serious challenges due to environmental constraints, population development and infrastructure expansion. At the same time, the transport operators need to provide high quality services, worthy of a modern European Capital, which will also increase the quality of life. As a result, in this paper we have used a quantitative research in order to investigate the public transport users opinions and their perception upon the transport services quality and characteristics. For this reason, we have used a survey research design for presenting our collection of data and information. The findings suggest that in general respondents are not satisfied with the current services, perceiving the current level of quality as only tolerable. Thus, according to the users opinion's 40.89% of the respondents are not content with the congestion at rush hour for metro and 19.43% of them perceived service delays as the main problem. Comparatively, 33.20% respondents identified absence of precise and online schedule for surface vehicles as the major issue. Furthermore, one of the themes to emerge from this study is that integrating service quality periodical assessment within transport operator and policy makers should be a main objective for public authorities. Nevertheless, future studies in this field are needed in order to obtain a more accurate and comprehensive examination. In conclusion such analysis could have a great impact on increasing service quality and users satisfaction.

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## **LITERATURE:**

1. Anderson, E., Sullivan, M. (1993). The Antecedents And Consequences Of Customer Satisfaction For Firms. *Marketing Science*, 12(2), 125-14.
2. Brog W., Kahn T. (2003). *Customer Satisfaction Surveys for Public Transport Companies - Greater Efficiency through more Demand Orientated Methods*. ECOMM, Karistad.
3. Fornell, C. (1992). A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*, 56(1), 6–21.
4. Rastogi, Rajat. 2011. Promotion of non-motorized modes as a sustainable transportation option: Policy and planning issues. *CURRENT SCIENCE. SPECIAL SECTION: SUSTAINABLE TRANSPORT*, 2011, Vol. 100, 9, pp. 1339-1348.
5. Ryus P., Vandehey M., Elefteriadou L., Dowling R.G., Ostrom B.K. (2010). *Highway Capacity Manual 2010*.
6. Shahin A. (2006). *SERVQUAL and Model of Service Quality Gaps: A Framework for Determining and Prioritizing Critical Factors in Delivering Quality Services*.
7. Sofia Elena COLESCA, Mihaela PACESILA, Stefan Gabriel BURCEA, Carmen Nadia CIOCOIU, Mihai BUGHEANU, (2017): 'Analysis of Passenger's Satisfaction with the Quality of the Public Transportation Mode Choices in Bucharest: A Fuzzy Approach', *Economic Computation and Economic Cybernetics Studies and Research*, 51 (4), 109-125.
8. Stead, Dominic, Pojani, Dorina. 2015. Sustainable Urban Transport in the Developing World: Beyond Megacities. *Sustainability*. 2015, Vol. 7.
9. USAID. (2011). *Customer Satisfaction Surveys Best Practice*.
10. Van der Wiele T., Van Iwaarden J., Ball L., Millen R. (2003). Applying SERVQUAL to websites: An exploratory study. *International Journal of Quality & Reliability Management*, 20(8), 919-935.
11. Zeithaml V.A., Parasuraman A., Berry L.L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: implications for future research, *Journal of Marketing*, 58, 111-124.

# ANALYSIS OF RESEARCH AND DEVELOPMENT (R&D) EXPENDITURES AS A SHARE OF GDP DURING 1998-2015 IN AZERBAIJAN

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## **ABSTRACT**

*This research paper examines a short run and long run link between R&D expenditures and GDP growth for the period of 1998-2015 in Azerbaijan using the World Bank's official data for GDP growth and R&D as a share of GDP. While the link between economic growth and R&D expenditures is considered positively, but the case of Azerbaijan is representing contrary results. The official data indicates that there is a continuous decline in R&D expenditures as a share of GDP up to 2015. Simultaneously, GDP growth was increased after high oil income in this period, especially in the period of 2001-2006. High revenues could be a great capital opportunity to invest more in public R&D activities and stimulate private R&D activities in order to achieve the transition from resource-based to the knowledge-based economy. Despite Azerbaijan faced a sharp increase in an economic growth because of high oil revenue after 2004, but the share of R&D expenditures in GDP continuously declined from 0.4% being in 1998 up to 0.2% in 2015. The analysis interprets the poor performance of Azerbaijan in R&D activities. Empirical results for Augmented Dickey-Fuller (ADF) test, Johansen Cointegration test, Unrestricted VAR model and Granger Causality Wald Test were applied to explain empirically the short run and long run causality of R&D expenditures and GDP growth. The aim to use different empirical analysis is to determine whether R&D expenditures and GDP growth are cointegrated in the long run or not and to define short-term causality between these variables. The final aim is to explain how they are associated over the period between 1998 and 2015.*

**Keywords:** GDP, economic growth, research and development

## **1. INTRODUCTION**

More than the last two decades Azerbaijan strived to make a transition from a centralized economic system to the capitalist system. Privatization process and new conditions of domestic competition enforced the government, firms, and academia to increase expenditures on Research and Development (R&D). Official data presented by World Bank indicates that this process was not sustainable. Its main reasons mainly were the work of ineffective institutions and a low level of competition in different industries of the economy. Afterward, the high dependency of the national economy on natural resources stagnated the R&D intensity. This is a typical challenge for resource-based economies and it should stimulate them to realize a transition to the knowledge-based economic system. It accelerates investment in different factors of production as an improvement in Total Factor Productivity (TFP), especially in technology. Romer (1986) explains the theoretical framework of endogenous growth. Technology deeply associated with R&D activities and interrelation between TFP and R&D is important for developing countries (Ang J, Madsen J, Islam R, 2011). The case of Azerbaijan explains that unstable progress in the national economy negatively influenced the firms, academia and decreased their competence. As a result, R&D expenditures after a slight growth as a share of GDP then started continuously decrease up to now. It is also important to note that total R&D expenditures include both public and private R&D investments. According to the official data of World Bank, the share of R&D expenditures in GDP was 0.23% (World Bank, 2018) in 1996, then increased to the point of 0.42% in 1998 and then decreased unceasingly up

to the 2015 year being as 0.2%. During this period Azerbaijan faced a sharp increase in GDP, especially since 2005 after high oil exports up to oil price decline in the global oil market. High dependency on oil prices made the Azerbaijan economy less sustainable and more sensitive to the external political and economic factors. Simultaneously, high oil income opened new opportunities in front of the government of Azerbaijan to invest more in R&D and human capital in order to build a sustainable economy and stimulate firms, academic field to develop their competency. R&D expenditures in the public and private sector after high oil income were not developed sufficiently. According to the official data of the World Bank, Azerbaijan economy faced a development in GDP after 2005. (World Bank, 2018) At the same time, R&D spending is a very important indicator to measure the level of innovativeness and productivity of the country. Manuel (2002) mentions the significance of R&D expenditures to achieve sustainable development. During high oil incomes Azerbaijan was able to invest more in knowledge, technology, and innovations, but the share of R&D spending increased from 1996 to and 1998 and continuously decreased since 1998 up to 2015. The research question is: Is there a long run causality between GDP growth and R&D expenditures from 1998 up to 2015 in Azerbaijan? This research question is able to open new opportunities to investigate further topics to R&D policies and Innovation Systems in Azerbaijan. The limitations of this study are the lack of access to direct information about the R&D spending and policies of state and firms. Also, insufficiency of official data for R&D intensity, R&D expenditures in Azerbaijan is the other part of limitations. The motivation of this paper was the need to test the R&D activities and its effectiveness in Azerbaijan. In order to prove the primary claim about R&D activities, two hypotheses were represented. The hypothesis is: R&D expenditures and GDP growth are not co-integrated in long run. Two variables such as R&D expenditures as a share of GDP and economic growth will be used empirically to test the hypothesis.

## 2. LITERATURE REVIEW

Previous studies in R&D expenditures of Azerbaijan were mainly based on the explanation of sectoral differences in this field. World Bank Research Group (2018) conducted an investigation about the role of Higher Education Institutions (HEIs) in Innovation, taking into consideration R&D expenditures of Azerbaijan. This research focuses on the dominant role of the public sector in R&D activities and mentions the small share of R&D expenditures in GDP. The authors compare R&D statistics of Azerbaijan with neighbors, transition and developed economies and conclude the higher participation of government (85%) in R&D activities than private sector (5%) and HEIs (9%). In developed countries the share of private R&D is at least 50% of the total R&D activities in a country. Also, R&D activities are not directed towards the applied research, which is able to develop the production in the country and directly affect economic growth. Another important argument is that connectivity of the R&D activities of Azerbaijan with the international research networks is not developed. Kheyfets, I. (2018) indicates ineffective R&D policies in Azerbaijan, comparing R&D expenditures of the country with other developing and OECD countries. The author mentions emerging innovation ecosystem and incompetent public and private R&D activities. This research compares expenditures in R&D activities as a share of GDP in Azerbaijan and explores the data that represents the difference between Azerbaijan and with some neighbor countries. World Bank Research Group (2013) examines entrepreneurial activities and analyzes R&D activities of existing firms in Azerbaijan. Using World Bank Entrepreneurship (2012) data the author mentions that the 97% of surveyed firms had no R&D spending last five years and had no plans at least for the next two years for the R&D activities. This investigation clearly shows poor private R&D performance in Azerbaijan, as the other studies introduced above also represents low share of private R&D in total. Lichtenberg F.R. (1992), Jones, C. (1995), Aghion P., & Howitt P., (1998) Frantzen D., (2000) Rachel G., Redding S., & Van Reenen J., (2001), Gurbiel

(2002), Savrul, M. and Incekara, A. (2015), Bozkurt, C. (2015), Cin, B.C., Kim, Y.J. & Vonortas, N.S. Small Bus Econ (2017) analyzed different cases and showed that in general, there is a positive correlation between expenditures on R&D and Economic Growth in the long run. Lichtenberg F.R. (1992) focuses on previous investigations about investment on labor productivity, R&D and human capital. Using statistical tools the author analyzed the link between R&D investment and final productivity. One of the main results of this work was the significant relationship between private R&D spending and productivity. (Lichtenberg, p.26) The other main finding of this work was the importance of national private R&D investment's positive impact on productivity in a comparison with international R&D investment. Bozkurt, C. (2015) tested the relationship between R&D investment and economic growth in Turkey using the data between 1998 and 2013. The author explains the results using the Johansen cointegration test. This investigation stresses the mutual interaction of R&D activities and economic development, mentions the importance of the government's spending on R&D and the significance of investment in human capital in developing countries. Gumus, E. & Celikay, F. (2015) examined the connection between R&D expenditures and economic growth conducting an empirical analysis. In order to explain the relationship between R&D spending and economic growth, they use the data from 52 countries for the period from 1996 to 2010. One of the main results was the finding of a long run positive effect of R&D on GDP growth of both developed and developing countries. They suggest developing countries invest more in R&D in order to achieve sustainable and significant economic growth. Sokolov-Mladenović, S., Mladenović, I. (2016) investigate EU28 countries to explain the impacts of R&D expenditure on economic growth during 2002-2012. To explain this relationship multiple regression was constructed and this regression explained *ceteris paribus*, as expenditures in R&D as a share of GDP increase by 1%, it positively affects GDP growth by 2.2%. These empirical results show the significance of investment in R&D in the long run and interconnection of R&D expenditures and GDP growth. The number of previous investigations about R&D expenditures of Azerbaijan is limited. It creates a challenge in front of investigators to examine R&D intensity and the dynamics of R&D investments in Azerbaijan. In this regard, this paper is pretended to be an important investigation for further analysis.

### 3. METHODOLOGY

This study is aimed to investigate the factors, which affected the share of R&D expenditures in GDP of Azerbaijan between 1998 and 2015. Qualitative and quantitative research methods were used to achieve this goal. It includes different tools such as data collection and analysis. To justify the argument of decline in R&D expenditures as a share of GDP empirical evidence is needed. Empirical results better explain the relationship between GDP and R&D activities. Empirical result is one of the main parts of this research paper. In order to have empirical evidence, Augmented Dickey-Fuller (ADF) test, Johansen cointegration test and unrestricted VAR model were used. ADF test was applied to check whether the chosen variables are stationary or non-stationary. Johansen test for cointegration was used to analyze the long run relationship between GDP growth and R&D expenditures as a share of GDP. According to the Johansen cointegration test, trace and  $\lambda$ -max statistics were tested to determine whether the relationship between variables is cointegrated or not. As Johansen cointegration test presents two variables such as GDP growth and R&D expenditures as a share of GDP are not cointegrated, the next step was to run unrestricted VAR model in order to analyze whether short run causality exists or not. Data collection and analysis: Data for R&D expenditures, GDP growth in Azerbaijan during 1998-2015 and their analysis are the main tools of data collection. Data by World Development Indicators (WDI) were used as the main source of analysis. Reliable data for GDP growth and R&D share in GDP of Azerbaijan is open only for the period between 1998 and 2015. It was the main limitation to achieve more reliable results.



#### 4. ANALYSIS OF OFFICIAL DATA FOR GDP GROWTH, R&D EXPENDITURES

According to the data introduced by World Development Indicators (WDI) of World Bank, while Azerbaijan faced a continuous recession in R&D expenditure as a share of GDP, from 0.42% to 0.22% (Figure 1) during 1998 and 2015, but at the same time country realized a significant growth in GDP during 1998 and 2009, from 10% to 9.4%. Especially, a sharp increase in GDP was observed in 2005 (26.4%) and 2006 (34.4%). (Figure 2) Oil revenue was the main source of this significant growth. (World Bank, 2018) The same was observed in GDP per capita growth during the same time period. (Figure 3) That was a deceptive trend to analyze real economic development in Azerbaijan. That trend was typical and natural for a country such as Azerbaijan because the country started to get the returns of oil exports as a result of oil contracts with international companies.

*Table 1: R&D spending as a share of GDP; GDP growth; GDP per capita growth between 1998 and 2015 in Azerbaijan*

Years	R&D as % of GDP	GDP growth	GDP per capita growth
1998	0.42%	10.00000028	8.960887423
1999	0.39%	7.400000582	6.461583364
2000	0.34%	11.09999925	10.19102938
2001	0.34%	9.9	9.051822172
2002	0.30%	10.5999992	9.777802547
2003	0.32%	11.20000024	10.36067596
2004	0.30%	10.2000004	9.239489951
2005	0.22%	26.40000081	25.11443921
2006	0.17%	34.49999951	33.03048728
2007	0.17%	25.04899952	23.63913264
2008	0.17%	10.77242078	8.470613513
2009	0.25%	9.410653764	7.162544171
2010	0.22%	4.854339324	3.6141875
2011	0.21%	0.065922768	-1.229479184
2012	0.22%	2.200000188	0.850986009
2013	0.21%	5.796678396	4.437066291
2014	0.21%	2	0.734739796
2015	0.22%	1.099999809	-0.097168804

*Source: World Development Indicators (WDI) of World Bank dataset*

#### 5. AUGMENTED DICKEY-FULLER (ADF) TEST

ADF test analyses null hypothesis of unit root for non-stationary and stationary. The model of ADF testing is:

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \dots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t$$

Here:

$\alpha$  is constant,

$\beta$  is the coefficient on a time trend

$p$  is the lag order of autoregressive process

#### 6. JOHANSEN COINTEGRATION TEST

Johansen (1988) cointegration test model was used to analyze long run relationship between GDP growth and R&D expenditures as a share of GDP in Azerbaijan from 1998 to 2015. This method is important to analyze long-term relationship between variables.

The model is based on:

$$\Delta X_t = \mu + \sum_{i=1}^{p-1} \Gamma_i \Delta X_{t-i} + \Pi X_{t-1} + \varepsilon_t$$

Here:

$X_t$  is a column vector of  $p$  variables,

$\mu$  is vector of constant terms,

$\Delta$  is a difference operator,

$\Gamma$  and  $\Pi$  shows coefficient matrices,

$k$  indicates lag length,

$\varepsilon_t$  is  $p$ -dimensional Gaussian error

Johansen cointegration test has two main ratio tests: the trace test and  $\lambda$  – maximum test. (Österholm, P., Hjalmarsson, E., 2007, p.5) These two ratio tests have different equations.

The trace test is:

$$J_{trace} = -T \sum_{i=r+1}^n \ln(1 - \lambda_i)$$

$\lambda$  – Maximum test is:

$$J_{max} = -T \ln(1 - \lambda_{r+1})$$

## 7. EMPIRICAL RESULTS

Empirical results were conducted through the implementation of different tests such as Augmented Dickey-Fuller (ADF) test, Johansen Cointegration test, Unrestricted VAR model and Granger Causality Wald Test using official data by World Development Indicators (WDI). Below, the empirical results are presented, which explains a short and long run relationship between R&D expenditures and GDP growth in Azerbaijan. This is an empirical evidence to test the first hypothesis, which claimed that there is no cointegration between two chosen variables in the long run.

## 8. RESULTS OF AUGMENTED-FULLER (ADF) TEST

Firstly, the Augmented Dickey-Fuller (ADF) test was used to have integration analysis of different variables. Table 2 and Table 3 present the main results of the ADF test. The first model has only intercepted. The second model has a trend and intercept. Two different test results show that we accept the null hypothesis because in both models test statistics is less than 5% critical value. Both test statistics and critical value results are considered an absolute value and ignore the negative sign. As a final result,  $Y$  has a unit root and it is non-stationary.

## 9. JOHANSEN COINTEGRATION TEST RESULTS

In order to analyze long run association of GDP growth and R&D expenditures as a share of GDP, Johansen cointegration test was applied using two main variables as *rdasofgdp* and *gdpgrowth*. Below table 4 indicates empirical results for the long run (1998-2015) relationship between GDP growth and R&D spending as a share of GDP in Azerbaijan. According to the Johansen test for cointegration, the relationship was analyzed using trace and  $\lambda$ -max statistics. Below in table 4, the results for trace and  $\lambda$ -max statistics are presented.

In both results, the first column shows the maximum ranks from 0 to 3. It means that, if max rank is 0, then there is no cointegration among variables. So it is a Null Hypothesis. Also, there is the ALT hypothesis, which shows a cointegration among variables. If max rank is 2, then there are two cointegration, if max rank is 3, then there are three cointegration. Firstly, to check trace statistics results in order to analyze the long run relationship between the two variables. Under 0 max rank, if trace statistics is more than a critical value, it rejects the Null hypothesis, and so, rejecting that there is no cointegration. Also, if trace statistics is less than a critical value, then it is not possible to reject the Null hypothesis. Hence, according to the table 4, for 0 max rank, trace statistics (12.0591) is less than a critical value (15.41) and it means there is no cointegration between two variables (GDP growth and R&D as a share of GDP) in the long run. As 1 max rank means that there is one cointegration between variables, if trace statistics is less than a critical value, then it is not possible to reject the Null hypothesis. If trace statistics is more critical value, then there is the Null hypothesis. According to the table 4, under 1 max rank, trace statistics (5.1008) is more than a critical value (3.76) and there is Null hypothesis, which means there is no cointegration between two variables in the long run. Secondly, in order to check  $\lambda$ -max statistics, the method is the same as in trace statistics. According to the table 4, under 0 max rank,  $\lambda$ -max statistics (6.9584) is less than a critical value (14.07) and it means there is no cointegration between two variables (GDP growth and R&D as a share of GDP) in the long run. Also, for 1 max rank,  $\lambda$ -max statistics (5.1008) is more than a critical value (3.76) and there is Null hypothesis, which means there is no cointegration between two variables in the long run. In other words, the results show that two variables, GDP growth and R&D expenditures as a share of GDP have no significant relationship in the long run.

## 10. UNRESTRICTED VAR MODEL

Previous Johansen cointegration test showed that two variables such as GDP growth and R&D expenditures as a share of GDP are not cointegrated in the long run in the case of Azerbaijan. Now it is possible to run unrestricted VAR model. The results of VAR regression are presented in Table 5. According to the empirical analysis, there is no long run causality, because previous Johansen cointegration test explained that there is no long run association of GDP growth and R&D expenditures as a share of GDP. In this model short run causality running from the independent variable to the dependent variable can be analyzed. As the main results of the test *gdpgrowth* lag 1 variable is significant to explain dependent variable *rdasgdp*, because here probability value is 0.001 (0.1%), which is less than 5%. In order to check short run causality between variables, Ganger Causality Wald Test can be applied.

## 11. GRANGER CAUSALITY WALD TEST RESULTS

Using Granger Causality Wald Test (table 6), short run causality between GDP growth and R&D expenditures as a share of GDP in Azerbaijan was analyzed. Before, cointegration analysis showed that there is no long run causality and there was a need to test a short run causality. Granger Causality Wald Test results show that the probability value is 0.002 (0.2%), it is less than 5%, meaning that we can reject the null hypothesis. It means that there is a short run causality running from GDP growth to R&D expenditures as a share of GDP. So, taking into consideration that short run causality between GDP growth to R&D expenditures as a share of GDP between 1998 and 2015 in Azerbaijan exist. Also, test results show that there is no short run causality running from R&D expenditures as a share of GDP to the GDP growth, because probability value, 0.296 (29.6%) is more than 5%.

## 12. MAIN FINDINGS

To check the short run and long run causality between variables such as R&D as a share of GDP (*rdasgdp*) and GDP growth (*gdpgrowth*), different tests like Augmented Dickey-Fuller

(ADF) test, Johansen Cointegration Test, Unrestricted VAR test and Granger Causality Wald test were implemented. The final results of this analysis were no relationship in the long run between variables, but only short run causality between them. This result is significant to explain how the broken link between R&D expenditures and GDP growth exist in Azerbaijan from 1998 up to the 2015, which was chosen as the period of time. Analysis of previous investigations conducted by World Bank Research Group (2013, 2018), and Kheyfets, I. (2018) showed that the government manages the majority of R&D activities in Azerbaijan and these R&D activities are not directed towards applied research. The high share of public R&D (85%) (Figure 4) also creates inefficiency in the long run. Private sector performs poorly in R&D activities, especially the great part of small and medium-sized enterprises (SMEs) is ineffective in their R&D policies, and only some big firms are conducting R&D activities. Insufficiency of R&D spending becomes an important issue to explain the poor performance of Azerbaijan.

### 13. CONCLUSION

Taking into consideration the main finding of the empirical tests, the reasons of decline in R&D expenditures as a share of GDP from 1998 up to 2015 are now much more clear. The results show that during this period of time, even Azerbaijan's total income significantly increased, but R&D expenditures of public and private sectors did not rise considerably. Ineffective political and economic institutions, low level of investment in education and science, the lack of National Innovation System (NIS), low level of domestic competition periodically weakened R&D intensity in Azerbaijan. The poor performance in R&D activities can be explained with the lack of accurate technology policies of government and the lack technological vision of the national firms and research institutions. The lack of NIS and innovation ecosystem is the crucial point to explore R&D activities in Azerbaijan. It would be useful to conduct further research on the relationship between R&D expenditures as a share of GDP and economic growth in Azerbaijan. Because there is a need to conduct the surveys in public and private sectors in order to check their efforts on R&D activities and to measure the level of development in this field. This research paper focused on the very short time interval statistics, because of the lack of reliable data. This is the main limitation of the paper, which could affect even the empirical results and final outcome.

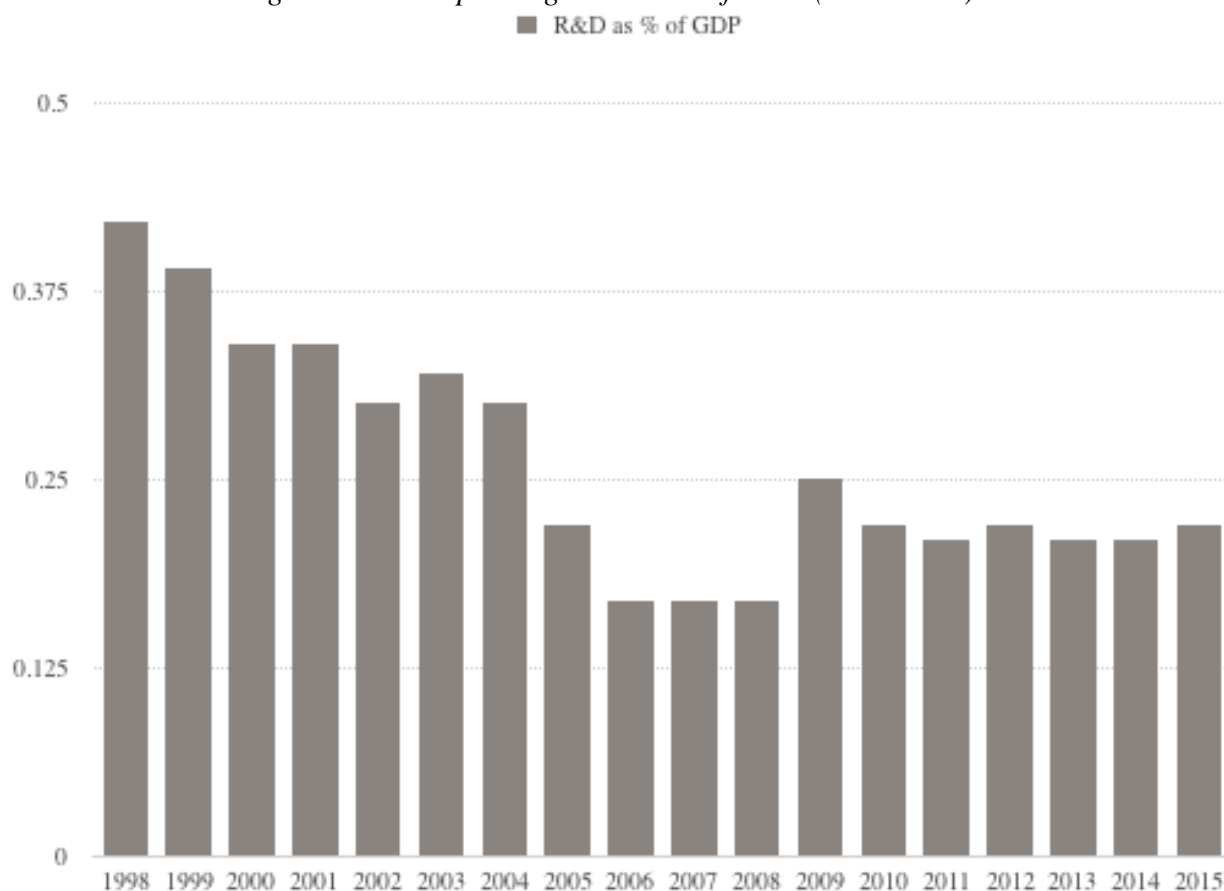
### LITERATURE:

1. Aghion P., & Howitt P., (1998) "Endogenous Growth Theory," (Cambridge, Massachusetts: The MIT Press).
2. Ang J, Madsen J, Islam R (2011) The Effects of human capital composition on technological convergence. *J Macroecon* 33(3): 465–476
3. Bozkurt, C. (2015). R&D Expenditures and Economic Growth Relationship in Turkey, *International Journal of Economics and Financial Issues* Vol. 5, No. 1, 2015, pp.188-198
4. Cin, B.C., Kim, Y.J. & Vonortas, N.S. Small Bus Econ (2017) The impact of public R&D subsidy on small firm productivity: evidence from Korean SMEs
5. Gumus, E. & Celikay, F. (2015). R&D Expenditure and Economic Growth: New Empirical Evidence. *The Journal of Applied Economic Research*, 9(3), 205–217. <http://dx.doi.org/10.1177/0973801015579753>
6. Gurbiel, R. (2002). Impact of innovation and technology transfer on economic growth: The Central and Eastern Europe Experience, Warsaw School of Economics, pp. 1-18 ISSN: 2146-4138, [www.econjournals.com](http://www.econjournals.com)
7. Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(4), 231-254.
8. Jones, C. (1995). Time Series Tests of Endogenous Growth Models. *The Quarterly Journal of Economics*, 110(2), 495-525. Retrieved from <http://www.jstor.org/stable/2118448>

9. Kheyfets, I. (2018) Higher education institutions as drivers of innovation and growth in Azerbaijan.  
<http://blogs.worldbank.org/europeandcentralasia/higher-education-institutions-drivers-innovation-and-growth-azerbaijan>
10. Lichtenberg F.R., (1992), R&D Investment and International Productivity Differences, Working Paper No. 4161.
11. Manuel, F. (2002) Proposed Standard Practice for Survey on Research and Experimental Development, OECD Publication Service, Paris, France.
12. Österholm, P., Hjalmarsson, E. (2007). Testing for Cointegration Using the Johansen Methodology when Variables are Near- Integrated. IMF Working Paper, WP/07/141
13. Rachel G., Redding S., & Van Reenen J., (2001) “Mapping the Two Faces of R&D: Productivity Growth in a Panel of OECD Countries,” The Institute for Fiscal Studies, Working Paper, 02/00 (London, United Kingdom: The Institute for Fiscal Studies).
14. Romer, P. (1986) Increasing returns and long-run growth. *Journal of Political Economy*, 94, 1002-1037
15. Savrul, M. and Incekara, A. (2015), “The effect of R&D intensity on innovation performance: a country level evaluation”, *Procedia – Social and Behavioral Sciences*, Vol. 210 No. 1, pp. 388-396
16. Sokolov-Mladenović, S., Mladenović, I. (2016) R&D expenditure and economic growth: EU28 evidence for the period 2002–2012, *Economic Research-Ekonomska Istraživanja*, 29:1, 1005-1020, DOI: 10.1080/1331677X.2016.1211948
17. World Bank (2018) The Role of Higher Education in Innovation, Azerbaijan.  
<http://pubdocs.worldbank.org/en/496791540241839037/pdf/Policy-Note-Azerbaijan-The-Role-of-Higher-Education-in-Innovation-Oct-2018.pdf>
18. World Bank (2018). Research and development expenditure as % of GDP. Derived from [https://tcdata360.worldbank.org/indicators/GB.XPD.RSDV.GD.ZS?country=AZE&indicator=2013&viz=line\\_chart&years=1998,2015&indicators=944](https://tcdata360.worldbank.org/indicators/GB.XPD.RSDV.GD.ZS?country=AZE&indicator=2013&viz=line_chart&years=1998,2015&indicators=944)
19. World Bank (2013) International Bank for Reconstruction and Development / Smita Kuriakose, pp.29-31.  
<http://documents.worldbank.org/curated/en/863421468221975050/pdf/810480PUB0Fost0Box379819B000PUBLIC0.pdf>

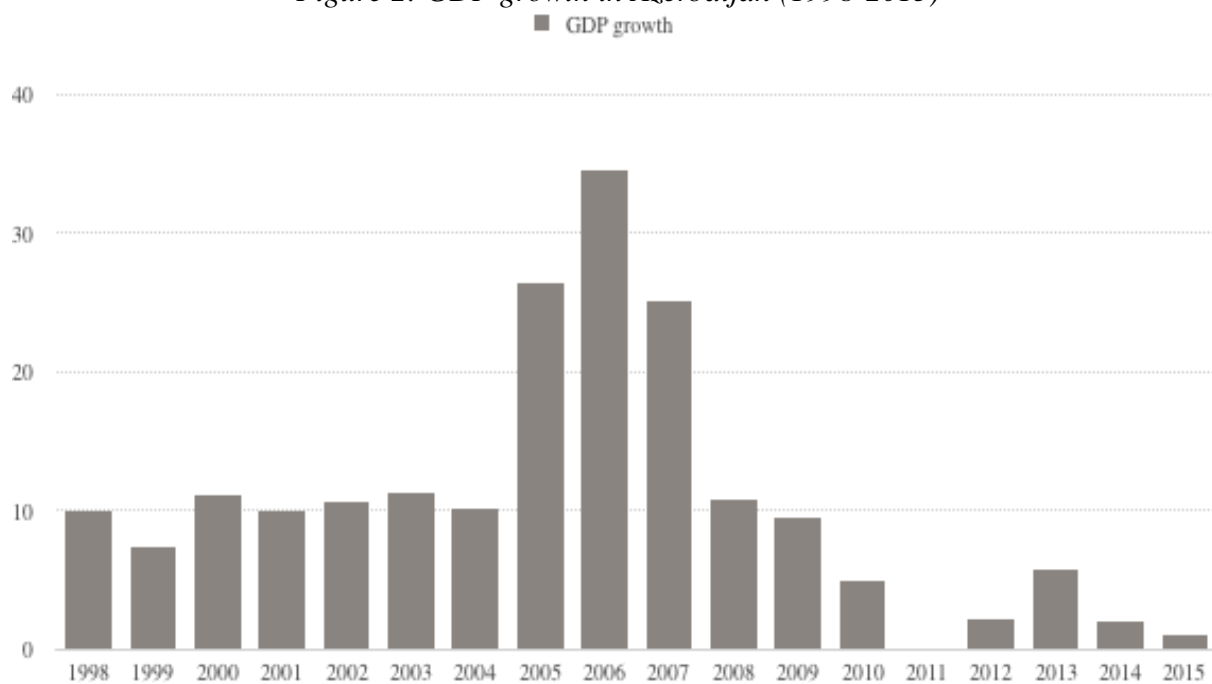
## APPENDIX

Figure 1: R&D spending as a share of GDP (1998-2015)



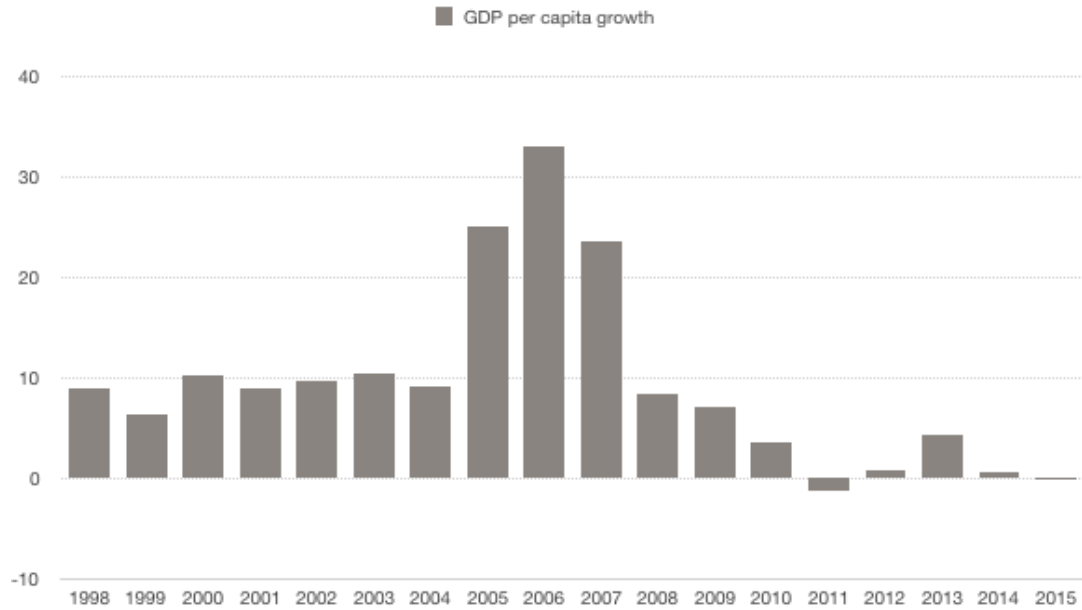
Source: created by author, based on the data by World Bank dataset

Figure 2: GDP growth in Azerbaijan (1998-2015)



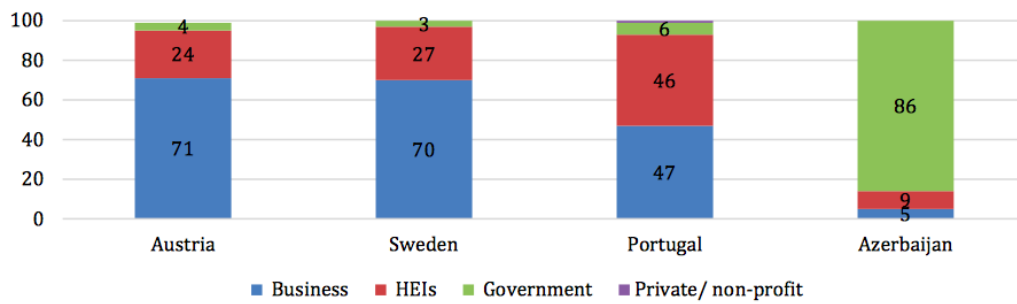
Source: created by author, based on the data by World Bank dataset

Figure 3: GDP per capita growth in Azerbaijan (1998-2015)



Source: created by author, based on the data by World Bank dataset

Figure 4: Sectoral investment in R&D



Source: World Bank (2018) *The Role of Higher Education in Innovation, Azerbaijan*, page 9  
<http://pubdocs.worldbank.org/en/496791540241839037/pdf/Policy-Note-Azerbaijan-The-Role-of-Higher-Education-in-Innovation-Oct-2018.pdf>

Table 2: ADF – first model

Dickey-Fuller test for unit root Number of obs = 17

Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-1.528	-4.380	-3.600	-3.240

MacKinnon approximate p-value for Z(t) = 0.8195

D.rdasofgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rdasofgdp						
L1.	-.2699444	.1767101	-1.53	0.149	-.6489498	.1090611
_trend	-.0007603	.0027485	-0.28	0.786	-.0066554	.0051347
_cons	.0658989	.0684431	0.96	0.352	-.0808969	.2126947

Table 3: ADF – second model

Dickey-Fuller test for unit root Number of obs = 17

Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-2.302	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.1713

D.rdasofgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rdasofgdp L1.	-.2302741	.1000242	-2.30	0.036	-.4434708	-.0170775
_cons	.0486484	.0273261	1.78	0.095	-.0095958	.1068926

Source: created by author

Table 4: Results for Johansen cointegration test

```
. tsset obs, yearly
      time variable: obs, 1998 to 2015
      delta: 1 year
```

```
. vecrank rdasofgdp gdpgrowth, trend(constant) max
```

Johansen tests for cointegration

```
Trend: constant Number of obs = 16
Sample: 2000 - 2015 Lags = 2
```

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	6	-16.874585	.	12.0591*	15.41
1	9	-13.395397	0.35267	5.1008	3.76
2	10	-10.845019	0.27298		

maximum rank	parms	LL	eigenvalue	max statistic	5% critical value
0	6	-16.874585	.	6.9584	14.07
1	9	-13.395397	0.35267	5.1008	3.76
2	10	-10.845019	0.27298		

Source: created by author



*Table 5: Unrestricted VAR model*

Vector autoregression

Sample: **2001 – 2015**  
Log likelihood = **-5.464584**  
FPE = **.0537215**  
Det(Sigma\_ml) = **.0071037**  
No. of obs = **15**  
AIC = **2.595278**  
HQIC = **2.588238**  
SBIC = **3.256125**

Equation	Parms	RMSE	R-sq	chi2	P>chi2
rdasofgdp	<b>7</b>	<b>.030193</b>	<b>0.8279</b>	<b>72.15524</b>	<b>0.0000</b>
gdpgrowth	<b>7</b>	<b>6.85104</b>	<b>0.7378</b>	<b>42.21261</b>	<b>0.0000</b>

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
<b>rdasofgdp</b>						
rdasofgdp						
L1.	<b>.239955</b>	<b>.2465247</b>	<b>0.97</b>	<b>0.330</b>	<b>-.2432246</b>	<b>.7231345</b>
L2.	<b>.0574452</b>	<b>.2435649</b>	<b>0.24</b>	<b>0.814</b>	<b>-.4199332</b>	<b>.5348236</b>
L3.	<b>.4412666</b>	<b>.2142866</b>	<b>2.06</b>	<b>0.039</b>	<b>.0212727</b>	<b>.8612606</b>
gdpgrowth						
L1.	<b>-.0039426</b>	<b>.0012034</b>	<b>-3.28</b>	<b>0.001</b>	<b>-.0063012</b>	<b>-.0015841</b>
L2.	<b>.0011702</b>	<b>.0014767</b>	<b>0.79</b>	<b>0.428</b>	<b>-.0017241</b>	<b>.0040646</b>
L3.	<b>.0018527</b>	<b>.0011517</b>	<b>1.61</b>	<b>0.108</b>	<b>-.0004047</b>	<b>.0041101</b>
_cons	<b>.0524929</b>	<b>.0316288</b>	<b>1.66</b>	<b>0.097</b>	<b>-.0094985</b>	<b>.1144843</b>
<b>gdpgrowth</b>						
rdasofgdp						
L1.	<b>-38.66515</b>	<b>55.93927</b>	<b>-0.69</b>	<b>0.489</b>	<b>-148.3041</b>	<b>70.9738</b>
L2.	<b>76.27935</b>	<b>55.26765</b>	<b>1.38</b>	<b>0.168</b>	<b>-32.04326</b>	<b>184.602</b>
L3.	<b>-8.109509</b>	<b>48.62407</b>	<b>-0.17</b>	<b>0.868</b>	<b>-103.4109</b>	<b>87.19192</b>
gdpgrowth						
L1.	<b>1.04525</b>	<b>.2730591</b>	<b>3.83</b>	<b>0.000</b>	<b>.5100638</b>	<b>1.580436</b>
L2.	<b>-.5757814</b>	<b>.3350913</b>	<b>-1.72</b>	<b>0.086</b>	<b>-1.232548</b>	<b>.0809854</b>
L3.	<b>.3177828</b>	<b>.261343</b>	<b>1.22</b>	<b>0.224</b>	<b>-.19444</b>	<b>.8300057</b>
_cons	<b>-6.078234</b>	<b>7.176944</b>	<b>-0.85</b>	<b>0.397</b>	<b>-20.14479</b>	<b>7.988317</b>

*Source: created by author*

*Table 6: Granger Causality Wald Test*

Equation	Excluded	chi2	df	Prob > chi2
rdasofgdp	gdpgrowth	<b>14.362</b>	<b>3</b>	<b>0.002</b>
rdasofgdp	ALL	<b>14.362</b>	<b>3</b>	<b>0.002</b>
gdpgrowth	rdasofgdp	<b>3.7016</b>	<b>3</b>	<b>0.296</b>
gdpgrowth	ALL	<b>3.7016</b>	<b>3</b>	<b>0.296</b>

*Source: created by author*

# INTEGRATED URBAN REVITALIZATION AND THE NEW LEGAL CONDITIONS FOR THE DEVELOPMENT OF HOUSING POLICY IN POLAND ON THE EXAMPLE OF THE CITY OF ŁÓDŹ

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## ABSTRACT

*After many years of public consultations in Poland, in October 2015, the government adopted a document called the National Urban Policy and the Polish parliament passed a law on the revitalization. The adopted solutions pointed to the directions of further development of cities in Poland and the fundamental role of revitalization in the state's housing policy. These solutions remained consistent with the European policy for integrated urban development and integrated urban revitalization. In the year of 2015 the new government has announced numerous, but also long-awaited, social reforms. Among them, one points to deep reforms of the state's housing policy. The new Polish government has accepted on September 27, 2016 a document called the National Housing Program. There were also adopted legal Acts to facilitate large-scale new housing projects. The article looks for an answer to the question about the position of revitalization in the current urban policy in Poland on the example of one of the largest cities in Poland, i.e., a post-industrial city of Łódź with over 600,000 inhabitants. The interdisciplinary studies presented in this article were based on Polish and EU legal acts and strategic local and national documents. They were carried out by using the comparative and dogmatic methods. The article points out that existing assumptions of revitalization remain inconsistent with the development of new housing policy in Poland. Authors set the direction of the proposed legal changes so that the revitalization processes do not slow down, and many years of legislative work on revitalization are not wasted.*

**Keywords:** *new housing policy in Poland, revitalization, urban policy in Poland*

## 1. INTRODUCTION

In 2016, due to the change in the direction of politics in Poland and the assumption of power by the conservative-socialist group Law and Justice, the popularity of revitalization in Poland declined. It coincided with the end of financial programming for Poland from EU funds, in which revitalization played a significant role due to its importance in the integrated urban policy of the European Union. The new Polish government closely connected urban policy with housing policy, responding to the urgent housing needs of Poles. In connection with the migration crisis, also in the European Union countries proper housing policy is beginning to play an increasingly important role. The article presents the relationship between housing policy and revitalization policy, which is still poorly perceived and justified both in the literature on the subject, as well as in Polish politics and law. The article seeks to answer the question about the importance of large-scale housing policy for revitalization and for urban policy in general. The article indicates in particular that the right combination of both urban policies can be crucial for a more effective revitalization that is unpredictable in time and the financial resources needed. Research in this area was based on the authors' experience in creating a revitalization program for Łódź and on the example of this city as a special and important one for creating both housing and revitalization policy on a European and global scale.

The research had an interdisciplinary legal and urban character. The research methods used in the article include literature studies and dogmatic studies of documents and legal acts adopted at the local, national and EU level. The conclusions were formulated in the form of postulates for changes in key documents and legal acts regarding urban policy and its financing.

## **2. THE RESULTS OF INTERDISCIPLINARY LEGAL AND URBAN RESEARCH**

1. National Urban Policy - a document specifying the planned activities of government administration regarding urban policy and taking into account the goals and directions set out in the medium-term national development strategy and the national regional development strategy should be supplemented with housing policy correlated with other urban policies, in particular with urban revitalization. Financial outlays on housing policy should also take into account urban revitalization, and revitalization policy should look for incentive mechanisms for social participation, including financial participation.
2. The scale of needs as well as EU and national funds allocated for revitalisation in one of the largest post-industrial Polish cities - Łódź, remain uncorrelated with the huge renovation needs of flats located in the area of revitalisation in this city. The example of Łódź proves that Polish housing policy on a national scale does not sufficiently appreciate the existing but degraded housing potential in city centres, most often indicated as an area that urgently needs revitalization.

## **3. DISCUSSION**

### **3.1. Revitalization and urban policy in Poland until 2016**

Until 2016, Poland experienced the so-called revitalization boom. Interest in revitalization processes, especially in the periods of financial programming from the European Union after 2013, when a broad understanding of revitalization was required to obtain EU funds (going beyond just renovation), was enormous. This interest allowed the perception of revitalization as one of the key aspects of urban policy. This interest justified, in addition to significant EU funding, in particular the emphasis on the participatory nature of revitalization policy. Social participation meant a change in the manner of exercising public authority in local governments, through a greater, active presence of society in this exercise. This circumstance, undoubtedly attractive from the point of view of the greater presence of non-governmental organizations in exercising local government power, in the opinion of the authors, has become the driving force of the popularity of revitalization in Poland. However, other circumstances were also significant, such as the integrated (multidimensional: social, economic, spatial and temporal nature) of revitalization, or the need to renew old urban resources, most often present in degraded city centers (Skalski, 1996, p. 15). The huge interest in revitalization led to the adoption on October 9, 2015 of the Act on revitalization (Act on Revitalization, 2015), and adoption on October 20, 2015 National Urban Policy (hereinafter NUP), (National Urban Policy, 2015). NUP has defined the goal of revitalization as a sustainable, social and economic revival of the revitalized area, increasing its attractiveness for residents and entrepreneurs, and improving the quality of life. The specific objectives were: protection of cultural heritage, social integration and economic activation. In this way, Polish urban policy corresponded to the EU urban policy and its participatory assumptions, which were already present in the Leipzig Charter of 2007 (the policy of "reconciliation of interests"), (Leipzig Charter, 2007), and then in the Toledo Declaration of 2010 (Toledo Declaration, 2010). The latter even indicated the role of integrated urban revitalization, located in the more extensive context of integrated urban development, as a strategic tool for achieving the goals of the Europe 2020 Strategy in existing urban structures and the urban environment. Revitalization in the participatory and integrated EU approach seems to have become a pilot process for introducing similar changes on a larger scale in urban policy.

Solutions in the area of participation and an integrated approach, tested in revitalization, could find their later application in other areas of urban policy (Tylman, 2017, p. 212). According to the authors, social participation has become the driving force of revitalization for a reason. Strengthening the active role of local society in exercising public authority was to be accompanied by increasing public awareness of urban processes, followed by even social co-financing of these processes. Already in the Leipzig Charter of 2007, such a consequence of social participation was expected, indicating that: "integrated urban development, and in particular integrated urban revitalization, by reconciling the interests of stakeholders will allow for more efficient use of limited public funds (...)". Due to its time and financial unpredictability, revitalization was ideally suited as a precursor of integrated and participatory solutions in urban policy. Organizational and financial social participation was also a guarantee of the success of revitalization processes (Tylman, 2017, p. 213). Along with the change of state power in Poland and the takeover of this power by the conservative-socialist group Law and Justice, the popularity of revitalization in Poland has fallen. This decline coincided with the last period of financial programming from European funds for Poland and the migration crisis that affected European cities especially in the years 2016-17. According to the authors, the mistakes made in Polish revitalization policy until the takeover of state power by Law and Justice should include in particular:

- 1) The National Revitalization Program was not adopted, despite the development of its initial assumptions as early as in 2014
- 2) The Act on revitalization assumes the revitalization to be the commune's own task (non-obligatory) and the simultaneously does not provide public (state) financial resources as a means of financing or financial support for revitalization processes.
- 3) The Act on revitalization lacks ways to encourage private entities to get involved, including financially, in revitalization processes.
- 4) Too much trust is placed in the rapid development of social participation, while there is low awareness of social participation and high resistance of local government.

Much more mistakes could probably be mentioned in the processes of revitalization from the perspective of spatial development, development of social awareness, urban development strategies and others (Muzioł-Węclawowicz, 2018, p. 105). These mistakes automatically slow down revitalization processes, including social participation itself. Nevertheless, according to the authors, fundamental mistakes were made in the area of financing revitalization processes at the stage of preliminary assumptions. In the assumptions to the draft Act on revitalization, it was pointed out that "the Act will not contain solutions directly providing sources of financing for revitalization processes. The Act is to be a set of tools for conducting effective, optimal revitalization processes, and its purpose is to create a legal framework for conducting these processes that will encourage various entities (public and non-public) to focus resources in degraded areas and cooperation to increase their financial leverage"(Draft assumptions of the draft act on revitalization, 2014). It seemed that social participation, including financial participation, in revitalization processes would become a reality before the end of the financial programming period from European funds for 2014-20. In the Guidelines for revitalization in operational programs for 2014-20 addressed to Managing Authorities for regional and national operational programs, as compared to the previous financial programming period, the support criteria for projects have been extended significantly. Participation was one of the important conditions for obtaining EU funds (Guidelines for revitalization in operational programs for 2014-20, 2016). The change of power in Poland in 2016, the sharpened political struggle of recent years, as well as the migration crisis affecting the city and observed from the perspective of Poland, pushed into the background participatory thinking. The new government presented a completely different concept of urban policy development, i.e. housing-based policy not

necessarily concentrated in city centers or degraded areas. Investments under revitalization processes, contracted and financed mainly from structural funds, will, however, continue to be implemented until 2022-24.

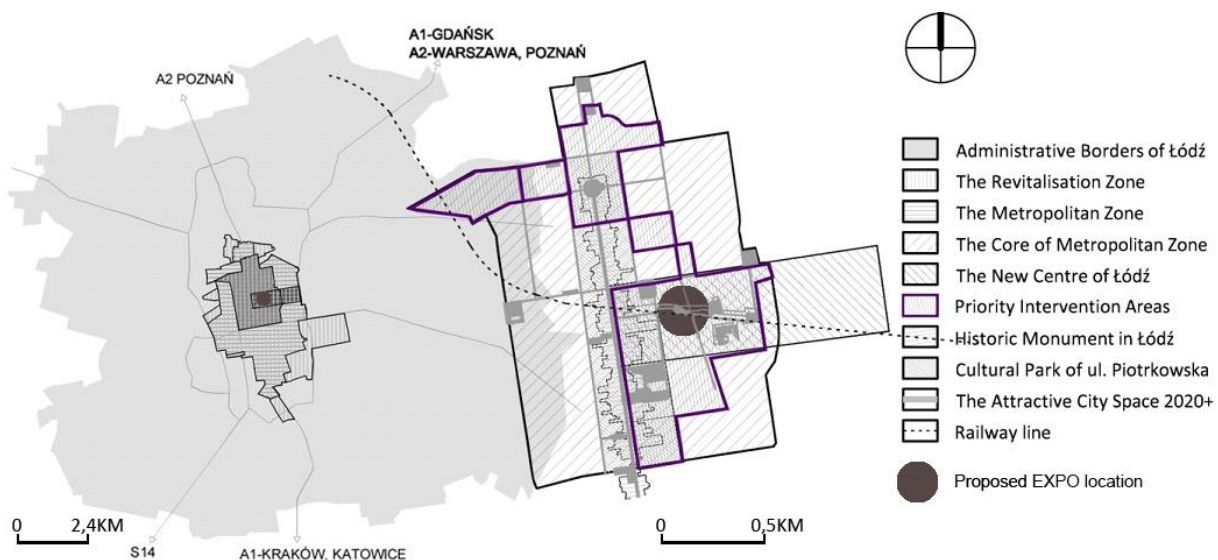
### **3.2. Urban policy in Poland after 2016**

Currently, urban policy focuses on housing problems. This is evidenced by the adoption by the government of the National Housing Program on 27 September 2016 (hereinafter NHP), (National Housing Program, 2016). The focus on urban policy around housing is justified by the Report - Information on housing - Monitoring results for 2015. The report's conclusions include indication "The acquired data indicates the need to take measures to increase municipal housing resources, and thus create programs aimed at co-financing investments related to this type of construction. On the other hand, the rental housing market should be expanded" (Information on housing - Monitoring results for 2015, 2016). As a result, NPM "introduces solutions to increase housing availability, especially for families with average and low incomes". Thus, the new ruling party put the priority of housing policy in urban policy, seeing in new housing a more effective form of eliminating identified problems. In retrospect, it is worth considering whether revitalization, despite its enormous interest, played any role in supporting the housing policy of the state. Already the scale of revitalization activities seems to deny the possibility of effective elimination of high and multidimensional housing needs of Poles. Nevertheless, also the analysis of the above-mentioned basic goal of revitalization, regulated by the Act on revitalization, allows to doubt its fundamental importance in solving housing problems. The regulation refers to the broadly understood permanent socio-economic recovery of the revitalized area, of which housing is only one of the components (improvement of the quality of life). By assumption, therefore, revitalization is not a tool of the state housing policy, although housing policy can also be used for revitalization. However, in the literature on the subject one can find the statement that housing should be the leader of the components of the revitalization process, and "housing projects - contrary to the obvious logic and actual needs - still do not play a basic role in revitalization activities" (Muzioł-Węclawowicz, 2018, p.107). It is difficult to fully agree with the above statement. An adequate housing policy may, to a greater or lesser extent, serve a socio-economic recovery, depending on the needs identified and the results expected. In this context, also the criticism of the lack of sufficient support for housing in financing revitalization projects from the European Union structural funds seems controversial, although it is probably partly justified (Muzioł-Węclawowicz, 2018, p. 107). Therefore, the above conclusions lead to the question: what is revitalization from the point of view of conducting comprehensive urban policy? The answer to this question can already be found in NUP. NUP analysis proves that revitalization is a tool for sustainable urban development, just like other tools identified in NUP as serving to improve the quality of life and sustainable socio-economic recovery: participation, shaping space, transport and urban mobility, low-carbon energy efficiency and investment policy, economic development, environmental protection and adaptation to climate change, demography, urban area management (NUP themes). What is more, the entire NUP construction is subordinated to the overarching goal of sustainable urban development understood as equalizing development differences between individual city areas. In justification, it is enough to cite the strategic goal of NUP (strategic goal of urban policy), which is to strengthen the capacity of cities and urban areas to develop sustainably, create jobs and improve the quality of residents' life. Housing policy has not been in Poland so far and is still not part of the city's sustainable development policy. The housing policy was not mentioned in NUP along with other topics mentioned above. However, housing policy should be part of the city's sustainable development policy. Unfortunately, currently in Poland, housing policy is only a tool to eliminate neglected housing problems.

Therefore, the authors postulate the necessity to supplement NUP with housing policy assumptions. Thus, a direct link should be made between the housing policy and the city's sustainable development policy. It is worth adding that housing needs in Poland have been recognized for years. These needs are not new information that results from the data contained in the 2015 Report. The previous government also tried to solve these problems through appropriate support programs, but the scale of their implementation did not correspond to the scale of real needs. It is also worth adding that the current housing policy supports revitalization through financial bonuses from Bank Gospodarstwa Krajowego (Bank Gospodarstwa Krajowego – Revitalization loan, 2019) and rent subsidies (Act on state aid in bearing housing expenses in the first years of renting an apartment, 2018). Nevertheless, the multidimensional and unpredictable in time and financial needs nature of revitalization prompts the next postulate addressed to the legislator: developing further forms of support, especially financial support for these processes. Effective revitalization, focused primarily in city centers, is by definition important for focusing the city's development, preventing suburbanization and identifying its residents with the city.

### 3.3. Revitalization and urban policy on the example of the city of Łódź

The method and scope of revitalization is determined by the Municipal Revitalization Program for the city of Łódź 2026+ (hereinafter MRP) (Municipal Revitalization Program, 2018). Revitalization in Łódź, the former centre of the textile industry, is a very extensive and engagement-intensive undertaking. The revitalization area covers the entire Downtown and partly neighboring districts – Bałuty, Widzew and Górna. The area of revitalization is 6.08% of the area of Łódź and it is 1783 hectares.



*Figure 1: Location of the Core of the Metropolitan Zone, forms of protection extended to cultural heritage in the Zone, and urban policy assumptions (Municipal Revitalisation Program)*

Within the area, the residential function dominates, there are over 10,000 properties, but only 9% is city-owned, and in 15% the city has shares. Local authorities control 2435 buildings, in whole or in part, in which 30 695 dwellings are located (including over 2.5 thousand out of use). 26% of the city premises are in a poor technical condition, they are over 70% exploited, and only 4% is used in less than 30%. The historical centre of the city was indicated as the area requiring the fastest interventions, with the concentration of planned interventions in the Core of the Metropolitan Area.

In Core there are 8084 communal housing, 278 social and 5 employee housing, of which 22.9% are in debt for more than 3 months. The challenge here is the large share of vacancy rates - it is estimated that a total of about 4 million m<sup>2</sup> is not used in Core, including 25% of abandoned buildings and 20% of partially uninhabited real estate in the commune's resources. In the assumptions for the area revitalization of the centre of Łódź, the Core was divided into 20 areas, of which 8 were considered priority. The changes implemented in the priority areas are presented in the Area Revitalization of the Centre of Łódź, a project included in the city's financial perspective for 2014-2020 and included in the voivodship regional operational program for 2014-2020 (Regional Operational Program for the Łódź Voivodeship for the years 2014-20, 2018). The investment has been co-financed by the European Regional Fund, and the total value of the projects exceeds EUR 226 million. As part of the planned investment activities, renovation and reconstruction of buildings located in municipal resources, conservation works, reconstruction of the communication system, improvement of the quality of public spaces are planned. A necessary element of revitalization are also projects related to housing policy, especially in the centre. On the one hand, Downtown is the area determining the city's identity (Freedom Square, Old Market, New Centre of Łódź), on the other, it is the area with the most severe spatial and social problems. The problem is especially the decrease in the number of inhabitants in the city centre. Łódź is affected by strong depopulation. In the years 2002-2017 the city lost 12.1% of its population, with an increase in the depopulation of the centre, which reduced the number of inhabitants by 22.6%. The outflow of residents is associated with poor building condition, degraded neighbourhood, lack of greenery and good quality public spaces. Without housing policy in the city centre, the depopulation process in this area may deepen, which will further accelerate its social and spatial degradation. It is the housing policy in the centre that should be an element or supplement of the area revitalization of downtown quarters. This is not an exceptional situation in the country. Nevertheless, the situation of Łódź on a national scale is special when it comes to its scale. A characteristic feature of many Polish cities is the permanent neglect and degradation of urban buildings from the last period. The poor condition of the current urban development is due to, among others, social changes and ownership relations in the post-war period. The reason for the degradation of the housing substance is also the so-called renovation gap, as well as the tendency to spread cities to new areas (Lorens, 2013, p. 24). Degradation of buildings causes outflow of better-off residents from the centre and contributes to housing and social segregation, which results in further intensification of negative processes in the city centre. Counteracting these trends may be based on improving housing conditions, through actions on the housing fabric, which is the dominant function in downtown crisis areas. Therefore, the literature on the subject emphasizes the importance of properly implemented housing policy for the successful revitalization processes (Skalski, 2004, p. 10). The centre of Łódź also has been defined as an area requiring intervention in the area of improving housing conditions. This is one of the main goals of the City's Spatial Development Strategy (City's Spatial Development Strategy, 2013), which assumes increasing the condition of existing buildings and realization of new housing investments. Several programs for tenants of municipal buildings, were earlier implemented to improve the technical condition of tenements and provide them with access to technical infrastructure. Programme „City of 100 townhouses” is focused on saving historic buildings and structure. It is important also, because of wide promotional campaign. Next programme, called „Attics”, in the first step includes unused attics for housing functions, and in the second step, simplification and help in projects and administration paths. Another one, called „Renovate and keep”, is similar to Attics – when tenants of municipal buildings retrofit and renovate rented attic apartment, they have lease converted into ownership rights. Programme „Small services with great prospects” implemented as „Creative premise” is dedicated to unused commercial premises, which will be offered to rent at attractive prices for people from

the creative sector to pursue their activities in Łódź. Particularly noteworthy is the design of changes at Włókiennicza Street, previously diagnosed as an poverty enclave. The changes will include the reconstruction of most buildings constituting both frontages, changes in land use and in traffic organization. It is the largest complex of buildings covered by area revitalization. Under project number 1, in the vicinity of Włókiennicza Street, 21 buildings will be rebuilt, including 15 located in the street frontages. As part of conservation works, the tenement house where Hilary Majewski, an architect of Łódź, lived in the second half of the 19th century, whose signature marks most of the townhouse designs in the city centre, will be renovated. The works will include the implementation of a pedestrian and bicycle route between Włókiennicza and Stefana Jaracza streets, the creation of a pocket park inside the quarter with a playground and skatepark, renovation of courtyards, line plantings along the streets. This is an interesting example of area intervention in urban tissue with a very high degree of degradation.

#### 4. CONCLUSIONS

As it results from studies conducted at the level of documents as well as EU, national and local government legal acts (for the city of Łódź), the revitalization measures taken so far, although absorbing a high share of EU funds, did not take into account housing activities in a broader perspective. Moreover, although it seems obvious to include housing policy in urban policy, this has not happened. The main document in this regard - NUP - overlooked housing policy issues. Thus, housing policy has also not become part of the sustainable development of cities. This should be assessed as a fundamental error. It should also be admitted that in view of the huge housing needs of Poles, the current housing situation should be systematically changed, and the beginning should be the change of the most important strategic document in this area, i.e. the National Urban Policy. It should be emphasized at the same time that housing should be treated as a separate thematic area in the National Urban Policy, as well as participation, transport, spatial planning and revitalisation itself. However, it should be taken into account that revitalization is not a tool of the state housing policy, although housing policy can also be used for revitalization. The example of Łódź, due to the scale of housing needs, the degradation of the centre - an area dominated by multi-family housing, creating the identity of the place, and the scale of financial resources directed to revitalization programs that are not correlated with housing programs seems to fully confirm the thesis put forward in the article that combination of both urban policies can be crucial for a more effective revitalization that is unpredictable in time and the financial resources needed. As part of the revitalization of the city centre, renovation of residential buildings is foreseen, but in total the area of residential premises is decreasing, because some of them are to perform other functions. It is also not a program proposal on a city or district scale, but rather projects to improve the technical condition of some buildings that are in the city's resources.

#### LITERATURE:

1. Act on revitalization (2015). *Act on revitalization of 9 October 2015*. Retrieved 25.03.2019 from <http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20150001777>
2. Act on state aid in bearing housing expenses in the first years of renting an apartment (2018). *Law of 20 July 2018 on state aid in bearing housing expenses in the first years of renting an apartment*. Retrieved 10 October 2019 from [http://orka.sejm.gov.pl/proc8.nsf/ustawy/2651\\_u.htm](http://orka.sejm.gov.pl/proc8.nsf/ustawy/2651_u.htm)
3. *Bank Gospodarstwa Krajowego – Revitalization loan* (2019). Retrieved 10 October 2019 from <https://www.bgk.pl/fundusze-i-programy/pozyczka-rewitalizacyjna/>



4. City's Spatial Development Strategy (2013) *Resolution No. LV/1154/13 of the City Council In Łódź of 16 January 2013 changing the resolution on the rules for renting premises that are part of the housing resource of the City of Łódź*. Retrieved 10.October 2019 from [http://archiwum.bip.uml.lodz.pl/\\_plik.php?plik=uchwaly/rm/06\\_1154.PDF](http://archiwum.bip.uml.lodz.pl/_plik.php?plik=uchwaly/rm/06_1154.PDF)
5. Draft assumptions of the draft act on revitalization (2014). *Draft assumptions of the draft act on revitalization, Infrastructure and Development Ministry, 20 November 2014*. Retrieved 10 May 2017 from <https://legislacja.rcl.gov.pl/docs/1/259882/259913/259914/document149476.pdf>
6. Guidelines for revitalization in operational programs for 2014-20 (2016). *Guidelines for revitalization in operational programs for 2014-20, 2 September 2016*. Retrieved 10 October 2019 from [https://www.funduszeuropejskie.gov.pl/media/23916/Wytyczne\\_dot\\_rewitalizacji\\_po\\_aktualizacji-zatwierdzone02082016clear.pdf](https://www.funduszeuropejskie.gov.pl/media/23916/Wytyczne_dot_rewitalizacji_po_aktualizacji-zatwierdzone02082016clear.pdf)
7. Information on housing - Monitoring results for 2015 (2016), *Information on housing - Monitoring results for 2015, Retrieved 10 October 2019 form https://www.gov.pl/documents/33377/436740/informacjeomieszkalnictwewynikimonitoringuza2015rok.pdf*
8. Leipzig Charter on Sustainable European Cities (2007). *Leipzig Charter on Sustainable European Cities – Final draft 2 May 2007*. Retrieved 25.03.2019 from [https://ec.europa.eu/regional\\_policy/archive/themes/urban/leipzig\\_charter.pdf](https://ec.europa.eu/regional_policy/archive/themes/urban/leipzig_charter.pdf)
9. Lorens P., Mironowicz I. (2013). *Wybrane teorie współczesnej urbanistyki*. Gdańsk: Akapit – DTP
10. Municipal Revitalization Program (2018). *Resolution No. LXXIII /1980/18 of the City Council of Łódź of 5 July 2018 amending the resolution regarding the adoption of the municipal revitalization program of the city of Łódź*. Retrieved 10 October 2019 from [https://rewitalizacja.uml.lodz.pl/files/public/PORTAL\\_REWITALIZACJA/GPR/1980.pdf](https://rewitalizacja.uml.lodz.pl/files/public/PORTAL_REWITALIZACJA/GPR/1980.pdf)
11. Muzioł-Węclawowicz A. (2018). Mieszkalnictwo społeczne. In K. Nowak, *Raport o stanie polskich miast*. Warszawa: Instytut Rozwoju Miast i Regionów
12. National Urban Policy 2023 (2015). *Resolution No 198 of Council Of Ministers of October 20, 2015 regarding the adoption of National Urban Policy*. Retrieved 25 March 2019 from <http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20150001235/O/M20151235.pdf>
13. National Housing Program (2016). *Resolution No. 11 5/2016 of the Council of Ministers of September 27, 2016 regarding the adoption of the National Housing Program*. Retrieved 10 October 2019 from [https://www.gov.pl/documents/33377/436740/Narodowy\\_Program\\_Mieszkaniowy.pdf](https://www.gov.pl/documents/33377/436740/Narodowy_Program_Mieszkaniowy.pdf)
14. Regional Operational Program for the Łódź Voivodeship for the years 2014-20 (2018). *Regional Operational Program of the Lodzkie Voivodship 2014-2020 version 3.0, 2 March 2018*. Retrieved 10 October 2018 form <https://rpo.lodzkie.pl/images/2018/124-zmiany-w-rpo/rpo-wl-2032018.pdf>
15. Skalski, K. (1996). *O budowie systemu rewitalizacji dawnych dzielnic miejskich*. Kraków: Krakowski Instytut Nieruchomości
16. Skalski, K. (2004). *Vademecum rewitalizacji dawnych dzielnic mieszkaniowych. Poradnik dla Rady i Zarządu Miasta*. Warszawa: Municipium.
17. Syrda, E., Grabowski, J., Florczak-Czujwid, J., Tomczak, B., Łuszczyńska, M. *Information on housing - Monitoring results for 2015 (2016)*. Market Research and Analysis Centre. Retrieved 10 October 2019 from <https://www.gov.pl/documents/33377/436740/informacjeomieszkalnictwewynikimonitoringuza2015rok.pdf>
18. Toledo Declaration (2010). *Toledo Declaration – Toledo Informal Ministerial Meeting on Urban Development, 22 June 2010*. Retrieved 20 September 2019 from [https://www.mdrap.ro/userfiles/declaratie\\_Toledo\\_en.pdf](https://www.mdrap.ro/userfiles/declaratie_Toledo_en.pdf)

19. Tylman, A. (2017). Revitalization as a pilot process in financing integrated and participatory urban policy. In J. Gliniecka, A. Drywa, E. Juchniewicz, T. Sowiński, *The Practical and Theoretical Problems of Financial Law Towards Challenges of The XXI Century*. Warszawa: CeDeWu,

# INTEGRATION MOOC ON CREATIVITY AND ENTREPRENEURSHIP INTO TERTIARY FOREIGN LANGUAGE TEACHING

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## **ABSTRACT**

*The formation of creativity of future entrepreneurs still remains one of the important issues of modern training at university. Future graduates should be able to think, analyze and be imaginative in finding solutions in situations that follow the procedures of professional training and personal development. It is extracurricular activities in a foreign language that enable us to engage a student in active, imaginative, research and cognitive activity and provide the building of a professional foreign language competence of future specialists. Extracurricular activities promote increasing of motivation to acquire a foreign language, contributes to the building of personality, its creative outbreak, broadening horizons, erudition and emotional attitude to the entire world and to oneself. This study explores the use of information and communication technologies, namely massive open online courses for the building of creative skills among students majoring in entrepreneurship, as well as for the development of their professional foreign language competence. Criteria for choosing an online course for integration into the educational process of teaching a foreign language are presented. The content of the massive open online course on creativity and entrepreneurship is reviewing. As a result of the study, a survey of entrepreneurship students is conducted after completing the massive open online course on an American online platform in order to consider the positive features of the use of massive open online courses for extracurricular activities on the "Foreign Language" discipline as a part of blended learning environment. It is concluded that the use of foreign-language massive open online course on creativity and entrepreneurship in extracurricular work at tertiary level as a part of blended approach can be an effective way to jointly form the creativity and professional foreign language competence of future entrepreneurship graduates.*

**Keywords:** *massive open online course, entrepreneurship, foreign language, tertiary, education for creativity*

## **1. INTRODUCTION**

Nowadays, in society the idea that education from a way of enlightening a person should turn into a mechanism for the development of a creative personality, its individual abilities, a personality capable of building itself, determining and changing its life strategy is becoming more and more asserted. The development of creativity of future specialists is one of the urgent problems of modern education. The most successful creative skills are formed in the joint activities of a teacher and a student as a result of solving problems and problem tasks through the use of various forms of creative activity. Future specialists should be able to think, analyze and be creative in solving problem situations that accompany the processes of professional formation and personal development. At the same time, a teacher must educate his students to master the methods, strategies, and technologies of successful self-realization in educational and future professional activities (Pigaleva, 2018, p. 85).

## **2. BUILDING A RESEARCH PROBLEM**

It is known that a student's creative abilities are manifested in the extent to which he unconventionally approaches the solution of certain issues. The development of creative

abilities in students does not occur by itself. A favorable stimulating environment, a cultural and creative atmosphere and fruitful conditions are required. These conditions are connected with the real educational system (environmental conditions) in which the learning process is carried out (Pigaleva, 2018, p. 86). These are the availability of adequate teaching aids, the scientific validity of methodological recommendations and attitudes, the material and technical equipment of the learning process. In this study we propose to appeal to information and communication technologies, exactly to foreign language massive open online courses on creativity and entrepreneurship for extracurricular work on the subject “Foreign Language” at the higher education level as a part of blended learning environment.

### **2.1. Literature Review**

As for researchers, certain aspects of this issue are covered in the works of the following researchers who studied creativity in early childhood education (Chu-ying, 2010, p. 50), creativity training in problem solving (Kandemir, 2007, p. 120), creativity in entrepreneurship education (Hamidi, 2008, p. 310), limits to creativity in education (Craft, 2009, p. 116), realising creativity in management education (Sunley, 2019, p. 180), importance of entrepreneurial creativity and education (Shahab, 2019, p. 278), application of creativity methods in education and industry (Nutzmann, 2019, p. 145), creativity measurement in undergraduate students (Snyder, 2019, p. 136), relationship of creativity with computer anxiety of the higher secondary students (Gupta, 2017, p. 100), creativity and morality in business education (Marues, 2019, p. 20), sociocultural perspectives on creativity, learning, and technology (Glăveanu, 2018, p. 81), university education and creativity (Ehtiyar, 2019, p. 131), using ICT for development of creativity (Angarita, 2019, p. 121), fostering learner creativity in English classroom (Wang, 2019, p. 68), creativity in language learning and teaching (Jones, 2019, p. 156) and language learning via massive open online courses (Jones, 2018, p. 185).

### **2.2. Basic Assumptions**

In the era of the Bologna process a conscious and competent design of foreign language education, individual educational paths and the use of modern teaching aids including information and communication resources are necessary. In a constantly changing world, where the amount of information accumulated by mankind is constantly increasing, we place a special emphasis on the competitiveness of the future graduate, which is impossible without involving the student in independent and creative activity. It is this function that the university performs in attracting students to actively participate in events in a foreign language. It is extracurricular activities in a foreign language that allow us to include a student in active, creative, research and cognitive activity and ensure the formation of a professional foreign language competence of a student. Extracurricular activities contribute to increasing motivation to learn a foreign language, contributes to the formation of personality, its creative beginning, broadening horizons, erudition and emotional-value attitude to the world and to oneself. It is this form of work that contributes to the effective assimilation of the content of foreign language education. Foreign culture which has absorbed the enriched experience of centuries of collective creativity, the wisdom and talent of many generations allows you to open a wide scope for the creativity and development of students, to make their life spiritually richer and more comprehensive. Extracurricular work at the level of higher education should be considered as an important link in the self-education of the student's personality and act as a means of organizing the intellectual activity of students. Creative extracurricular activity forms the interest of students in learning a foreign language making sure of the obvious advantages of a future career with knowledge of a foreign language and strengthening their capabilities for creativity and self-education.

It is important to note that a new social mandate is already has formed in society: instead of an obedient employee working according to an established tradition a person who is able to quickly navigate the situation and creatively solve emerging problems became in demand. An important condition for increasing the competitiveness of a university graduate is the development of a creative approach to various areas of professional activity []. In our study we suggest that the use of a foreign-language massive open online course on creativity and entrepreneurship in extracurricular work on the subject "Foreign Language" at the higher education level as a part of blended learning environment is an effective way to jointly develop the creativity and professional foreign language competence of future entrepreneurs.

### **3. MATERIALS AND METHODS**

While conducting this research observation and questionnaire were implemented. The author has examined MOOCs in the following categories: personal development, entrepreneurship, leadership and management. These MOOCs are developed to meet the educational needs of entrepreneurship students and must deal with the domains of knowledge of fundamental and professional training of future graduates in different engineering areas. The following decision criteria were implemented during the research:

- MOOC chosen should be developed to form competencies in creativity at tertiary level;
- the title of an online course should neatly maintain the direction of students` studying or correlate to the titles of professional disciplines for entrepreneurship undergraduate curricula (Logic and Critical Thinking, Leadership and Team Development, Fundamentals of Entrepreneurship, Innovation and Entrepreneurship Thinking etc.);
- course duration does not exceed 8 months,
- online course is available for free,
- MOOC is delivered in English with the ability to enable subtitles,
- presence of such creative tasks as an essay among the elements of the pedagogical design of the MOOC,
- ability to get a course certificate after MOOC completion.

### **4. RESEARCH DATA**

The experiment involved 52 students of the Faculty of Corporate Economics and Entrepreneurship majoring in Business Economics at Novosibirsk State University of Economics and Management. Undergraduate students were offered six massive open online courses for the development of creativity in the field of entrepreneurship on the Coursera online platform that are corresponding to predefined criteria for this study. After watching the welcome videos and reading the annotation of each MOOC offered students chose the "Creativity & Entrepreneurship" by Institute for Creative Entrepreneurship at Berklee College of Music without a dissentient voice. The MOOC is designed to help its participants reveal their inward creativity and know how to apply it for future career development or business. Created by Panos Panay the MOOC includes interviews with world famous entrepreneurs, creative directors, chefs, innovators, producers and as they consider resemblance of the creative and entrepreneurial peregrinations. This MOOC examines business as a creative process, a basic human trait that we all possess and able to improve. "Creativity & Entrepreneurship" uses ideas from the musical creation procedures, such as iterating and embracing failure, as a resources of leading you through the idea of intellection as a startup. Course participants can boost the fundamental mindset, competences and insights required to continue an business career, whether as the founder of their personal career or as the organizer of a not yet existing business in any domain. This online course has been selected for blended learning. The teacher of the discipline "Foreign Language" completed this course in advance. Tasks for language support for students to complete the online course were developed in the Moodle e-learning

environment. For five weeks students were performing the following activities in distance mode: they watched video lectures, studied articles for reading, participated in the discussion of the course material at the forum and completed written assignments in essay format where they were expected to discuss the following topics:

- Entrepreneurial Mindset,
- Product Development,
- Building a Team and Culture,
- Coping with Failure and Learning to Replenish.

Also while completing the online course students and the teacher discussed the course materials in the classroom. As a result, all students who participated in the experiment completed the MOOC and received a certificate of completion of the course. The certificate indicates the providing platform, the university that developed this MOOC and the authors who were the teachers of the "Creativity & Entrepreneurship". After completing the MOOC a survey of the course participants was also conducted. The survey was aimed at identifying positive features of using ICT resources to develop creativity and entrepreneurial skills. As a result of the questionnaire it was found that 92% of respondents consider this course useful for developing their personal qualities, 94% of course participants believe that they have developed innovative thinking skills, 89% of students now better understand how to better use the concepts of creativity for their business, 95% of respondents consider that creativity skills are formed in the best way while mastering a course in a foreign language, absolutely all participants noted an increase in motivation for self-learning, 96% of students will use the acquired methods in their future careers, 92% of respondents consider ICT to be an effective means of forming creative skills and interest in learning, 92% of students believe that mastering this online course in English allows them to develop their professional foreign language competence, and as a result, develop their creativity skills (Fig. 1). It should also be noted that some students expressed a desire to enroll other courses of specialization "Music Business" on the online MOOC platform Coursera and receive a certificate of a more serious rank.

*Table 1: Questionnaire results after completing the MOOC*

<b>№</b>	<b>Poll question</b>	<b>Yes</b>	<b>No</b>	<b>Difficult to answer</b>
1	Do you find this course useful for your personal development?	92%	0%	8%
2	After completing the course, do you feel the ability to think outside the box more?	94%	6%	0%
3	Has it become more clear for you how to apply creativity for entrepreneurship purposes?	89%	4%	7%
4	Do you think that mastering this course in a foreign language forms creative skills better than mastering this course in your native language?	95%	5%	0%
5	After completing this course, do you think that your motivation for self-education has increased?	100 %	0%	0%
6	Will you apply the studied creativity approaches in your career?	96%	0%	4%
7	Do you think that the use of ICT contributes to the development of creative skills and interest in learning?	92%	8%	0%
8	Do you think that completing MOOCs in English can develop your professional foreign-language competence, and as a result, build your creativity skills?	92%	4%	4%

## 5. CONCLUSION

Information and communication technologies play an important role in our lives. Modern ICTs can be used in education for creativity. The integration of such Internet resources can contribute to the effective formation of students' leadership skills, creativity and interest in cognition. The findings of this study reckon that the use of foreign-language massive open online course on creativity and entrepreneurship in extracurricular work on the subject "Foreign Language" at the higher education level as a part of blended learning environment can be an effective way to jointly develop the creativity and professional foreign language competence of future entrepreneurs. The findings of this research may be interested for teachers of foreign languages at tertiary level, as well as teachers of professional disciplines for students majoring in entrepreneurship, specialists in distance and blended learning, managers of educational organizations, scientists involved in education for creativity studies, as well as current entrepreneurs.

## LITERATURE:

1. Angarita L. (2019). Are ICT good partners for the development of creativity? A systematic review of literature. *International Journal of Arts and Technology* (pp. 112-123).
2. Chu-ying C. (2010). Creativity in early childhood education: Teachers' perceptions in three Chinese societies. *Thinking Skills and Creativity* (pp. 49-60).
3. Craft A.. (2010). The Limits To Creativity In Education: Dilemmas For The Educator. *British Journal of Educational Studies* (pp. 113-127).
4. Ehtiyar R. (2019). University Education and Creativity: An Assessment From Students' Perspective. *Eurasian Journal of Educational Research* (pp. 113-132).
5. Glăveanu V. (2018). Sociocultural Perspectives on Creativity, Learning, and Technology. *Creativity Under Duress in Education?* (pp. 63-82).
6. Gupta D. (2017). A study of the relationship of Creativity with Computer anxiety of the higher secondary students. *International Journal of Computational Research and Development* (pp. 97-100).
7. Hamidi D.. (2008). Creativity in entrepreneurship education. *Journal of Small Business and Enterprise Development* (pp. 304-320).
8. Jones R. (2019). Creativity in language learning and teaching: Translingual practices and transcultural identities. *Applied Linguistics Review* (pp. 145-159).
9. Kandemir M. (2007). Creativity Training in Problem Solving: A Model of Creativity in Mathematics Teacher Education. *New Horizons in Education* (pp.107-122).
10. Marues J. (2019). Creativity and morality in business education: Toward a trans-disciplinary approach. *The International Journal of Management Education* (pp. 15-25).
11. Nutzmann M. (2019). Study on learning concepts applying creativity methods in education and industry. In Bohemia E. (ed.), *DS 95: Proceedings of the 21st International Conference on Engineering and Product Design Education*. (pp. 140-150). University of Strathclyde, Glasgow.
12. Pigaleva I. (2018). Uslovija Razvitija Tvorcheskih Sposobnostej Budushhih Specialistov v Sisteme Vysshego Professional'nogo Obrazovaniya. *International Journal of Humanities and Natural Sciences* (pp. 83-89).
13. Shahab Y. (2019). Entrepreneurial self-efficacy and intention: do entrepreneurial creativity and education matter? *International Journal of Entrepreneurial Behavior & Research* (pp. 259-280).
14. Snyder H. (2019). Creativity measurement in undergraduate students from 1984–2013: A systematic review. *Psychology of Aesthetics, Creativity, and the Arts* (pp. 133-143).
15. Sunley R. (2019). Realising creativity in management education: Putting student energy into action. *The International Journal of Management Education* (pp. 172-181).

16. Ustinina G. (2014). Tvorchestvo na zanjatijah inostrannogo jazyka kak faktor povyshenija konkurentosposobnosti budushhih specialistov. Retrieved 10.10.2019 from <http://pedagogika.snauka.ru/2014/10/2721>
17. Wang H. (2019). Fostering learner creativity in the English L2 classroom: Application of the creative problem-solving model. *Thinking Skills and Creativity* (pp. 58-69).
18. Zubkov A., Morozova M. (2018). Language Learners Communication in Moocs. *Advances in Intelligent Systems and Computing* (pp. 175-186).



## **ECONOMIC GROWTH AND THE STATE OF ENVIRONMENT: ENVIRONMENTAL KUZNETS CURVE FOR THE COUNTRIES OF EASTERN EUROPE AND THE BALTIC COUNTRIES**

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### **ABSTRACT**

*The relationship between economic growth and environmental quality is one of the most significant problems in modern economic theory. The current interest in this issue lies in climate change. One of the most promising approaches seems to deal with the Environmental Kuznets curve (EKC). Its hypothesis states that pollution levels increase as the country develops, but they begin to decrease as rising incomes pass beyond a turning point. The main aims of the paper are: to test the hypothesis that EKC exists in the countries of Eastern Europe and the Baltic countries; to define the turning point for these countries (if EKC exists); to define how the level of emissions is affected by both specific features of economy and the adopting economic policy, including economic reforms and environmental policy. Our estimations indicate following conclusions: we find support for EKC in the countries of Eastern Europe and the Baltic countries; there are some specific features these countries that have a small but statistically significant positive impact on CO<sub>2</sub> emission (openness of economy, level of industrialization). On the contrary the scale of production has no effect on CO<sub>2</sub> emission; we find that liberalization process leads to reduction of CO<sub>2</sub> emission; the country Kyoto protocol agreements participation has a great influence on CO<sub>2</sub> emission decrease.*

**Keywords:** *CO<sub>2</sub> emissions, Economic growth, Environmental Kuznets curve, Eastern Europe and Baltic countries*

### **1. INTRODUCTION**

Despite the natural anomalies have been observed over the recent years and even the practical measures taken to limit the influence of climate change on the economic development (the signing and ratification of the Kyoto Protocol and the Paris Agreement by almost all countries of the world), the problem of the interdependence of economic growth and the environment remains controversial one in the modern economics both in terms of theory and developing practical recommendations for economic policy. One of the most promising approaches to studying this correlation is the approach based on the concept of “environmental Kuznets curve” proposed by G. G. Grossman and A. Krueger (Grossman and Krueger, 1995). According to this hypothesis, the level of environmental pollution depends on the economic growth: at the initial “industrialization” stage the state of the environment deteriorates, but after passing a certain “point of inflection” the increased well-being of economic actors allows them to demand higher level of the state of the environment, on the one hand, and creates opportunities for investment in measures to improve the quality of the environment, on the other hand, which results in environmental improvement. Graphically, “environmental Kuznets curve” can be shown as an inverted U-shaped curve. Our study deals with the application of the environmental Kuznets curve concept to the countries of Eastern Europe and the Baltic countries. This particular group of countries have been chosen as the object of study due to the following reasons: firstly, these countries not very often appear among the countries under study, and

secondly, they have relatively similar institutional structure of economic management, all the above mentioned facilitates the research task by eliminating the need to take into consideration very diversified models of business and provides the conditions for obtaining more reliable results with reducing the likelihood of their misrepresentation due to omission of any important factor in the analysis. Moreover, all these countries shared the common feature of being the EU members or candidates for joining this integration group. Our analysis is based on data covering 16 countries of Eastern Europe and the Baltic States (Albania, Bulgaria, Bosnia and Herzegovina, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Croatia, Montenegro, Czech Republic, and Estonia) for the period from 1995 to 2010. Carbon dioxide (CO<sub>2</sub>) is considered as a pollutant. The sources of data used are World Bank Development Indicators and the European Bank for Reconstruction and Development.

## 2. THEORETICAL JUSTIFICATION OF THE ENVIRONMENTAL KUZNETS CURVE

The theoretical justification of the environmental Kuznets curve existence presented in the literature can be summed up as the following main factors (Brock, Taylor, 2006):

- an increase in the income of the population is accompanied by an increase in demand for services and by a decrease in the consumption of industrial goods, and, consequently, natural resources. It is also known that the provision of services requires less energy and natural resources than the production of industrial goods. A higher income level encourages the society to consume the products of the tertiary sector, thus, the negative environmental impact associated with industrial production is also decreased;
- high income elasticity of demand for such benefits as clean air, clean water, a favorable environment becomes higher for high-income consumers; for them, these benefits become a kind of "luxury goods." In general, the production of such "luxury goods" is ensured by the state due to establishment of more rigorous environmental standards, high environmental taxes, and other administrative measures;
- scientific and technological progress accompanying economic advancement in developed countries enhances the efficiency of energy and natural resources use, it means that less natural resources necessary to produce the same amount of goods, for example, due to recycling;
- objective interest for the preservation of the environment is mostly observed in the countries with a high income level.

With respect to quantity, the environmental Kuznets curve can be the result of the economies of scale, when the improvement of production efficiency becomes a direct result of an increase in the scale of production. Another explanation is the "threshold effect" caused by various reasons. In this case, a certain threshold value of income creates opportunities for reducing emissions. These opportunities can directly emerge from new technologies or policy changes, for example, the establishment of specialized pollution control authorities. Finally, the environmental Kuznets curve can be explained by an increasing output because of reducing pollution, a kind of the effect of scale acts in this case, which is similar to the effect of scale in production. However, it relates to increasing the efficiency of pollution reduction due to the development of pollution reduction activities.

## 3. ECONOMETRIC MODEL

The simplest of the common econometric representations of the "environmental Kuznets curve" is the following (Holtz-Eakin, Selden, 1995):

$$y_{it} = a_i + b_i + c_1 x_{it} + c_2 x_{it}^2 + u_{it} \quad (1),$$

where,  $y$  is the value of CO2 emission per capita,  $x$  is the value of income (GDP) per capita,  $i$  and  $t$  are the indices of the country and time period (years), respectively. Both indicators can be used either in absolute values or in logarithms. To confirm the hypothesis of the “environmental Kuznets curve” existence, the following condition is to be met: the factors  $c_1$  and  $c_2$  must be statistically significant, the factor  $c_1 > 0$ , and the factor  $c_2 < 0$ . A turning point, the amount of income, at which there will be a reduction in pollution, i.e. of the level of environmental degradation (if it exists), is determined as  $-c_1 / 2c_2$  or, if the indicators are used in logarithms, as  $\exp(-c_1 / 2c_2)$ . In this case, the environmental Kuznets curve is represented, in accordance with the theoretical justification, as an inverted U-shaped curve. Given that, in addition to income, the value of CO2 emission depends on other factors, their inclusion in equation (1) can help explain the process of changing the ascending section of the environmental Kuznets curve (emissions increasing with income increasing) to the descending section (emissions reducing with income reducing), as well as, the differences in the emission maximum values achieved in different countries. In this case, the model will become as follows:

$$y_{it} = a_i + b_t + c_1 x_{it} + c_2 x_{it}^2 + \sum c_{3k} E_{it}^k + \sum c_{4m} P_{it}^m + u_{it} \quad (2)$$

where,  $E_{it}^k$  is the vector of variables characterizing the specific features of the economy of a country. This group of variables includes the variables characterizing the scale of the economy (GDP and population), the intensity of foreign trade (ratio of the sum of exports and imports and GDP), the economy structure (industry share in GDP);  $P_{it}^m$  is the vector of variables characterizing the particularities of the policy of a country. This group of variables includes the variables characterizing the policy of economic reforms measured by the indices of the European Bank for Reconstruction and Development, and the variables characterizing environmental policy (the country's relation to the Kyoto Protocol). As an additional equation, we consider an equation of the form:

$$e_{it} = a_i + b_t + c_1 x_{it} + \sum c_{3k} E_{it}^k + \sum c_{4m} P_{it}^m + u_{it} \quad (3)$$

where,  $e_{it}$  is the value of energy consumption per capita (in oil equivalent). This allows us to identify the relationship between energy consumption and GDP; and since the amount of CO2 emissions is largely determined by the amount of the energy used, the need to significantly limit energy consumption can be assessed so as to provide the restraint of economic growth with passing to the descending section of the environmental Kuznets curve

#### 4. KEY RESULTS

We made calculations and estimated our model for the period from 1995 to 2010. (balanced panel). The hypothesis of the environmental Kuznets curve existence has been checked by us on the basis of the model that includes only GDP per capita in logarithms (in the first and second degree) as dependent variables. The panel mode with fixed effects is used as an estimation method. The calculation results presented in Table 1 confirm the hypothesis of the environmental Kuznets curve existence for the considered group of countries.

*Table following on the next page*

*Table 1: Estimation of the environmental Kuznets curve - Dependent variable - CO2 emission per capita (natural logarithm) (standard errors are given in brackets)*

Variable	
GDP per capita (in constant prices as per PPP)	5.603*** (0.620)
GDP per capita (in constant prices as per PPP) (squared)	-0.283*** (0.033)
Constant	-25.906*** (2.875)
F test	F=76.328 Prob>F =0.000
R <sup>2</sup> within	0.4019
R <sup>2</sup> between	0.1327
R <sup>2</sup> overall	0.1529
Number of observations	245
Turning point (USA dollars as per PPP)	19951

*All variables in natural logarithms.*

*\*\*\* statistically significant at 1%-level;*

*\*\* statistically significant at 5%-level;*

*\* statistically significant at 10%-level.*

The results obtained allowed us to calculate the value of the turning point of the environmental Kuznets curve, i.e. the GDP value per capita, the achievement of which leads to transition to the descending section of the curve: CO2 emissions per capita will decrease with GDP per capita growing. The value of the turning point for the countries under consideration is about \$ 20,000 in 2011 as per PPP. Thus, it may be concluded that many countries of this group, such as Poland, Slovakia, Estonia, Lithuania, Croatia, Hungary, the Czech Republic, Slovenia with GDP per capita in 2010 of \$ 20,000 or more have already reached the turning point in the environmental Kuznets curve. The analysis of the effect of certain factors on the amount of CO2 emission per capita, which was carried out as part of the assessment of the general model of the environmental Kuznets curve, makes it possible to define the level of CO2 emission rise per capita as the economy develops and the turning point is reached. At the same time, on the basis of such analysis results, we can draw conclusions of possibility to reduce emissions by applying various economic policy measures. We estimated the impact of three groups of factors:

- firstly, the factors associated with the features of the economies of the countries under consideration; these factors include the openness of the economy and the level of industrial development (the industry share in GDP);
- secondly, the factors associated with the current economic policy; these factors include indicators characterizing current economic reforms in various fields;
- the factors associated with the government's environmental policy, primarily in relation to greenhouse gas emissions, which is reflected in the country's relation to the Kyoto Protocol.

The analysis results of the first group factors are presented in Table 2.

*Table following on the next page*

*Table 2: The impact of industrial development level and economy openness on the amount of CO2 emission – Dependent variable - CO2 emission per capita (natural logarithm)(standard errors are given in brackets)*

Variable	
GDP per capita (in constant prices as per PPP)	5.305*** (0.662)
GDP per capita (in constant prices as per PPP) (squared)	-0.265*** (0.036)
Industry share in GDP	0.003 (0.004)
Foreign trade quota	-0.001 (0.001)
Constant	-24.712*** (3.023)
F test	F=38.50 Prob>F =0.000
R <sup>2</sup> within	0.4063
R <sup>2</sup> between	0.1509
R <sup>2</sup> overall	0.1700
Number of observations	245

\*\*\* statistically significant at 1%-level;

\*\* statistically significant at 5%-level;

\* statistically significant at 10%-level.

The international trade intensity impact on CO2 emissions appeared to be statistically insignificant. This can be explained by the fact that a significant part of the period under review was the economic recession, the restoration of the pre-reform level of development, and then a new crisis. It is extremely difficult to transfer effective technologies, which could impact on the amount of CO2 emissions under such conditions. On the whole, the positive relationship between the amount of CO2 emissions and the industry share in GDP is an indirect indicator of the environmental Kuznets curve existence: in the current context, economic development is accompanied by accelerated development of the services sector and a decrease in the share of industry in GDP. Assessments of the impact of the factors characterizing the current economic policy, such as liberalization of pricing, liberalization of foreign trade and international monetary policy, reform of non-bank financial institutions and liberalization of the energy market confirm the assumption of the positive impact of economic reforms on reduction of emissions. Economic reforms should contribute to improvement of production efficiency, including reduction in energy costs. This particularly applies to liberalization of the energy market (see Table 3).

*Table following on the next page*

*Table 3: Impact of infrastructure reforms (energy market reforms) on the amount of CO2 emission - Dependent variable - CO2 emission per capita (natural logarithm) (standard errors are given in brackets)*

Variable	
GDP per capita (in constant prices as per PPP)	5.759*** (0.591)
GDP per capita (in constant prices as per PPP) (squared)	-0.279*** (0.032)
Infrastructure reforms (of energy market) - EBRD Index	-0.139*** (0.024)
Constant	-27.379*** (2.747)
F test	F=67.84 Prob>F =0.000
R <sup>2</sup> within	0.4772
R <sup>2</sup> between	0.1856
R <sup>2</sup> overall	0.1990
Number of observations	242

\*\*\* statistically significant at 1%-level;

\*\* statistically significant at 5%-level;

\* statistically significant at 10%-level.

Tables 4 and 5 present an assessment of the impact on the amount of CO2 emissions depending on a country's participation in the Kyoto Protocol. Following the approach proposed in (Chousa at al., 2008), we distinguish two forms of such country participation: the signing of the protocol and its ratification.

*Table 4: Impact of the Kyoto Protocol signing on the amount of CO2 emissions - Dependent variable - CO2 emission per capita (natural logarithm) (standard errors are given in brackets)*

Variable	
GDP per capita (in constant prices as per PPP)	5.516*** (0.619)
GDP per capita (in constant prices as per PPP) (squared)	-0.275*** (0.034)
the Kyoto Protocol signed	-0.058* (0.031)
Constant	-25.768*** (2.860)
F test	F=52.64 Prob>F =0.000
R <sup>2</sup> within	0.4113
R <sup>2</sup> between	0.1391
R <sup>2</sup> overall	0.1597
Number of observations	245

\*\*\* statistically significant at 1%-level;

\*\* statistically significant at 5%-level;

\* statistically significant at 10%-level.

*Table 5: Impact of the Kyoto Protocol ratification on the amount of CO2 emissions -  
Dependent variable - CO2 emission per capita (natural logarithm) (standard errors are given  
in brackets)*

Variable	
GDP per capita (in constant prices as per PPP)	5.497*** (0.648)
GDP per capita (in constant prices as per PPP) (squared)	-0.276*** (0.036)
the Kyoto Protocol ratified	-0.020 (0.034)
Constant	-25.548*** (2.946)
F test	F=50.81 Prob>F =0.000
R <sup>2</sup> within	0.4028
R <sup>2</sup> between	0.1394
R <sup>2</sup> overall	0.1594
Number of observations	245

\*\*\* statistically significant at 1%-level;

\*\* statistically significant at 5%-level;

\* statistically significant at 10%-level.

These results demonstrate that both the signing and ratification of the Kyoto Protocol correspond to a lower level of emissions, while the impact of the Kyoto Protocol signing on the CO2 emissions is more significant than its ratification. This result appears to be interpreted as follows: the decision on signing the Kyoto Protocol is considered by the authorities as the necessity to reduce emissions and take some measures in this direction without waiting for ratification. However, the difference appeared to be not so significant, since by the end of the period under review, all the sampled countries had signed and ratified the Kyoto Protocol. Finally, at the last stage, we estimate the relationship between the level of energy consumption per capita and GDP per capita. The evaluation results are shown in Table 6.

*Table following on the next page*

*Table 6: Impact of economic development on energy consumption - Dependent variable - energy consumption (in oil equivalent) per capita (natural logarithm (standard errors are given in brackets))*

Variable	
GDP per capita (in constant prices as per PPP)	0.450*** (0.041)
Industry share in GDP	-0.0046 (0.0029)
Infrastructure reforms (of energy market) - EBRD Index	-0.082*** (0.018)
Constant	3.786*** (0.362)
F test	F=51.16 Prob>F =0.000
R <sup>2</sup> within	0.3961
R <sup>2</sup> between	0.4198
R <sup>2</sup> overall	0.4041
Number of observations	253

\*\*\* statistically significant at 1%-level;

\*\* statistically significant at 5%-level;

\* statistically significant at 10%-level.

The conclusion that an increase in GDP is accompanied by an increase in energy consumption is not unexpected: according to our data, in general, an increase in GDP per capita by 1% means an increase in energy consumption per capita by 0.4-0.5%. In combination with the fact that the hypothesis of the environmental Kuznets curve existence has been confirmed, it is a sign that a decrease in CO<sub>2</sub> emissions or, at least, a decrease in their growth rate is not associated with curbing energy consumption, but with more efficient (from the point of reduction in CO<sub>2</sub> emissions) combustion technologies or using fuels with lower emissions. Thus, at the present stage, the countries of Eastern Europe and the Baltic countries approaching the turning point of the environmental Kuznets curve do not need to severely limit economic growth by restraining energy consumption, but CO<sub>2</sub> emissions can be reduced by improving technologies.

## 5. MAIN CONCLUSIONS

- The hypothesis of the environmental Kuznets curve existence is supported for the countries of Eastern Europe and the Baltic countries.
- The calculated turning point (about \$ 20,000 in 2011 as per PPP) indicates that countries in transition with the highest income level correspond to the descending section of the Kuznets curve.
- The share of industry in GDP has the greatest impact on emissions as compared to all the rest factors characterizing the economy development.
- Economy reforms and, especially, energy market reforms are factors that have a positive impact (decreasing) on CO<sub>2</sub> emissions.
- Country's participation in the Kyoto Protocol in any form (signing and ratification) results in reduction in greenhouse gas emissions.
- The nature of the relationship between GDP and energy consumption does not confirm the concerns often expressed about the need for a sharp reduction in energy consumption and deceleration in economic growth to reduce CO<sub>2</sub> emissions.



## LITERATURE:

1. Brock, W., Taylor, M.S. (2006) Economic growth and the environment: a review of theory and empirics. *The Handbook of Economic Growth* / ed. by Durlauf S., Aghion, P., Amsterdam, North Holland: Elsevier Science B.V.
2. Chousa, J., Tamazian, A. and Vadlamannati, K.C. (2008) *Rapid Economic Growth At The Cost Of Environment Degradation? – Panel Data Evidence From BRIC Economies*. (Working Paper. No. 908). William Davidson Institute..
3. Grossman, G., Krueger, A.B. (1995) Economic Growth and the Environment. *Quarterly Journal of Economics*. Vol. 112. P. 353 – 377.
4. Holtz-Eakin, D., Selden, T.M. (1995) Stoking the fires? CO2 emissions and economic growth. *Journal of Public Economics*. Vol. 57. P. 85–101.
5. Managi, S. (2006) Pollution, natural resource and economic growth: an econometric analysis. *Int. J. Global Environmental Issues*. Vol. 6. No. 1. P. 73–88.

## INTERNATIONAL POLICY OF UZBEKISTAN IN THE PERIOD OF SHAVKAT MIRZIYOYEV'S TERM - STRATEGY AND PRACTICE

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### **ABSTRACT**

*This article provides the analysis of changes in Uzbekistan's international policy after the beginning of presidency of Shavkat Mirziyoyev. The information based on a situational analysis of applied doctrinal documents and first diplomatical decisions of newly-elected president notes that Uzbekistan could achieve diplomatically efficient position as a referral agent in the development of Chinese transportation and logistics projects in Eurasian space. Author emphasizes the fact that the goal-setting in international policy of Uzbekistan is tightly intertwined with the objectives of social and economic development; also, the active diplomacy of China made Tashkent start counterbalance economy activities in Central Asia. In addition, the article provides information about the changes in international climate around Uzbekistan and its neighbour countries, affected by the enforcement of Chinese cross-border projects.*

**Keywords:** *political and economic development, regional cooperation, Uzbekistan*

### **1. INTRODUCTION**

At the beginning of 21'st century's second decade, the economy of Uzbekistan became one of the most productive regional economies, with the annual average growth rate of GDP, which equals 7% for the first decade. The international trade became one of the driving factors for economic growth; according to that, the downsizing of international economic rate (from 25 billion USD in 2012 to 19 billion USD in 2016) was followed by GDP's decrease (from 8.2% in 2012 to 6% in 2017) (UNCTAD). The country faced the necessity to boost the foreign trade in order to keep the speed of economic expansion at the appropriate level, where the modernization of trading and transport infrastructure are the factors to achieve the competitive rate of Uzbekistan in trading goods for world market as essential part. In view of this, the objective need for Uzbekistan social and economic evolution was congruent with the development strategy called "One Belt, One Road", adopted by China in 2013, in which case Tashkent had an opportunity to attract the additional investments and concessional lending from Chinese financial organizations (foremost the Asian Infrastructure Investment Bank and the Silk Road Fund). In addition, it had an opportunity to diversify its transport infrastructure with the purpose of further connexity of country's transport system with the existing and projected transport corridors in Central Asia. At the same time, the last period of Islam Karimov's presidency became hard for keeping of Uzbekistan international policy's traditional formula, which is based on the country's equidistance and the active presence in agenda of Central Asia. As a fact, certain self-isolation of Uzbekistan occurred, caused by the pressure of existing territorial and water problems; the blockage of regional international dialogue also was registered (Malysheva, pp. 92-98). The balance of convenience began to displace into the side of China, these changes had negative effect on the external trade index: Russia's and Kazakhstan's role in the export of Uzbekistan goods reduced sharply from 40.1% in 2012 to 21.1% in 2016 (The Growth Lab at Harvard University).

However, due to natural causes in 2016, the Uzbekistan started a new political cycle, which was exposed to necessity of coping with drawback of former president Islam Karimov's international policy activity.

## **2. NEW OPPORTUNITY FOR STRATEGING OF ECONOMIC DEVELOPMENT**

After the win of Shavkat Mirziyoyev at the election of the President of Uzbekistan, the shift of power came without any social or political disruption. This fact allowed new government to fix on solving Uzbekistan's economy development problems. On February 7, 2012 the new government's paradigm of main country development paths called "Action Strategy of Five Prime Development Directions for the Country in 2017-2021" (hereafter referred to as "Strategy"). The Strategy concentrates on internal problems of Uzbekistan, and its essential decision plots are formed in accordance with objectives of social and economic development and its intensification. Referring to the letter of the law, the "international" part of document remains committed to the traditional model of Uzbekistan international policy, focusing on equidistance from major centers of regional and worldwide policy, and with emphasis on the situation in Central Asia. Among other things, the text of Strategy document doesn't mention any special economic blocks, political initiatives or foreign partners. The content analysis of Strategy text's sections, however, shows the big amount of conjunctions and confluences with Chinese as well as Russian regional economic initiatives, that illustrates the actual imbedding of social and economic development plans of Uzbekistan into the macroeconomic policy of Central Asia. First section of Strategy called "The Development of Governmental and Public Work" and "The Providing of Rule of Statute Law and Reforming of Legal Institutional Framework" constitute the contradiction against the worked out reputation of Uzbekistan as the government with the high rate of corruption and cultivated "clan system". The following tasks, from the point of international policy, can be esteemed as the effort to equalize limiting factors of the investment environment: strengthening of judicial power's independence, improvement of anti-crime system's effectiveness and crime prevention, emerging role of the parliament and political parties, reform of public management system, implementation of public control systems etc. Mentioned parts of Strategy form the new international reputation of Uzbekistan, especially for foreign investors, and guarantee the effective usage of brought-in capitals and purchased property. Second section of Strategy "The Development and Liberalization of Economy" calls upon advancement of foreign trade relations and international industry cooperation. In particular, objectives of macroeconomic stabilization, keeping of economy ratings at the appropriate level, competitive growth, modernization of agriculture, continuation of government's interventions into economy reduction, stimulation of small business and free enterprise, complex and balanced social and economic development of regions, districts and cities, active attraction of foreign investments in economy sectors and country regions by virtue of improving the investment environment - all of these items are integrated into a single process. In addition, it can be said that the content and the subject matter of this particular section of the Strategy is the most structured and extensional (the amount of symbols of this part is up to 10 thousand from 31 thousand in the whole document (in Russian)), which proves circumstantially that the new Uzbekistan government's prime directive is international economic activity. Third section "The Development of Social Sphere" contains indications for the building activation, which includes transportation and communication system and contacts directly with the main case of Chinese "One Belt, One Road" strategy. The quality of sub-total result can be applied to the fact that the new President of Uzbekistan, Shavkat Mirziyoyev declared the ambitious plans of economic development intensification and modernization. The proposed objectives of internal economic development of Uzbekistan were, however, tied circumstantially to external factors. The Central Asia macroeconomy operates limited resources, and has insufficient variants for economic development's intensification relevant for

minor countries of region. Russian initiative proposes supranational forms of collaboration, but opposes the international policy's doctrine of Uzbekistan. In this case, conditions of Chinese project are best suited for modern political line of Uzbekistan, correlating firmly with its objectives for foreign trade traffic diversification and attraction of investments into the development of economy infrastructure. Moreover, the position of China were recognizable strengthened after July of 2016, when the key object of Chinese-Uzbekistan infrastructure – railway Angren-Pap, passing through the Kamchik mountain pass – was brought into use; it terminated the formation of whole railroad system of Uzbekistan, and, potentially, became large link of international railroad corridor of China – Central Asia – Europe (The Ministry of Foreign Affairs of Uzbekistan). Despite the excitement around “One Belt, One Road” project, Uzbekistan tries to keep the distance from it at the doctrinal level and never points directly at equalization with it. At this context, the prime international objective for Shavkat Mirziyoyev is to switch over from policy of equidistance to international interests dynamical balance policy, with preventing or strong reduction of political asymmetry; these actions can provide more profitable negotiation situation with China. Event and content analysis of new President's first international actions demonstrates that Uzbekistan achieves its goal through solving of two international policy's objectives. The first objective is amplification of economy connection with Russia as the counterbalance to economic cooperation with China. The second objective is to restart the regional diplomacy, responsible for economic collaboration and security problems, with Uzbekistan as leader. That action will determine Uzbekistan as a motivated and active participant of region-wide development strategy.

### 3. THE FIRST DIPLOMATIC STEPS

March 6-7, 2017 – state visit to Turkmenistan (The President of Uzbekistan news, 06.03.17). Visiting of the country which declares the policy of neutrality became symbolical for Uzbekistan as the successor of former government's agenda: the equidistance and the emphasis on regional diplomacy. Along with mentioning of political symbols, the agenda of meeting was laced with themes of collaboration, primarily at the international economy sphere, such as: building of highway and railroad bridges, organization of goods transit and various customs concessions. March 22-23, 2017 – second state visit to Kazakhstan, which confirmed the priority of Tashkent's external policy and its focusing on the problems of Central Asia (The President of Uzbekistan news, 23.03.17). Shavkat Mirziyoyev used the opportunity of political cycle shift in Uzbekistan to take away the Kazak-Uzbek relations from crisis, in which they were dwelling before these days. Questions of foreign economy logistics, cargo transition preferences and discounts, reconstruction of traffic roads were discussed with Kazakhstan. April 4-5, 2017 – third state visit to Russia, where both sides of dialogue involved big amount of political and business groups, which were focused on quality and quantity economy ratings: over 50 contracts were signed, with the total amount of money estimated as 15 billion USD (IA Sputnik, 05.04.17). Results, achieved at this meeting are marked as historical (The President of Uzbekistan news, 06.04.2017). In conclusion, these Russia-Uzbekistan negotiations confirmed the special relation status between Moscow and Tashkent, without involving of Uzbekistan into economic or military strategic projects, but with mutual relations development, in general, trading and economic development. May 11-13, 2017 – fourth state visit to China (The President of Uzbekistan news, 15.05.2017). It's obvious, that the themes brought at this visit were focused on adjunction of Uzbekistan to Chinese plans of Central Asia industry and logistic development under the frame of “One Belt, One Road” project. It needs to be mentioned, however, that the previous diplomacy actions of Uzbekistan were followed by the increasing amount of successful results in negotiations with China: 105 contracts were signed, with total amount of 23 billion USD (IA Sputnik, 16.05.18). Furthermore, another result was the signed Mutual statement about further collaboration in strategy, focusing on next spheres: trading,

economy, investments, finances and technologies, transport and communications, agriculture and construction of industrial estate, etc. First political actions of Shavkat Mirziyoyev demonstrate the actions of Uzbekistan, which are focused on restoration of balance in the triangle of Moscow-Tashkent-Beijing. As the result, the restoring of Russia and Kazakhstan external trade positions in Uzbekistan happened: in 2017 the percentage of Russia and Kazakhstan in the export of Uzbekistan was 23.3%, in nine months of 2018 it was increased to 27.4% (The State Statistics Committee of the Republic of Uzbekistan). In this case, the economy of Eurasian Economy Union could suppress China from the leading positions as international trade partner of Uzbekistan, ending the ominous trend of the last years. Additionally, it can be mentioned, that the summit meeting of SCO-2018 repeated the sequence of diplomatic audiences in the triangle of Moscow-Tashkent-Beijing: firstly Mirziyoyev-Putin, secondly – Mirziyoyev-Xi. This fact illustrates the formation of diplomatic reception culture in foreign policy of Uzbekistan.

#### 4. REGIONAL POLICY APPROACH

Further foreign policy actions of Uzbekistan's new government shows the intention to enhance the positions of country as the coordinator of Central Asia region-wide agenda, which priority is the idea of creating the "region of prosperity", emphasizing on mutual social and economic development of Central Asia countries. The Letter to the Supreme Assembly of Uzbekistan, Oliy Majlis, and the speech in General Assembly of UN of Shavkat Mirziyoyev in 2017 determined the idea of Uzbekistan's international policy: the region of Central Asia is the priority of foreign policy in terms of mutual dialogue, neighborliness and compromises. The practical movement by chosen course can be established by activation of diplomatic business operations with neighbor countries, where the keynote of all the applications and agreements is the idea of creating the united economic and transport space between the countries of Central Asia as the guaranty of successful social and economic development and modernization of regional countries.

##### 4.1. Neighbourhood diplomacy

- *Kazakhstan.* The restoring and restart of bilateral dialogue with Kazakhstan was one of the most important conditions for effectiveness of Uzbekistan's international policy. In the period of 2017-2018 years the Kazakhstan point of direction in international policy of President of Uzbekistan became the most active – 6 visits in two years (The President of Uzbekistan news, 17.08.2018). The essential result was the Cooperative declaration about further development of strategic partnership between the republic of Uzbekistan and the republic of Kazakhstan and the Strategy of economic cooperation for 2017-2019. These documents are illustrating the new status of international relations between countries. During this two-year long diplomatic process, the main theme for conversations is the theme of transport and development of transit corridors in order to achieve short-term and effective approach to export markets. In particular, the emphasis is made on the statement that the establishment of mutual trading preferences and additional transit of foreign trade discounts allows countries to widen their cooperation in this sphere and to attract large amounts of transit cargo. Also, the increasing interest in the most rapid realization of reconstruction project of highway "Beyneu – Akzhigit – Uzbekistan border" has been noted.
- *Turkmenistan.* In the period of 2017-2018 Shavkat Mirziyoyev has visited Turkmenistan for 4 times. Amongst all the important documents, the Contract about the economy collaboration for the years of 2018-2020 can be also mentioned. The modern Turkmen-Uzbek dialogue emphasis is made on the economy and transport cooperation. Presidents of both countries are declaring that the transport sector becomes the priority of economic

collaboration. The high rating is given to the opening of automobile and railway bridges of Turkmenabad – Farap, and one of the most important development stages in relations between Tashkent and Ashkhabad is the Trans-Caucasian transport corridor leading to the countries of South and North Europe, Near East, South and South-East Asia, and the realization of international transport corridor of Uzbekistan – Turkmenistan – Iran – Oman.

- *Kyrgyzstan.* The starting positions of Kyrgyz-Uzbek relations before the presidency of Shavkat Mirziyoyev were at the very low level, the main contradiction formed around the territorial dispute. Kyrgyzstan, however, is an important partner in successful providing of trading route “Termez – Mazari-Sharif – Andhoi – Great - Iran” and “Great – Andhoi – Mazari-Sharif” [Ergashev]. It is obvious, that the new foreign policy line of Tashkent could not avoid the questions of relations repairing with Bishkek. Three visits and three political receptions in two years completely restarted Kyrgyz-Uzbek relations. The year of 2017 became the game-changing in relations between the Tashkent and the Bishkek: it was possible to make an agreement about 85% of state borderlines and to activate the work of Intergovernmental commission of UN for decision making for the remaining 15%: the Declaration of strategic partnership, friendship, neighborliness and trust between the republic of Uzbekistan and the republic of Kyrgyzstan was signed. As in the case of other regional partners, in Kyrgyz-Uzbek diplomatic process the strategic type of mutual cooperation in the sphere of transport and development of transport corridors, which are providing short-term and effective access to foreign markets is said the most emphatically.
- *Tajikistan.* At the beginning of 2017, under the influence of aquatic and terrestrial conflicts, the Tajik-Uzbek relations also were frozen. However, the diplomatic activity of Shavkat Mirziyoyev could surpass the negative trends in relations between Dushanbe and Tashkent. Four meetings at the supreme level at the term of 2018 allowed to sign 29 two-sided contracts, such as the Contract about strategic partnership between the republic of Uzbekistan and republic of Tajikistan, and presidents of both countries confirmed, that between the Uzbekistan and the Tajikistan there is no unresolved issues. In Tajik-Uzbek relations, without exceptions, the important key of economic diplomacy is the transport and logistics part: “Nowadays before us are opening the immense opportunities for full realization of economic and transport potentials of our countries, followed by activation of cultural and humanitarian exchange. We want this visit to go down in history, and our agreements to serve many years for our nations”, - said Shavkat Mirziyoyev (The President of Uzbekistan news, 17.08.2018).

Summing up, for the short period Uzbekistan could achieve significant advance in international policy with its neighbors, establish or renovate strategic statements of mutual relations focusing on the pragmatic ways of social and economic development, especially in a sphere of region-wide transport and logistics cooperation. Using bilateral agreements, Uzbekistan could start the new regional agenda, where the main informational patterns are: transit potential, cargo transporting amount increasing, mutual economic interests and preferences, transport communications and infrastructure, etc.

#### **4.2. Regional security initiative**

The Uzbekistan diplomacy initiative based on the principle “Central Asia a priori”, spread into the multilateral form of Tashkent foreign policy. The presentation of main determinants of multilateral diplomacy of Shavkat Mirziyoyev happened on March 27, 2018 on the Tashkent international summit on the theme of Afghanistan called “Peaceful process, security sphere collaboration and regional cooperation”.

In term of 2017-2018 the president of Uzbekistan could coordinate the opening of new diplomatic track on Afghanistan problems solving with regional and international partners. The set of statements referring to the multilateral foreign policy of the new president of Uzbekistan can be determined. Firstly, the Tashkent summit became a claim to the leadership of Uzbekistan in the initiative of unity of Central Asia countries and the establishing of collective future work. Uzbekistan determined itself as an expresser of regional interests of Central Asia countries, by promoting the following ideas sequentially: the Central Asia is the bridge in the middle of Eurasia, the need to take the responsibility for the future of region; the prosperity of Central Asia is the main goal; the principle of indivisibility of security, etc. The necessity to develop the collective subjectivity of regional countries against the background of global actors' interests is emphasized (Statement by the Ministry of Foreign Affairs of Uzbekistan). Secondly, Tashkent connected the questions of collective security with the questions of social and economic development, making the note on the straight dependence between these spheres of living. Moreover, the economic development is formulated in the utterly pragmatic case: realization of regional trading and transit, transport, energetic, infrastructural and communication projects (Tashkent Declaration on Afghanistan). In this context, before the Tashkent summit there was a first session of the new collaboration program called "Central Asia + Afghanistan" (C5+1), which focal point is to discuss the direct ways of cooperation between the countries of Central Asia and the Afghanistan. The work of this program will provide the successful integration of Afghanistan into the system of economic and infrastructure networks along with the Central Asia countries, and effective realization of direct projects and region-wide programs. The influence of determinants of multilateral diplomacy, which were mentioned before, is possible to overlook in the speech of Uzbekistan party at the SCO summit in Qingdao, which was fulfilled with economic problems solving ideas, it is uncommon for the established discourse of this Organization (The President of Uzbekistan news, 10.06.2018). Uzbekistan made a declaration about the development of trading and transport communications in a frame of SCO, endorsed the building of railway Mazari-Sharif – Great, China – Kyrgyzstan – Uzbekistan, then endorsed the development of trans-regional corridors of Central Asia – Arabian Gulf, North – South and East – West.

## 5. CONSLUSION

The first years of Shavkat Mirziyoyev's presidency are capable of determining the upheaval of traditional foreign policy principles, and of creating of new theoretical and practical aspects in bilateral and multilateral diplomacy of Uzbekistan. At the strategic level the Uzbekistan keeps the political distance from basic centers of regional influence, appealing to the internal problems of social, economic and political development. However, the logic of declared tasks of national development has many intersections and binds with big countries economic development plans, in first place, China with its strategy of "One Road, One Belt". The economic and political circumstances are forming the tension for Uzbekistan's foreign policy. On the one hand, the development of foreign economy connections with China in general, and Chinese transport strategy in particular, are comparing with the objectives of Uzbekistan's social and economic development, acting as the main partner for further diversification of trade routes, attraction of investments and increasing of commercial exchange. On the other hand, the asymmetry of economic development and the increasing of Chinese influence in Uzbekistan economy is forming, which is leading to the weakening of Uzbekistan's negotiation points in economic diplomacy with Beijing. The Government of Uzbekistan attempts to build new foreign policy concepts and formulae at bilateral and multilateral levels, in order to counterbalance the Chinese influence and to strengthen its negotiating positions in relations with China. Firstly, by the equilibration of macroeconomic disbalance by the using of intensification of trading, investment and cooperative industry collaborations with the economies of EAEU countries,

primarily with Russia. Secondly, the improvement of Uzbekistan's role as the coordinator of interrelated social and economic agenda between Central Asia countries with the help of bilateral relations strategic basis relooking with neighbor countries in favor of region-wide economic objectives in transport sphere and foreign economy activities liberalization. Thirdly, by formation of Uzbekistan's international reputation as a dutiful multilateral regional security participant, who is capable of formulation and realization of Central Asia security problems solving point of view. The established diplomatic style of the President Shavkat Mirziyoyev demonstrates its efficiency: it is possible to keep the balance between big external actors and realization of country planes. Even more, the present international policy of Tashkent make it able to act as a referral agent for Chinese transport and logistics projects through the Eurasian space both in ideological and practical senses. This fact establishes a strong negotiating position in economic diplomacy between the Uzbekistan and the China.

## LITERATURE:

1. Action strategy of five prime development directions for the country in 2017 – 2021 (2017). Retrieved 01.06.2019 from <https://www.gazeta.uz/ru/2017/02/07/strategy>
2. Ergashev B. (2017) Silk Road Economic Belt and Uzbekistan. Retrieved 01.06.2019 from <http://china-uz-friendship.com/?cat=8>  
<http://president.uz/ru/lists/category/8?page=18&per-page=10>  
<http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx>  
<https://mfa.uz/ru/press/statements/2018/03/14123/>
3. Malysheva D.B. (2018) Updating the foreign policy of Uzbekistan (Yearbook “West – East – Russia 2017). Location: Moskow, IMEMO RAS.
4. Message from the President of the Republic of Uzbekistan Shavkat Mirziyoyev Oliy Majlis (23.12.2017). Retrieved 01.06.2019 from <https://msu.uz/main/page?id=293>
5. Mirziyoyev's visit to the Russian Federation: third in turn - first in importance (05.04.17). IA Sputnik. Retrieved 01.06.2019 from <https://ru.sputniknews-uz.com/politics/20170405/5132722/Mirzieev-Uzbekistan-vizit-Putin.html>
6. Speech by President of Uzbekistan Shavkat Mirziyoyev at the 72nd session of the UN General Assembly (20.09.17). Retrieved 01.06.2019 from: [https://youtu.be/0OI\\_DAz8Twk](https://youtu.be/0OI_DAz8Twk)
7. Statement by the Ministry of Foreign Affairs of Uzbekistan at Tashkent International High-Level Conference on Afghanistan “Peace process, security cooperation and regional cooperation” (2018). Retrieved 01.06.2019 from
8. Tashkent Declaration on Afghanistan (2018). Retrieved 01.06.2019 from <http://www.ut.uz/ru/politika/tashkentskaya-deklaratsiya-po-afganistanu/>
9. The Growth Lab at Harvard University: statistical data on foreign trade partners of Uzbekistan. Retrieved 01.06.2019 from <http://atlas.cid.harvard.edu>
10. The Ministry of Foreign Affairs of Uzbekistan. Uzbekistan: Integration for Development (2017). Retrieved 01.06.2019 from <https://mfa.uz/ru/press/news/2017/04/10719/>
11. The President of Uzbekistan news: a historic visit that opened up new horizons for cooperation between Uzbekistan and Russia (06.04.2017). Retrieved 01.06.2019 from <https://president.uz/ru/lists/view/383>
12. The President of Uzbekistan news: foreign visits of the President of Uzbekistan in 2016-2018. Retrieved 01.06.2019 from <https://president.uz/ru/lists/category/8>
13. The President of Uzbekistan news: high results of cooperation based on mutual trust and strong friendship (15.05.17). Retrieved 01.06.2019 from
14. The President of Uzbekistan news: in Uzbek-Tajik relations huge opportunities open up (17.08.18). Retrieved 01.06.2019 from <https://president.uz/ru/lists/view/1941>



15. The President of Uzbekistan news: practical proposals on the development of trade relations in the SCO space are put forward (10.06.18). Retrieved 01.06.2019 from <https://president.uz/ru/lists/view/1775>
16. The President of Uzbekistan news: prospective documents signed between Uzbekistan and Kazakhstan (23.03.17). Retrieved 01.06.2019 from <https://president.uz/ru/lists/view/342>
17. The President of Uzbekistan news: Uzbekistan and Turkmenistan are strategic partners (06.03.17). Retrieved 01.06.2019 from <https://president.uz/ru/lists/view/292>
18. The State Statistics Committee of the Republic of Uzbekistan: foreign trade turnover of the Republic of Uzbekistan for January - December 2017 and January-July 2018. Retrieved 01.06.2019 from <https://stat.uz/ru/ofitsialnaya-statistika/vneshneekonomicheskaya-deyatelnost-i-torgovlya/analitika-torgovlya>
19. UNCTAD: statistical data on economic development and foreign trade of Uzbekistan for 2012-2016. Retrieved 01.06.2019 from
20. Yuan in your pocket, or treats from the Middle Kingdom (16.05.2019). IA Sputnik. Retrieved 01.06.2019 from <https://ru.sputniknews-uz.com/politics/20170515/5409178/Mirzиеev-itogi-vizit-kitai.html>

## FINANCIAL MANAGEMENT IN THE BACKGROUND OF COST CONTRIBUTION ARRANGEMENTS AND COST SHARING AGREEMENTS

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### ABSTRACT

*For many years, multinational companies have been using cost sharing mechanisms as part of tax planning strategies. The aim of the article is to approach the issues of these contracts, cost-sharing contracts in relation to the phenomenon of transfer prices between dependent enterprises. These contracts can be considered a financial management tool for corporations, so it is very important to know the correct charging of transfer prices in the background of Cost contribution arrangements and Cost sharing agreements. These contracts should be drafted in accordance with applicable tax laws, complying with tax regulations, arm's length principle and should also allow for tax optimization. Cost sharing agreements and Cost contribution arrangements are commonly defined and understood as contracts between entities for the purpose of sharing the costs and risks of developing, producing or otherwise acquiring assets, rights or services, and defining ownership interests in such assets, rights or services, based on individual expectations of the benefits of the parties. Each individual participant's share of the total cost of such a contract should be comparable to that participant's reasonable share of the total expected benefit. The fundamental problem of both contracts is the estimation of the reasonably expected benefits of such contracts for individual participants. Planning for cost sharing is a very specific process, requiring a thorough understanding of the business and profit allocation goals. While it should not be undertaken easily, Cost contribution arrangements and Cost sharing agreements may provide both certainty and tax benefits. Alternatives to cost sharing should always be considered..*

**Keywords:** *cost contribution arrangements, cost sharing agreements, financial management*

### 1. INTRODUCTION

Nowadays, businesses are contracting transnational chain manufacturers and not many units are a full-fledged distributor (Gavurova, et al. 2017). More and more centres of shared services are currently being established to provide a related group of service, research and development or other businesses. These relationships being legally regulated by Service level agreements or more commonly used Cost sharing agreements or Cost contribution arrangements. In the financial management of a transnational group of affiliated companies, it is necessary to know how to deal with CCAs and CSAs in the context of tax regulation, the principle of independent relationship, and also that the procedure under these contracts provides the possibility of tax optimizations. Kliestik, et al. (2017) and Durica, et al. (2019) states it is increasingly challenging to predict company's financial situation as corporations through such contracts have

become more global and more complex and as they have developed sophisticated schemes to hide their actual situations under the guise of “optimization” for tax authorities.

## 2. LITERATURE REVIEW

Global contractual agreements, negotiated among representatives of transnational corporations are a form of private regulation on a global scale. Promoted and conceived by the global union federations, their numbers have increased significantly over the past two decades. However, as empirical research by the Fichter and McCallum (2015) has shown, their results of implementation has been poor. The reason is that they were negotiated in the context of work-management relationship based on ‘social partnership’. Cost-sharing has historically been a phenomenon especially for US, but cost sharing agreements are increasingly being adopted by many other nations, including many of the largest systems in the European Union (EU). The global financial crisis of the years 2007-2008 and its long term consequences, have resulted in higher pressure in many sector to reduce costs and increase the efficiency of operational activities (Balcerzak, et al. 2018). Sadaf, et al. (2019) states that optimal investors have a strong interest in monitoring corporate capital management structure a the ownership structure that companies support minimize their agency costs. A similar issue is also the subject of an article by Gandolfi, et al. (2018). Contracts such cost sharing agreement and cost contribution arrangement are accepted by various multinational corporations, but very often they are also applied in the national economy of the countries, specifically in the public sector. Cost-sharing — that is, the principle that a variety of sources should make financial contributions to higher education — has long been a staple of US higher education (Taylor, Morphew, 2015). In some countries, school fees are set by the national ministry (France, Switzerland), while the universities in Croatia and Portugal decide on their own school levels. The results indicate that other national systems should approach the US model of cost-sharing cautiously even when it is obvious cost-sharing can provide a mechanism to increase total available funding for universities (Boer, Jongbloed, 2012) (Nica, Catalina-Oana, 2017). Also the area of health systems implement cost sharing to help reduce health care expenditure and exploitation by discouraging the use of unnecessary health care services (Perkowski, Rodberg, 2016) (Barros, Martinez-Giralt, 2008). A cost sharing agreement is used in the paper by Tinoco, et al. (2017) to reduce the total number of shifts, thereby reducing transport costs and CO2 emissions. It is logical that the cost should be minimal because only in that case is the market value of the enterprise maximal (Lehutova, et al. 2013). In CSA and CCA often originate a problem with how to set the profitability of service providers that provide their services to related parties. In addition, it is also difficult to determine appropriate part of the cost for each relevant participant involved in Cost contribution arrangement or Cost share agreement (Jelinek, 2010).

## 3. TYPES AND DEFINITIONS OF COST CONTRIBUTION ARRANGEMENTS AND COST SHARING AGREEMENTS

Cost contribution arrangements (CCA) and Cost sharing agreements (CSA) are very similar and are defined as contractual agreements between undertakings to share the costs and risks associated with the development, production or other acquisition of tangible or intangible assets, services or rights on the basis of the individual expected benefits of the individual parties. Each participant's share of the total cost must be comparable to the participant's share of the total expected benefit. In practice, CCA and CSA are divided into three basic groups:

### 3.1. CCA and CSA concluded for research and development

These contracts are concluded for the purpose of carrying out joint research and development (R&D), production or other means of acquiring property or rights. From this relationship, the participants benefit, in case of a failure of R&D, the participants have to bear losses.

Such contracts are characterized by the high risk that CCA and CSA have spread across multiple entities that would not otherwise put their funds into such a risky business. The timeframe of such a contract is difficult to estimate, therefore, these contracts have a sound financial leverage. In the case of successful research and development, the participant obtain a very valuable benefit in the use or possession of significant intangible assets in relatively inexpensive way (only R&D contribution). Such investment represents a high return of invested funds and a very short payback period. The reasons why entities enter into such contracts are therefore related to the high cost and risk of the activities, the lack of the necessary knowledge, experience or the entity's funds. As part of the CCA and CSA closure, it is very important for the participant to have a real share of the assets created under the contract at the appropriate rate.

### **3.2. CCA and CSA concluded for purpose of sharing services**

The entity, through cost sharing, gains a common benefit from the provision of services. In practice, the most common are the centers of shared technical, administrative or management services, ie the subject of such contracts is not any intangible or tangible property or rights. Individual participants could benefit from the services provided separately but, in the case of a shared center of shared services, they benefit from services provided in the same quality but at a lower cost. Such types of contracts are concluded between related parties, that is, between group-based companies, due to the fact that some services are centralized for efficiency reasons (similar administrative procedures, technical solutions). Such shared services represent lower risks of commercial failure.

### **3.3. Combination of the above-mentioned groups**

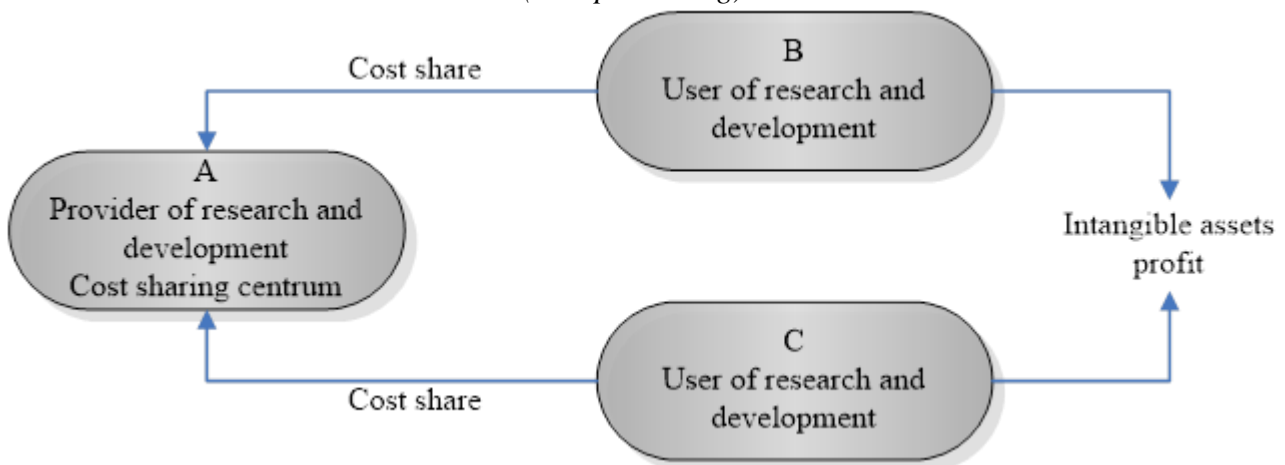
The purpose of such contracts is joint research and development, acquire property and rights, but also centralization the purchase of basic materials for the development of a new product, shared technical support, or centralized marketing of research and development assets. This division does not cover all areas of use of these contracts, as they can be concluded, for example, for any joint fund building, development of advertising campaigns or sharing of accounting or human resources services.

### **3.4. Differences between CCA and CSA**

United States Treasury Regulation defines CSA as: „A Cost sharing agreement is an agreement under which the parties agree to share the costs of development of one or more intangibles in proportion to their shares of reasonably anticipated benefits from their individual exploitation of the interests in the intangibles assigned to them under the arrangement". The definition of CCA is not mentioned in the United States Treasury Regulation but is generally accepted as the OECD (2009) indicate: „A Cost contribution arrangement is a contractual arrangement among business enterprises to share the contributions and risks involved in the joint development, production or the obtaining of intangibles, tangible assets or services with the understanding that such intangibles, tangible assets or services are expected to create direct benefits for the businesses of each of the participants. A CCA is a contractual arrangement rather than necessarily a distinct juridical entity or fixed place of business of all the participants." It follows from the above definitions that CCAs have a wider reach than CSAs. CCA is defined as a contractual agreement, a contractual framework while CSA is clearly stated as a contract. The CCA definition clearly implies risk sharing, but it is by definition not known who and to what extent shared the risk. For CSA definitions, the risks are omitted and are not clearly stated. In practice, CSAs are most often used for research and development of intangible assets and CCA for research, development or acquisition of property, rights or services. Participants in CCA and CSA contribute primarily by financial assets, human resources or know-how in asset development.

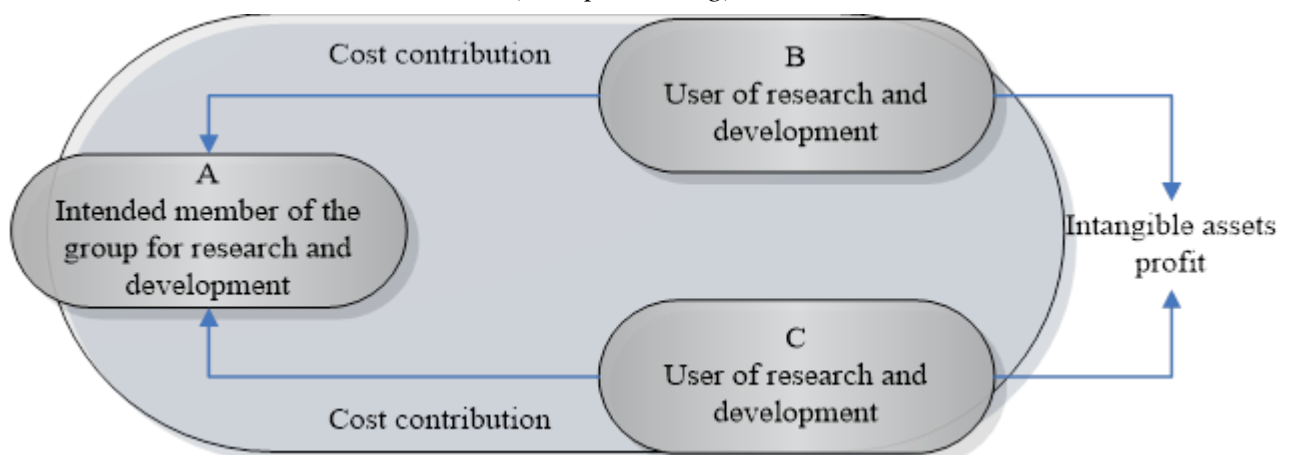
Each participant participates to a certain extent in the ownership of the results, which means that each participant has the right to dispose of the result for its own benefit without being obliged to pay the license fee to other subscribers. This results in the possibility of using the expected future result for its own purposes for the purpose of selling or leasing to a third party. As both contracts are most commonly used for research and development, we approach these contracts on the example of research and development, of the acquisition of intangible assets.

*Figure 1: Use of CSA when acquiring an intangible asset in a group of connected persons (own processing)*



Company A's goal is to carry out successful research and development, with no further economic interest in the results of its research. Companies B and C are involved in the company A's costs, the amount of which must correspond to the amount of the stake that would be contracted between independent entities.

*Figure 1: Use of CCA when acquiring an intangible asset in a group of connected persons (own processing)*



In this case, Company A's goal as a member of the R & D group is not only successful R & D but also the subsequent economic benefit of future expected results. Company A does not receive any payments for its operation. Payments from companies A, B, and C represent Company A's contributions. The amount of these contributions is derived from the company's share of the cost. The calculated level of contributions of the affiliated enterprises must be consistent with the comparable situation between independent undertakings.

### 3.5. Guideline OECD and cost-sharing

Chapter VIII of the OECD Guidelines on cost-sharing measures is relatively young. It was implemented in the OECD Guideline after Chapter VII 39 on special remuneration for services provided within a group of associated enterprises in 1997. Interestingly, the OECD Guidelines do not explicitly require that CCAs and CSAs must be concluded in written form. However, the written form of these contracts is more than appropriate because of the burden of proof of taxpayer. Seven "building points" can be inferred from the OECD Guidelines:

- each participant should contribute to the costs in proportion to the reasonably expected benefit the participant will receive,
- in determining the value of contributions by individual participants, all contributions, including assets and services, used only partially by the CCA and CSA should be included; this ratio shall be established in commercially documented manner, to correspond with accounting principles, legislation and existing facts,
- the aim is to determine the amount of contributions in the same proportion as the valuation of the shares in the expected benefit; the share of expected benefits can be valued at the level of income or cost savings previously considered or additionally achieved by individual participants,
- the participant's contributions are subject to tax legislation in the same way and to the same extent as would be incurred outside of cost-sharing contracts
- the reimbursement should be considered as a supplement to the expenditure from the payer's point of view and as a reimburseme of expenses from the recipient's point of view,
- the CCA complies with the arm's length principle if the participant's share less the related offsetting payments corresponds to that participant's share of total expected benefits; in case of non-compliance with the arm's length principle, the net contribution must be adjusted,
- in case that an undertaking becomes a participant in an existing CCA or CSA, it may acquire a share of the results of the previous activity. The part of the participant's share of the results of that previous activity should be valued at market value in order to comply with the arm's length principle. Compensation for obtaining rights to the results of previous activity for new entrants is in the form of a group payment.

### 4. CONCLUSION

Cost contribution arrangements or cost sharing agreements of research and development costs, is one of the resources sanctioned by tax authorities that can be used by multinational enterprise groups to develop and distribute intangible assets between members of the group. Such an agreement, which is frequent used as an international tax planning mechanism, can provide a solution to the challenge of determining a transfer prices for the cross-border transfer of rights to intangible asset between connected entities, thereby limiting transfer pricing uncertainty and transfer pricing risk, avoiding double taxation, as well as providing the planning opportunity for corporations to reduce their global tax liability.

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### LITERATURE:

1. Balcerzak, A.P., Kliestik, T., Streimikiene, D. and Smrcka, L. (2018). Non-Parametric Approach to Measuring the Efficiency of Banking Sectors in European Union Countries. *Acta Polytechnica Hungarica*, 2018(7), 51-70.
2. Barros, PP. and Martinez-Giralt, X. (2008). On international cost-sharing of pharmaceutical R&D. *International Journal of Health care finance & economics*, 2008(5(4)), 301-312.

3. de Boer, H. and Jongbloed B. (2012). A Cross-National Comparison of Higher Education Markets in Western Europe. *European Higher Education at the Crossroads: Proceedings of Conference on Future of Higher Education Bologna Process Researchers*, Bucharest, Romania. 2012, 553–571.
4. Durica, M., Podhorska, I. and Durana, P. (2019). Business failure prediction using cart-based model: A case of Slovak companies. *Ekonomicko-manazerske spektrum*, 2019(1), 51–61.
5. Fichter, M. and McCallum, J. K. (2015). Implementing global framework agreements: the limits of social partnership. *Global networks-a journal of Transnational Affairs*, 2015(15), S65-S85.
6. Gandolfi, G., Regalli M., Soana, M. G. and Arcuri, M. C. (2018). Underpricing and Long-Term Performance of IPOs: Evidence from European Intermediary-Oriented Markets. *Economics, Management, and Financial Markets*, 2018(3), 11–36.
7. Gavurova, B., Packova, M., Misankova, M. and Smrcka, L. (2017). Predictive potential and risks of selected bankruptcy prediction models in the Slovak business environment. *Journal of Business Economics and Management*, 2017(6), 1156-1173.
8. Jelinek, M. (2010). Commissionaires in Cost Contribution Arrangements, Critical Issues in Global Business: lessons from the past, contemporary concerns and future trends. *Proceedings of The 19th World Business Congress, Konya, Turkey*. 2010 (19), 461-468.
9. Klietstik, T., Misankova, M., Valaskova, K. and Svabova, L. (2018). Bankruptcy prevention: new effort to reflect on legal and social changes. *Science and Engineering Ethics*, 2018(2), 791-803.
10. Lehutova, K., Krizanova, A. and Klietstik, T. (2013). Quantification of equity and debt capital costs in the specific conditions of transport enterprises. *Transport Means - Proceedings of the International Conference*, Kaunas, Lithuania, 2013, 258-261.
11. Nica, E. and Catalina-Oana, M. (2017). Is Higher Education Still a Wise Investment? Evidence on Rising Student Loan Debt in the U.S. *Psychosociological Issues in Human Resource Management*, 2017 (5), 235–241.
12. OECD (2009): *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*. Paris, OECD Publications, 2009.
13. Perkowski, P. and Rodberg L. (2016). Cost Sharing, Health Care Expenditures, and Utilization: An International Comparison. *International Journal of Health Services*, 2016(45(1)), 106-123.
14. Sadaf, R., Olah, J., Popp, J. and Mate, D. (2019). Institutional Ownership and Simultaneity of Strategic Financial Decisions: An Empirical Analysis in the Case of Pakistan Stock Exchange. *E & M Ekonomie a Management*, 2019(1), 172-188.
15. Shpak, N., Sorochak, O., Hvozď, M. and Sroka, W. (2018). Risk evaluation of the reengineering projects: A case study analysis. *Scientific Annals of Economics and Business*, 2018(2), 215-226.
16. Taylor, B. J. and Morphey C. C. (2015). Trends in Cost-sharing in the US and Potential International Implications. *Higher Education Policy*, 2015(28(2)), 129-149.
17. Tinoco, S. V. P., Creemers, S. and Boute, R. N. (2017). Collaborative shipping under different cost-sharing agreements. *European Journal of Operational Research*, 2017(263 (3)), 827-837.
18. United States Treasury Regulations, Treas. Reg. Sec. 1.482-7 (a)(1),

# IMPACT OF ARTIFICIAL INTELLIGENCE ON PURCHASING DECISIONS

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## ABSTRACT

*The emergence and development of artificial intelligence are pushing the boundaries of technological development that affects all areas of social life. Marketing is no exception. Artificial intelligence emerged as a term in the 1950s and developed in the 1980s through the development of expert systems and machine learning. Arthur C. Clarke announced in 1968 awareness of artificial intelligence and its developmental capabilities in the script for the movie 2001: A Space Odyssey, where the HAL 9000 intelligent machine possesses the same intelligence as humans. Business sectors that are among the first to adopt and apply new technologies are marketing and sales, and the reason is straightforward and lies in the policy of supporting current offerings and gaining competitive advantages. As stated by Sterne (2017), there are different marketing technologies and activities that are based on artificial intelligence - from market research, collection, and analysis of large amounts of diverse data to customer relationship management (CRM). The authors of this paper explore and analyze the awareness of the presence of artificial intelligence and its impact on present and future customer behavior and their purchasing decisions. The results of the research contribute to a more positive perception of the benefits that artificial intelligence brings, and thus a willingness to adapt its application in purchasing processes.*

**Keywords:** *artificial intelligence, buyers, marketing, technology*

## 1. INTRODUCTION

The first association at a mention of artificial intelligence is robots from Hollywood science fiction movies with the human mind and human traits. Connected to this, a question one can often hear today is: “Will machines one day be more intelligent than humans, and will they be able to think?” (Gentsch, 2018). Rouhiainen (2018) emphasizes that there are many different definitions of artificial intelligence, with the explanation that there are many different professionals, each with their own opinion and understanding. The term artificial intelligence was first used in 1956 by McCarthy; however, the possibility that machines think was discussed long before. (Stern, 2017) Thus, in 1943, Americans Warren McCulloch and Walter Pitts jointly published a paper titled “A logical calculus of ideas immanent in nervous activity” in which they sought to understand the way basic brain cells function, which only later with further research were named the neural networks (<http://www.cse.chalmers.se/~coquand/AUTOMATA/mcp.pdf>). There is also Vannevar Bush, who, with his essay, “As we may think,” published in 1945, envisioned systems that would allow researchers to better and more effectively process the results of their research. He envisions the emergence of a range of new technologies, such as hypertext, personal computers, the Internet, the World Wide Web, speech recognition, and online encyclopedias such as Wikipedia (<http://web.mit.edu/STS.035/www/PDFs/think.pdf>). In 1950, Alan Turing presented his view of the concept of artificial intelligence to the London Mathematical Society with his Turing test, in which he sought to



answer the question: “Can a Machine Think?”. (Grdodjan, Roberts, 2016) Herbert A. Simon concluded in 1965 that there would be a possibility for machines to do the jobs that only humans could do until then. (UBS, undated). The emergence of expert systems in the 1980s is considered as a further attempt to develop and implement artificial intelligence. In 1971, Edward Feigenbaum from Stanford University produced the first expert system, and just a year later, MYCIN. (Tutor Hunt, undated). After the emergence of the first expert systems, a period known as the “winter of artificial intelligence” emerges, characterized by a lack of funds and the inability to fund scientific research in the field of artificial intelligence. (Mueller, et al., 2018). Rouhiainen (2018) states that after the development of expert systems comes a period of machine learning development, which is considered one of the primary approaches to artificial intelligence. Machine learning is an approach that seeks to get a response from a computer without programming. At the same time, the 1980s saw the beginning of the digital revolution, the emergence of the internet, and the development of the first personal computers. In the further development of artificial intelligence, it is also worth mentioning IBM's Deep Blue system, which in 1996 beats Chess World Champion Garry Kasparov, and IBM's digital assistant Watson, which beats Jeopardy! player in 2011 (<https://www.ibm.com/blogs/think/2017/05/deep-blue/>). The fascinating development of artificial intelligence is also demonstrated by the Deep Mind's AlphaGo Zero computer game, which, in 2017, after just 40 days of learning, defeats the Go world champion, “surpassing the game on a human level.” (<https://www.bug.hr/umjetna-inteligencija/umjetna-inteligencija-alphago-zero-nepobjediva-je-u-gou-1004>). When talking about the concept of artificial intelligence, it is necessary to distinguish between the terms of machine learning and deep learning, which are often identified with the term artificial intelligence. One can generally conclude that artificial intelligence seeks to mimic human intelligence while machine learning is a subsystem of artificial intelligence where, through algorithms, machines are trained to make assumptions, that is, to learn. (Sebastiani, 2002). So-called deep learning is a branch of machine learning where the machine trains and learns itself. (Pcchip.hr) According to Sterne, artificial intelligence tends to make computers behave like humans, and in this context can be seen as the so-called “Weak AI” that can do something very specific very well, and “Strong AI” that ranks alongside human intelligence. (Stern, 2017) Examples of voice assistants (Amazon's Alexa, Microsoft's Cortana, and Apple's Siri show that we are currently living in an age of weak artificial intelligence. (Digital Personal Assistants accuracy study, 2018.) Ray Kurzweil, a well-known futurist, predicts that by 2045 we will achieve a singularity, i.e. a stage in the development when machines are smarter than humans (<https://futurism.com/kurzweil-claims-that-the-singularity-will-happen-by-2045>). New technologies bring changes to all spheres of social life so that marketing is not exempted from this influence. The recent concept of marketing (paradigm), which Roman (2011) called “spray and pray marketing”, is changing under the influence of new technologies. A characteristic of today's era is the omnipresence of large amounts of data; various data that needs to be analyzed are at the disposal of marketing, through the use of Big Data. Marketing is no longer based on the intuitions and feelings of marketing experts but fact-based prediction models. (Unemyr, 2018.) Marketing becomes data-driven marketing that bases its success on the ability to deliver a specific message to a specific recipient at a specific time (Bryan, 2017). Artificial intelligence assists in data processing in marketing. When it comes to artificial intelligence, we mean machine learning and predictive analytics. (Unemyr, 2018.) Katsov (2018) also uses the term “algorithmic marketing” to define a marketing process that is automated to the extent that it understands higher-level goals and aligns and optimizes current actions with those goals. Marketing becomes autonomous. Stern (2017) talks about “autonomous marketing,” where more and more consumer interactions take place without direct human intervention. In practice, the more commonly known term “Marketing AI” is defined by Russell and Norvig as artificial agents who, based on information obtained about customers,

competitors, companies ... suggest or undertake marketing activities that will achieve the best marketing (sales) goal (Russell, Norvig, 2018). The basic marketing concept devised by McCarthy in 1960, known as 4P, is still present but adapted to the new age. The boundaries within which computers and new technologies operate are expanding, allowing it to be fully adapted, not longer to any particular segment, but each individual. Based on the information previously collected, the company decides on the suitability of the marketing mix for a specific customer. In other words, it is about personalization and customization of the offering. (Kumar et al., 2019.) Adding to this the use of artificial intelligence, the possibilities of marketing are virtually limitless. Changes to the 4P concept are shown in Table 1.

	<b>Product</b>	<b>Place</b>	<b>Price</b>	<b>Promotion</b>
<b>Traditional marketing</b>	Limited, static customization	Stores (physical, online, mobile)	Relatively static pricing, discrimination for special buyer groups	Promotion by segment, optimized for each individual segment using human-generated content
<b>Marketing with Smart Machines</b>	Machine-driven custom design of positive customer experiences around products and services	Anywhere the customer is	Can be dynamically adjusted to each customer in real-time and dependent on context	Fully automated one-to-one marketing campaign, optimized in real-time using machine-generated content

*Table 1: Smart Machines and the Four Ps (Borek, Reinold, 2016.)*

## 2. OVERVIEW OF TODAY'S RESEARCH

The interaction of people with devices controlled by smart algorithms is becoming increasingly widespread. The emergence of artificial intelligence, which slowly enters into all parts of human life, inevitably raises the question of the cognitive and philosophical content of its acceptance and use. (Epstein et al., 2008) In this vein, Shank, et al., (2019) explore the emotions that occur in humans when interacting with artificial intelligence (automated customer service system, interactive Bo tor Chatbot, Game Bo tor AI, robot or machine, smart personal or home assisted and other AI type). Primary emotions are distinguished: surprise, amazement, amusement, unease, happiness, disappointment, confusion, and any emotion. The majority of respondents stated that they have no emotions while interacting with artificial intelligence (of all kinds), while the most present emotions are surprise and amazement. (Shank, et al., 2019) According to the Edelman AI Survey (2019) conducted in the US, the emotions evoked by AI in respondents are: excited (54%), curious (50%), optimistic (49%), inspired (39%), concerned (28%), apprehensive (23%), uneasy (15%), impatient (7%) and none of these (1%). Pegasystems in its global survey "What Consumers Really Think About AI" conducted in North America and the EMEA (the Middle East and Africa) and APAC (Asia Pacific) regions, found that 72% of respondents know what artificial intelligence is, 17% do not know, and 11% are uncertain. Furthermore, 34% of the respondents interacted with artificial intelligence, 34% did not, and 32% were uncertain. In the survey, respondents were asked if they agreed with the statement that artificial intelligence provides the same or better service than humans, 38% disagree, 27% agree, and 35% are neutral about it. With the statement that artificial intelligence will significantly improve customer service in the future, 38% agree 26% disagree, and 36% neither agree nor disagree. When using online services, 80% prefer to talk to people, 7% with an intelligent robot/virtual assistant/ chatbot while 13% are neutral. (Pegasystems, 2017). The fact that artificial technology already profoundly infiltrated into people's lives without them being aware of it is also shown by the Hubspot survey, which found that in a sample of 1426 respondents from Ireland, Germany, Mexico, Colombia, UK, and USA 63% use artificial intelligence without knowing about it.

Furthermore, according to the survey, 74% have used voice search in the past month, while 47% do not mind using a chatbot. In seeking information and contacting the company, preferred is a telephone contact with a live person (58%), e-mail (54%), live chat (48%), text message (17%), and a telephone call with an interactive voice recognition system (17%). (Hubspot, 2016.)

### 3. EMPIRICAL RESEARCH

The rest of the paper presents the results and conclusions of the research on the understanding of the concept and content of artificial intelligence.

#### 3.1. Objectives of the research

The research aims to find out people's perceptions of artificial intelligence and its impact on purchasing decisions. The conceptual framework of the research was defined starting from the research problem and goals,

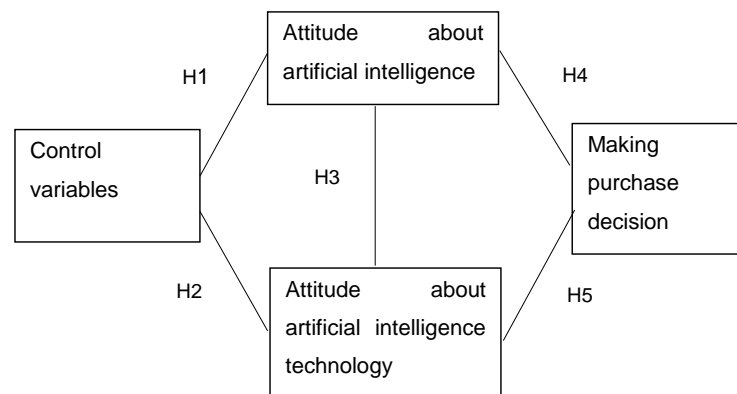


Figure 1: Conceptual Framework of Research

Based on the conceptual framework, the following hypotheses were defined:

- H1: Control variables (gender, age, education level, and work status) influence respondents' attitudes about artificial intelligence. To be able to look at the impact of each of the control variables, auxiliary hypotheses were formed:
  - H1.1 Respondents' gender influences attitudes about artificial intelligence
  - H1.2 Respondents' age influences the attitude about artificial intelligence
  - H1.3 Education level influences the attitude about artificial intelligence
  - H1.4 Work status influences respondents' attitudes about artificial intelligence
- H2: Control variables (gender, age, education level, and work status) influence respondents' attitudes about artificial intelligence. To be able to look at the impact of each of the control variables, auxiliary hypotheses were formed.
  - H2.1 Gender influences respondents' attitudes about artificial intelligence.
  - H2.2 Age influences respondents' attitudes about artificial intelligence.
  - H2.3 Education level influences respondents' attitude on artificial intelligence.
  - H2.4 Work status influences respondents' attitudes about artificial intelligence
- H3: The attitude about artificial intelligence influences the attitude about artificial intelligence technology.
- H4: Respondents' attitude about artificial intelligence influences the purchase decision.
- H5: Respondents' attitude about artificial intelligence technology influences the purchase decision.

### 3.2. Methodology used

A survey questionnaire created using the LimeSurvey tool was used as a survey instrument, where access to the questionnaire was given via electronic identity on the University Computing Center page. The link to the questionnaire was distributed through the social network Facebook. The first six questions related to the sociodemographic characteristics of the respondents, while the other 30 questions related to the examination of attitudes about artificial intelligence, artificial intelligence technology, and purchasing decisions. The questions consisted of to which the respondents had to express their level of agreement on a 5-point Likert scale (1 - fully disagree, 5 - strongly agree). The questionnaire was open from May 10 to June 11, 2019. 211 respondents completed the questionnaire and 147 responses were valid. The statements used in the questionnaire are presented in the appendix.

### 3.3. Research findings

Of the 147 respondents, 42 (28.57%) were male, and 105 (71.43%) were female. The majority of respondents, 53 (36.05%) were between 18 and 23 years of age, 33 (22.45%) between 30 and 35 years of age, 30 (20.41%) between 24 and 29 years of age, 11 (7.48%) between 36 and 41 years of age, 8 (5.44%) between 42 and 47 years of age, 6 (4.08%) between 48 and 53 years of age, and 6 (4.08%) over the age of 53. According to the education level, 75 respondents (51.02%) have a high school degree, 49 respondents (33.33%) college or university, 18 (12.24%) master's or doctorate, and 1 (0.68%) elementary school. According to the place of residence, 111 (75.51%) respondents are from Northern Croatia and 25 (17.01%) from the City of Zagreb. According to work status, 71 respondents (48.30%) are employed, and 54 (36.73%) respondents are students. Before testing the hypotheses, an internal consistency check of the measurement scales (assertions) was performed. (Figure 2)

Figure 2: Confidence of the scale

Scale - attitudes	Cronbach's Alpha
Respondents' attitude about artificial intelligence	0.731
Respondents' attitude about artificial intelligence technology	0.648*
Impact on purchase decision	0.731

\*Keith S. Taber (2016) states that Cronbach's Alpha in the range 0,64 – 0,85 is adequate.

The findings of the research of the influence of control variables (gender, age, education level, and work status) on the attitude about artificial intelligence are presented in Figure 3. The analysis was performed using the t-test for independent samples (gender) and analysis of variance - ANOVA. The confidence interval is 95%, while the p-value indicates significance at the 0.05 level. The conducted independent t-test shows that there is no statistically significant difference in the attitude of the respondents about artificial intelligence concerning gender ( $p = 0.785 > 0.05$ ). Analysis of variance indicates a statistically significant difference with respect to respondents' age ( $p = 0.036 < 0.05$ ), level of education ( $p = 0.000 < 0.05$ ) and work status ( $p = 0.000 < 0.05$ ).

Table following on the next page

*Figure 3: The influence of gender, age, and education on the attitude about artificial intelligence*

Variable	Gender	N	A.S.	S.D.	T	Sig
Attitude of respondent about artificial intelligence	M	42	3.44	0.70	0.27	<b>0.785</b>
	F	105	3.41	0.49		
	<b>Age</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>	<b>F</b>	<b>Sig</b>
	18-23	53	3.42		2.327	<b>0.036</b>
	24-29	30	3.67	0.149		
	30-35	33	3.31	0.49		
	36-41	11	3.39	0.44		
	42-47	8	3.03	0.81		
	48-53	6	3.10	1.07		
	>53	6	3.47	0.63		
	<b>Education level</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>	<b>F</b>	<b>Sig.</b>
	No education	1	1.5	-	7.151	<b>0.000</b>
	Elementary school	4	2.81	0.75		
	High school	75	3.33	0.57		
	College, University	49	3.56	0.45		
	Master's, Doctorate	18	3.64	0.41		
	<b>Employment status</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>		
	Student	54	3.49	0.46	7.260	<b>0.000</b>
	Unemployed	12	2.68	0.74		
	Self-employed	8	3.45	0.50		
	Employed	71	3.50	0.52		
	Retired	2	2.87	0.00		

The findings of the analysis of the influence of control variables (gender, age, education level, and work status) on the attitude about artificial intelligence technology are presented in Figure 4. The analysis was performed using the t-test for independent samples (gender) and analysis of variance - ANOVA. The confidence interval is 95%, while the p-value indicates significance at the 0.05 level. The t-test for independent samples shows that there is no statistically significant difference in the attitude of the respondents about artificial intelligence technology concerning gender ( $p = 0.658 > 0.05$ ). Analysis of variance shows that there is no statistically significant difference concerning age ( $p = 0.241 > 0.05$ ) and education level ( $p = 0.081 > 0.05$ ), while there is a statistically significant difference concerning the working status of the respondents ( $p = 0.023 < 0.05$ ).

*Table following on the next page*

Figure 4: The influence of gender, age, and education on the attitude about artificial intelligence technology

Variable	Gender	N	A.S.	S.D.	T	Sig
Attitude of respondent about artificial intelligence technology	M	42	3.40	0.54	0.443	0.658
	F	105	3.36	0.44		
	<b>Age</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>	<b>F</b>	<b>Sig</b>
	18-23	53	3.38	0.47	1.347	<b>0.241</b>
	24-29	30	3.52	0.51		
	30-35	33	3.35	0.39		
	36-41	11	3.39	0.42		
	42-47	8	3.08	0.54		
	48-53	6	3.12	0.67		
	>53	6	3.35	0.33		
	<b>Education level</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>	<b>F</b>	<b>Sig.</b>
	No education	1	3.00	-	2.123	<b>0.081</b>
	Elementary school	4	2.88	68		
	High school	75	3.33	0.41		
	College, University	49	3.44	0.50		
	Master's, Doctorate	18	3.51	0.51		
	<b>Employment status</b>	<b>N</b>	<b>A.S.</b>	<b>S.D.</b>		
	Student	54	3.41	0.47	2.930	<b>0.023</b>
	Unemployed	12	2.97	0.55		
	Self-employed	8	3.53	0.47		
	Employed	71	3.40	0.43		
	Retired	2	3.1	0.00		

Hereafter, the relationship is examined between individual independent variables, the degree of association is expressed by Pearson's correlation coefficient (r). (Figure 5) The result shows that there is no unacceptable degree of correlation; the connections are considered functional. Significance is at the 0.01 level.

Figure 5: Pearson's correlation coefficients among independent variables

	Respondents' attitude about artificial intelligence	Respondents' attitude about artificial intelligence technology	Purchase decision
Respondents' attitude about artificial intelligence	1.000	0.634**	0.504**
Respondents' attitude about artificial intelligence technology		1.000	0.587**
Purchase decision			1.000

\*\* significance at the 0.01 level

Regression analysis was used to examine the correlation between individual variables (Figure 6).

*Figure 6: Regression analysis*

<b>Control variables</b>			
	beta( $\beta$ )	t-value	Sig.
Respondents' attitude about artificial intelligence	0.074	0.896	0.372
Respondents' attitude about artificial intelligence technology	0.031	0.369	0.713
<b>Respondents' attitude about artificial intelligence</b>			
Respondents' decision at purchase	0.504	7.029	0.000
Respondents' attitude about artificial intelligence technology	0.634	9.865	0.000
<b>Respondents' attitude about artificial intelligence technology</b>			
Respondents' decision at purchase	0.587	8.722	0.000

Note: beta( $\beta$ ) – standardized regression coefficient beta;  $N=147$ ;  $p<0,05$

Based on the findings, Figure 7 shows the accepted and rejected hypotheses.

*Figure 7: Illustration of hypotheses*

<b>Hypothesis</b>	<b>Accepted</b>	<b>Rejected</b>
<b>H1: Control variables influence respondents' attitudes about artificial intelligence</b>		+
H1.1 Respondents' gender influences attitudes about artificial intelligence		+
H1.2 Respondents' age influences the attitude on artificial intelligence	+	
H1.3 Education level influences the attitude on artificial intelligence	+	
H1.4 Work status influences respondents' attitudes about artificial intelligence	+	
<b>H2: Control variables influence respondents' perception of artificial intelligence technology.</b>		+
H2.1 Gender influences respondents' attitudes about artificial intelligence.		+
H2.2 Age influences respondents' attitudes about artificial intelligence.		+
H2.3 Education level influences respondents' attitude on artificial intelligence.		+
H2.4 Work status influences respondents' attitudes about artificial intelligence	+	
<b>H3: The attitude about artificial intelligence influences the attitude about artificial intelligence technology.</b>	+	
<b>H4: Respondents' attitude about artificial intelligence influences the purchase decision.</b>	+	
H5: Respondents' attitude about artificial intelligence technology influences the purchase decision.	+	

Based on the obtained results, hypotheses H1 and H2 are rejected, while hypotheses H3, H4, and H5 are accepted. There is a positive correlation between the individual variables related to these hypotheses. If auxiliary hypotheses are observed, the acceptance of hypotheses H1.2, H1.3, H1.4, and H2.4 is determined while the other auxiliary hypotheses are rejected.

### 3.4. Limitations and recommendations for future research

The main limitations of this study are the relatively small sample size, distribution of the questionnaire through one social network only, and weak age and regional representation. Expansion to other platforms and the inclusion of field research will ensure better proportionality of gender and age of respondents and better regional representation of respondents. Furthermore, the measuring instrument used to measure respondents' attitudes about artificial intelligence technology is within the limits of consistency (Cronbach's alpha - 0.688), and further research on this topic also seeks to achieve greater consistency of statements ( $> 0.7$ ).

### 4. CONCLUSION

The concept of artificial intelligence is not a novelty of today's digital age, the possibility of machines acquiring certain intelligence similar or identical to that in humans has been considered since the advent of the first computing device (computers). Today's technological development is beginning to realize former futuristic discussions and predictions and apply them in everyday life. The rapid development of artificial intelligence inevitably also causes some insecurity (fears) in people, in large part because of the influence of Hollywood movies, about their jobs and their future existence. This paper sought to explore how familiar people are with the concept and technology of artificial intelligence and what it brings and whether that knowledge influences their purchasing decisions. The results show that people mostly know what artificial intelligence is; however, it is interesting that (just) over 42% of respondents think that artificial intelligence will make the world a better place. Reasons for such skepticism may be in the still insufficient knowledge of the advantages over threats posed by artificial intelligence. Based on the defined goal of the research, formed hypotheses were tested by inferential statistics. It was determined that age, education level, and work status affect the attitude of respondents about artificial intelligence and the work status on the attitude about artificial intelligence technology. The relation between the attitude about artificial intelligence and the attitude about artificial intelligence technology and the purchase decision was determined, as well as the relation between the attitude about artificial intelligence and the purchase decision.

### LITERATURE:

1. Borek, A., Reinold, J. (2016): *Marketing with Smart Machines*, Aleksander Borek and Joerg Reinold, 2016.
2. Bryan, R. (2017): *Data Driven Marketing*, Ainsley Allen,
3. Vannevar Bush, *AS WE MAY THINK*, <http://web.mit.edu/STS.035/www/PDFs/think.pdf> - October, 2019.
4. Digital Personal Assistants accuracy study 2018, [https://www.perficientdigital.com/insights/our-research/digital-personal-assistants-study#which\\_smartest](https://www.perficientdigital.com/insights/our-research/digital-personal-assistants-study#which_smartest) – October 2019.
5. Edelman AI Survey (2019), Survey of technology executives and the general population shows excitement and curiosity yet uncertainty and worries that artificial intelligence could be a tool of division [https://www.edelman.com/sites/g/files/aatuss191/files/2019-03/2019\\_Edelman\\_AI\\_Survey\\_Whitepaper.pdf](https://www.edelman.com/sites/g/files/aatuss191/files/2019-03/2019_Edelman_AI_Survey_Whitepaper.pdf)
6. Epstein, R., Roberts, G., & Beber, G. (2008). *Parsing the Turing Test: Philosophical and Methodological Issues in the Quest for the Thinking Computer*. In: Springer.
7. Gentsch, P. (2018). *AI in Marketing, Sales and Service*. Springer International Publishing.
8. Grdodjan, G., Roberts, S. (2016): *Marketing AI, From automation to revenue performance marketing*, Reach Marketing, 2016



9. Grundler, D. (2001). *Evolucijski algoritmi (I) Pobude i načela. Automatika: časopis za automatiku, mjerenje, elektroniku, računarstvo i komunikacije*, 42(1-2), 13-22. preuzeto 23.05.2019 s <https://hrcak.srce.hr/5597>
10. Grundler, D. (2001). *Evolucijski algoritmi (I) Pobude i načela. Automatika: časopis za automatiku, mjerenje, elektroniku, računarstvo i komunikacije*, 42(1-2), 13-22. preuzeto 23.05.2019 s <https://hrcak.srce.hr/5597>
11. Hubspot (2016), Global AI survey, <https://blog.hubspot.com/news-trends/artificial-intelligence-is-here#LINK6>
12. Katsov, I. (2018): Introduction to Algorithmic Marketing, Grid Dynamics,
13. \*Keith S. Taber (2016): The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education, file:///C:/Users/Crodma/Downloads/UseofCronbachsAlphaWhenDeveloping.pdf - October 2019.
14. Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019); Understanding the Role of Artificial Intelligence in Personalized Engagement Marketing, California Management Review.
15. Kurzweil Claims That the Singularity Will Happen by 2045, Get ready for humanity 2.0., (<https://futurism.com/kurzweil-claims-that-the-singularity-will-happen-by-2045>), September, 2019
16. Mueller, J. P., Massaron L. (2018). *Artificial Intelligence for dummies*. John Wiley & Sons, Inc., Hoboken, New Jersey
17. Murray Campbell , *20 years After Deep Blue a New Era in Human-Machine Collaboration*, ( <https://www.ibm.com/blogs/think/2017/05/deep-blue/>), October 2019
18. Pccip.hr, Razlika između strojnog učenja, AI i (dubokog) učenja <https://pcchip.hr/ostalo/tech/razlike-između-strojnog-ucenja-ai-i-dubokog-ucenja/>
19. Pegasystems, What Consumers Really Think About AI: A Global Study, 2017 <https://www.ciosummits.com/what-consumers-really-think-about-ai.pdf> October 2017
20. Roman, E. (2016): Voice of the customer marketing, McGraw Hill,
21. Rouhiainen, L. (2018). *Artificial intelligence 101 things you must know today about our future*, Lasse Rouhiainen 2018.
22. Sandro Vrbanus, *Umjetna inteligencija AlphaGo Zero nepobjediva je u Gou*, <https://www.bug.hr/umjetna-inteligencija/umjetna-inteligencija-alphago-zero-nepobjediva-je-u-gou-1004>
23. Sebastiani, F. (2002). *Machine learning in automated text categorization. ACM Computing Surveys*, <https://dl.acm.org/citation.cfm?id=505283>
24. Shank, B Daniel, Graves, C., Gott, A., Gamez, P., Rodriguez, *Feeling our Way to Machine Minds: People's Emotions when Perceiving Mind in Artificial Intelligence*, <https://www.sciencedirect.com/science/article/pii/S0747563219301396>
25. Sterne, J. (2017). *Artificial Intelligence for Marketing*. Rixing Media.
26. Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, Boston, MA: Pearson, 2018.
27. Tutor Hunt (undated). *Expert System And The First Expert Systems*. Downloaded on April 12, 2019, from <https://www.tutorhunt.com/resource/8724/>
28. Unemyr, M. (2018): *Data Driven Marketing with Artificial Intelligence*, Magnus Unemyr, US
29. Vannevar Bush (1945). „As we may think (<http://web.mit.edu/STS.035/www/PDFs/think.pdf>), (October, 2019.)
30. Warren McCulloch, Walter Pitts (1943) „A logical calculus of the ideas immanent in nervous activity“ (<http://www.cse.chalmers.se/~coquand/AUTOMATA/mcp.pdf> - (October 2019)

## APPENDIX

### *Statements from the questionnaire*

Respondents' attitude about artificial intelligence	<p>Artificial intelligence changes people's lives and ways of functioning</p> <p>Artificial intelligence can be applied to many areas of life.</p> <p>Artificial intelligence will outperform man in the future</p> <p>Artificial intelligence needs to be constantly developed and improved.</p> <p>Artificial intelligence can make the world a better place.</p> <p>Artificial intelligence poses a threat to humans because machines will replace jobs.</p> <p>Artificial intelligence brings more surveillance and control in the workplace.</p> <p>I am ready to share my job with robots.</p> <p>I am ready to connect with machines that have human emotions and human intelligence</p> <p>The Republic of Croatia does not lag in the development of artificial intelligence compared to other European Union countries</p>
Respondents' attitude about artificial intelligence technology	<p>Artificial intelligence technology can help improve production.</p> <p>Artificial intelligence technology makes it difficult to maintain the privacy of own information</p> <p>Artificial intelligence technology will surpass the human mind in a few years.</p> <p>Smartphones and computers are the primary devices and the first contact with artificial intelligence.</p> <p>Chatbots are digital assistants that are important in artificial intelligence technology.</p> <p>Website search through Google is artificial intelligence technology.</p> <p>The development of 5G digital technology is of great importance in the Republic of Croatia.</p> <p>I am ready for a machine to replace me in driving cars (using so-called autonomous cars).</p> <p>I am ready for a machine to treat me and diagnose me with a disease.</p> <p>I am ready for a robot to replace me in household chores</p>
The impact of artificial intelligence on purchasing decisions	<p>Artificial intelligence affects my purchase decision.</p> <p>Improved and innovative product design can affect my purchase</p> <p>Chatbots (digital assistants) help improve purchase.</p> <p>New marketing trends seek to encourage customers to buy.</p> <p>Marketing campaigns do not affect my purchase decision.</p> <p>Social networks and website advertising affect my purchase decision.</p> <p>It is useful to provide personal information and receive marketing notifications by mail (e.g., discounts, catalogs).</p> <p>It is possible to retain a buyer if the company knows their buying habits and preferences.</p> <p>I am ready to use the application which allows me to take photos of clothes and gives me suggestions for similar products</p> <p>The traditional form of shopping in stores has been neglected since the occurrence of webshops offering personalized products</p>

## DOES DIGITAL OPPORTUNITY AFFECT FINANCIAL INCLUSION?

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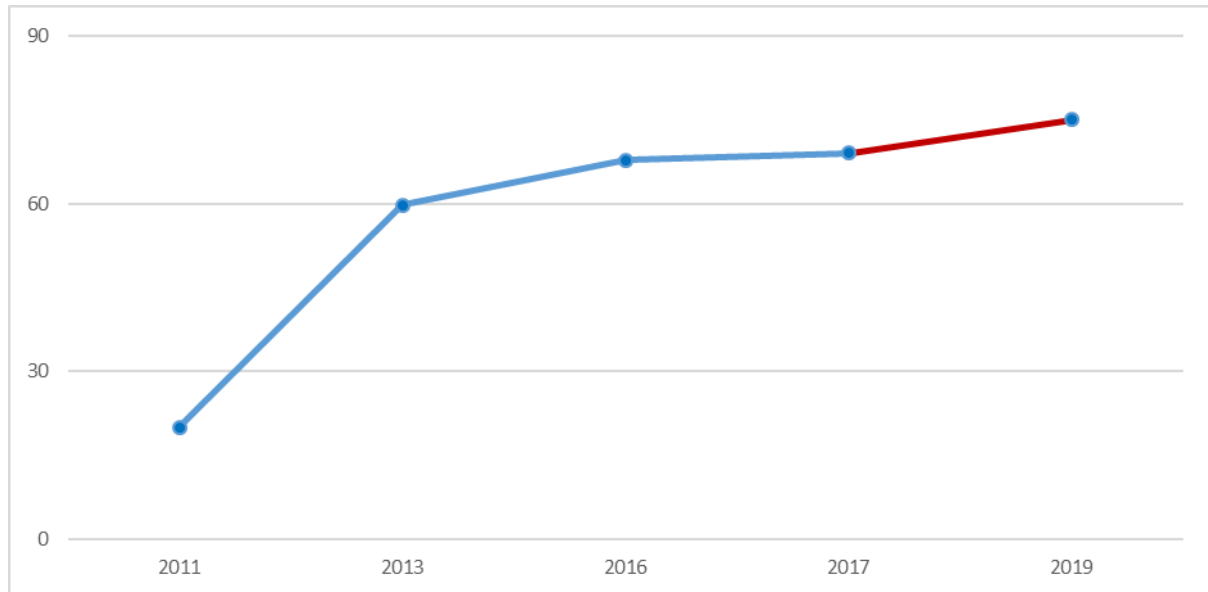
### ABSTRACT

*Indonesian government has targeted the financial inclusion index in 2019 reaching 75 percent. Meanwhile, in 2017, according to Indonesia Financial Services Authority (OJK), the index is at 69 percent. There is quite wide gap to fulfil 2019 target with current limited time left. On the other side, the adoption of technology in Indonesia is growing rapidly. Based on data released by Statistics Indonesia, the percentage of people having mobile phone is 58.3 percent. Therefore, this research aims to measure the effect of digital opportunity to financial inclusion. This research analyses data from two different sources which are 2017 National Socio-Economic Survey (SUSENAS) and 2014 Twitter data. The main methodology used in the research is logistics regression. In addition, descriptive statistics with visualization is utilized to provide further analysis. This study found that digital opportunity has positive impact to financial inclusion. The ownership of computer and phone is expected to improve financial inclusion. Moreover, high intensity of social media activity does not correlate directly with financial inclusion.*

**Keywords:** *Financial Inclusion, Digital Opportunity, Information Technology (IT) adoption, Twitter*

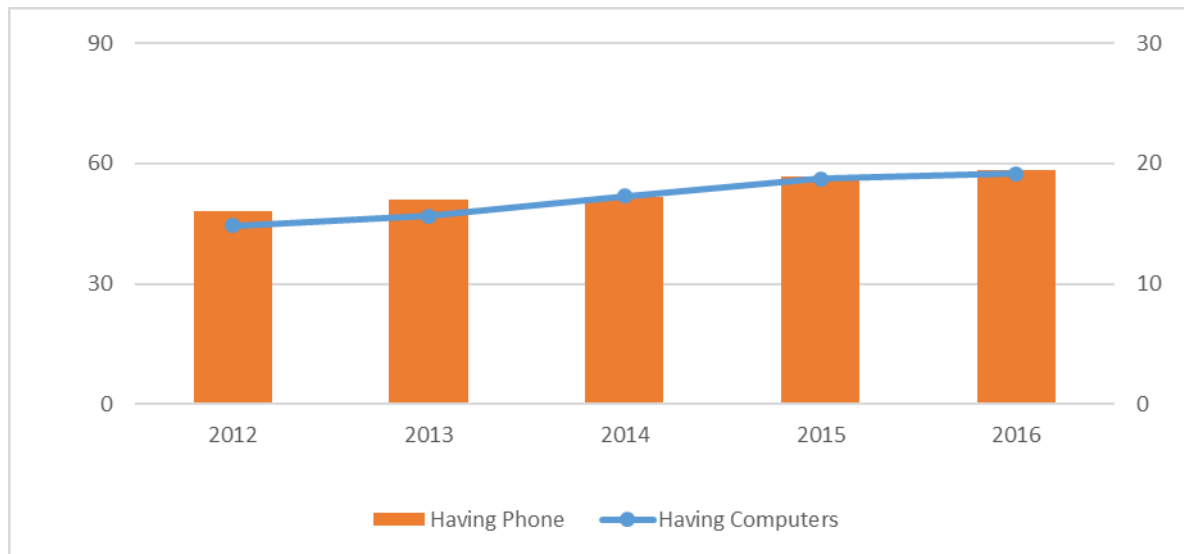
### 1. INTRODUCTION

Financial inclusion has become a major policy concern after the 2008 financial crisis which mainly impacted the bottom of the pyramid (those with low and irregular income, living in remote areas, disabled people, those who do not have legal documents, and other marginalized groups) who are generally unbanked and majority of them are from developing countries. Since then, many international organizations have focused their activities on financial inclusion such as World Bank, Asian Development Bank, and others, including developing countries such as Indonesia (Bank Indonesia, 2013). According to the World Bank, the Indonesia Financial Inclusion Index in 2017 is 48.9 percent. This shows that the number of population aged more than 15 years old that have formal saving account is 48.9 percent of such population category. In addition, based on financial literacy and inclusion survey conducted by Financial Services Authority of Indonesia (OJK), the index in 2017 is recorded at 69 percent. Meanwhile, the government has targeted the financial inclusion index in 2019 is 75 percent (OJK, 2018b). There is quite wide gap to fulfil 2019 target with only about 1 year left. Therefore, in order to achieve the target government should not take "business as usual" approach. One way to accelerate the financial inclusion index is by adopting the use of technology.

*Figure 1: Indonesia Financial Inclusion Index 2011 – 2019 (Target)**Source: OJK*

The adoption of technology in Indonesia is growing rapidly. Based on the data released by Statistics Indonesia, the percentage of people having computers in 2016 reaches 19,14 percent, while the percentage of people having mobile phone is 58.3 percent. More than half of Indonesia population have mobile phones. This is a good achievement even though the ownership it is still dominated by resident in urban areas. Still, the figure shows Indonesian people are familiar with the use of technology (APJII, 2017). Furthermore, this number shows vast potential of financial service delivery through the adoption of technology. Moreover, financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs such as transactions, payments, saving, credit and insurance delivered in a responsible and sustainable way (World Bank, 2017). There are three dimensions of financial inclusion: access, availability, usage, and quality. One of the financial dimensions to support spread of financial inclusion, access, has become important component. In this Industrial Revolution 4.0 era, the financial access delivery should be compatible with user behaviour. Several digital-based Financial Technology (FinTech) have begun to be developed. Majority of their services is accessed through computer and mobile phone. Based on data released by OJK, there are 64 Financial Technology Companies licensed by OJK (OJK, 2018a). With such high target of financial inclusion level set by the government and the vast potential of Indonesian adoption of technology, therefore, this research aims to measure the effect of digital opportunity to financial inclusion.

*Figure following on the next page*

*Figure 2: Percentage of Population having phone and computer*

Source: SUSENAS 2017

## 2. LITERATURE REVIEW

There are several previous studies investigating the impact of digital opportunity on financial inclusion. In South Asia Region, by utilizing principal component analysis, fixed effect, random effect, and panel correction standard errors, Lenka and Barik (2018) concluded that the expansion of mobile phone and internet services has positive impact on the growth of financial inclusion in the South Asian Association for Regional Cooperation (SAARC) countries. Furthermore, by using secondary data from The Group Speciale Mobile Association (GSMA), which is association of worldwide mobile operators, Mas (2017) hypothesised that penetration of broadband or internet connection is potentially improve financial inclusion in Latin America region as it makes banking services is more flexible, faster, customized, and has a better outreach. In addition, in case of Indonesia, by surveying 46 respondents in Nusa Tenggara Barat and utilizing qualitative approach, Pranata (2019) found that even feature phone that does not have ability to connect to internet is able to accelerate financial inclusion. By collaborating with local cooperatives, Mandiri e-cash (a digital payment fintech) provides digital payment services for members of the cooperatives whom mostly are farmers and small retailers which lack of internet connection, relatively low educated, and technologically illiterate. The introduction and adoption of digital payment benefited them as the payment becomes more efficient, flexible, safer, traceable, and has multifunction such as to pay electricity bills, buying cellular credit, money transfer, and other payments. In fact, they get share of profit from accumulated digital payment transaction made by cooperative members. It proves that even low level of internet and communication technology has positive impact for marginalized group located in rural areas with limited technological capability.

## 3. METHODS

This research analyses data from two different sources which are 2017 National Socio-Economic Survey (SUSENAS) and 2014 Twitter data. SUSENAS is a survey conducted by Statistics Indonesia having aims to describe social and economy conditions of Indonesia citizens whereas anonymized Twitter's data consists of the tweet itself, location, and date.

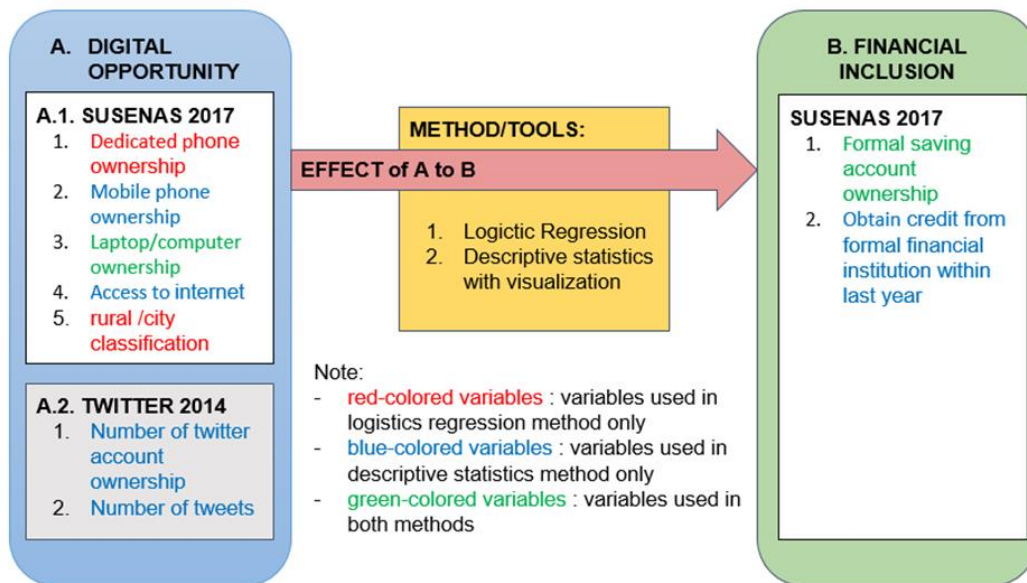
### 3.1. Pre-Processing

SUSENAS data is obtained through survey of individual at household level. It is one of the largest survey in Indonesia and has a broad coverage representing almost all of cities in

Indonesia. It covers 30 provinces, 465 cities, 297,276 households, and 1,132,749 individuals. SUSENAS data generally can be analysed as deep as individual level or at minimum at household level depends on the variable. Meanwhile, the tweeter data cannot be analysed to household level, the feasible analysis can be done is at the city level. In addition, only covers 16 cities in Indonesia which are Medan, Kepulauan Seribu, South Jakarta, East Jakarta, Central Jakarta, West Jakarta, Bogor Regency, Bandung Regency, Bekasi City, Yogyakarta City, Surabaya, Tangerang City, Tangerang Regency, West Tangerang City, and Makassar City. Because of the data level differences, in the descriptive statistics analysis and visualization, we grouped by SUSENAS individual data into city level. In addition, we also make adjustment to the ratio of household saving account ownership considering that age group division in SUSENAS is available at number of household members aged more than 10 years old whereas both World Bank and OJK financial inclusion indexes measured people who are older than 15 years old. Therefore, for logistics regression analysis, we adjust saving account ownership ratio from age group of more than 10 years old to age group of more than 15 years old based on Indonesia Statistics population pyramid. To measure the effect of digital opportunity to financial inclusion, the framework used in this research is shown on figure 3. There are 2 (two) methods implemented in this study. The first model utilizes only SUSENAS data by implementing logistics regression, whereas the second method utilizes both SUSENAS data and Twitter data by analysing through descriptive statistics with visualization. The dependent variable (response variable), also as a proxy for financial inclusion measurement, of the first method is similar to measurement used by World Bank and OJK which is ratio of adult population having formal saving account, whereas the independent variables (predictor variables) are computer/laptop ownership, phone ownership, and city/rural classification. Regarding the second method there are two independent variables at the city level i.e. ratio of adult population having formal saving account and ratio of adult population obtained loan within the last year from at least one of these formal institutions: people business credit program (Kredit Usaha Rakyat / KUR), banks other than KUR, rural banks (Bank Perkreditan Rakyat), cooperatives, pawn shops, leasing companies, joint business group (Kelompok Usaha Bersama), and village owned enterprise (BUMDes). In addition, the independent variables for the second method comprised from two data sources at city level which are mobile phone ownership and having access to internet from SUSENAS data and number of twitter accounts and number of tweets from Twitter data. Furthermore, all of the variables and the %ow of analysis is displayed in Figure 3.

*Figure following on the next page*

Figure 3: Research Framework



### 3.2. Methods of Analysis and Data Collection

This research utilizes two methods in order to measure effect which are logistics regression and descriptive statistics with visualization. Logistics regression is used to measure the impact of digital opportunity on probability of household to be financially included. A household is categorized as financially included household if its ratio of formal saving account ownership reaches the government financial inclusion index level, 75 %. Household with 75% level of financial inclusion index implies that 75% of household members aged more than 15 have formal saving account. Furthermore, logistics regression is a statistical method for analysing a dataset in which there are one or more independent variables that determine an outcome. The outcome is measured with a dichotomous variable (in which there are only two possible outcomes). Logistic regression generates the coefficients (and its standard errors and significance levels) of a formula to predict a logit transformation of the probability of presence of the characteristic of interest (Medcalc, 2018). Moreover, the logistics regression equation in this research is as follow:

$$Y_p = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots\dots (1)$$

where :

$Y_p$  : The probability of households to be financially included

(1 = Saving Account Ratio  $\geq 75\%$ , otherwise = 0);

$X_1$ : 1 = Household owns computer/laptop, otherwise = 0;

$X_2$ : 1 = Households owns dedicated phone, otherwise = 0;

$X_3$ : 1 = Household is located in rural area, otherwise = 0.

The logit transformation is defined as the logged odds:

$$Odds = \frac{p}{1-p} \dots\dots (2)$$

$$Odds = \frac{\text{probability of households is financially included}}{1-\text{probability of households is financially included}} \dots\dots (3)$$

and

$$\text{logit}_p = \ln \left( \frac{p}{1-p} \right) \dots\dots (4)$$

Moreover, descriptive statistics analysis is used to generally describe the aggregation results of SUSENAS and tweeter data at city level regarding depth of digital opportunity and level of financial inclusion as well as finding relationship between them. In addition, the analysis is equipped with visualization through maps and charts for better understanding and interpretation.

## 4. RESULTS AND DISCUSSIONS

### 4.1. Logistics Regression at Household Level

There are 297,276 households that is analysed using logistics regression with minimum value of saving account ratio for family members aged more than 15 years old is 0% and the maximum value is at 100%. Interestingly, the mean of the ratio is at 35.2%. By applying definition of World Bank and OJK financial inclusion index, that mean of the ratio can be classified as financial inclusion index implying that the index at household level is at 35.2%. This figure is far below OJK 2017 financial inclusion index which is at 69%. Although it is still lower, it is closer to World Bank estimation which recorded financial inclusion index at 48.9%.

*Table 1: Summary of Financial Inclusion at Household Level*

Number of Observation	297,276
Min. Value of Saving Account Ratio for family member aged > 15 years old	0 %
Max value saving account ratio for family member aged > 15 years old	100 %
Mean of saving account ratio for family member aged > 15 years old	35.2%

*Source: SUSENAS 2017, processed*

Furthermore, the logistics regression result and its odds ratio is presented in Table 2 as follow:

*Table 2: Summary of Financial Inclusion at Household Level*

Independent Variable	Logit Coefficient	Odds Ratio	P-Value
Own computer/laptop	1.37	3.93	0.000
Own dedicated phone	0.66	1.94	0.000
Located in rural area	-0.84	0.43	0.000
Prob > chi2	0.000		
LB chi2 (3)	21769.87		

As we can see from Table 2, all of the coefficient p-value are less than 0.01 meaning that all of independent variables have significant impact to 99% confidence level. Furthermore, in order to provide better understanding we can look at logit coefficients and odds ratio values. Regarding, phone ownership, the interpretation is if the status of a family change from does not have any phone to have a phone, then the probability to be financially included is increased by 66%. Moreover, in terms of computer/laptop ownership, the interpretation of odds ratio is the probability of a family that has at least a computer/laptop to be financially inclusive is 3.93 times higher than a family that does not own it. As for dedicated phone ownership, the probability of a family that has a dedicated phone to be financially included is 1.94 times higher than a family that does not own it. In addition, the probability of a family in urban area to be financially included is 2.32 (1/0.43) times higher than a family in rural area.



#### 4.2. Descriptive Statistics at City Level

Based on the results of data processing, the results show that ratio of people having mobile phone at city level in 2017 is 69.76 percent. In addition, the ratio of people connected to internet in 2017 is 26.82%. This ratio is quite far below the results of survey conducted by Association Indonesia Internet Service Provider (APJII). APJII released ratio of internet users in Indonesia is 54.68% (APJII, 2017). Two characteristics of data that describe financial inclusion in this study are the ratio of adult population having formal saving account and ratio of population received credit from formal financial services. Based on the result of data processing, ratio of population that received credit is 22.7% whereas the ratio of saving account ownership is 22.10% (Table 3).

*Table 3: Descriptive Statistics Result*

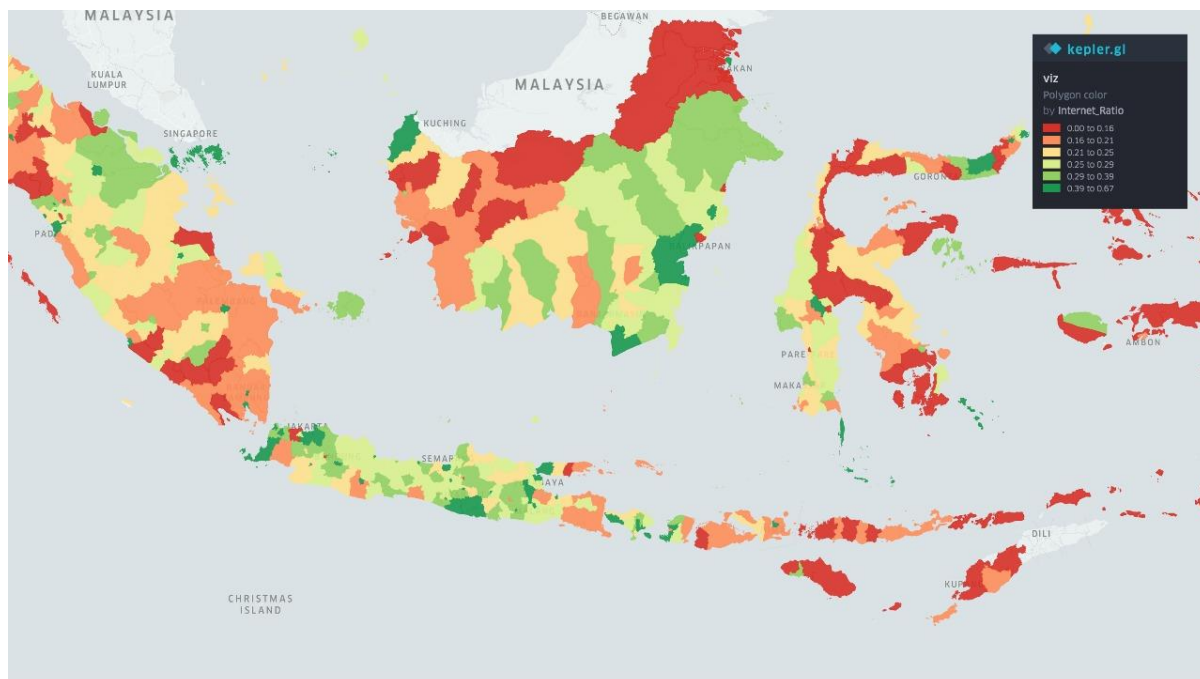
Variables	Mean
Mobile phone ownership ratio	0.697657
Internet access ratio	0.268283
Loan ratio	0.227628
Saving account ratio	0.220694

*Source: SUSENAS 2017, processed*

Furthermore, for better understanding, the result of each city in Indonesia is visualized in form of Indonesian map in Figure 4 - 6. From those figure, we can see that cities with high digital opportunity measurement (high mobile phone ownership ratio and internet access ratio) tend to have high financial inclusion level (loan ratio and saving account ratio). In addition, another finding to note is we can see that there are distinct differences between western part and eastern part of Indonesia both in terms of digital opportunity and financial inclusion level. It means that, digital divide, the gap between demographics and regions that have access to ICT and those that do not or have restricted access, happens in different parts of Indonesia. Similar gap also applies in terms of access to financial services. In detail, based on those figures, high level of mobile phone ownership and access to internet ratio are dominated by cities in Java, Bali, North Sumatra, West Kalimantan and South Sulawesi. In contrast, cities in eastern Indonesia such as Papua, NTT, Maluku the ratio of them are generally low. Similar to the digital opportunity measurement, the distribution of high level of financial inclusion ratio is dominated by cities in Java, Bali, South Kalimantan and South Sulawesi. This shows that there is a positive correlation between the ratio of internet users and phone users (digital services/opportunity) to the ratio of formal saving accounts and loan ratio of access to loan (financial inclusion). All of methods implemented by using SUSENAS data shows that digital opportunity has significant and positive impact to financial inclusion. However, regarding the use of twitter data as digital opportunity does not imply the same relationship. Based on twitter data of 16 cities, from Figure 7, we can see that the financial inclusion level does not move in the same direction with number of tweets. This is likely because SUSENAS data consist of far more comprehensive data representing almost all provinces and cities in Indonesia, whereas Twitter data only originated from 16 cities.

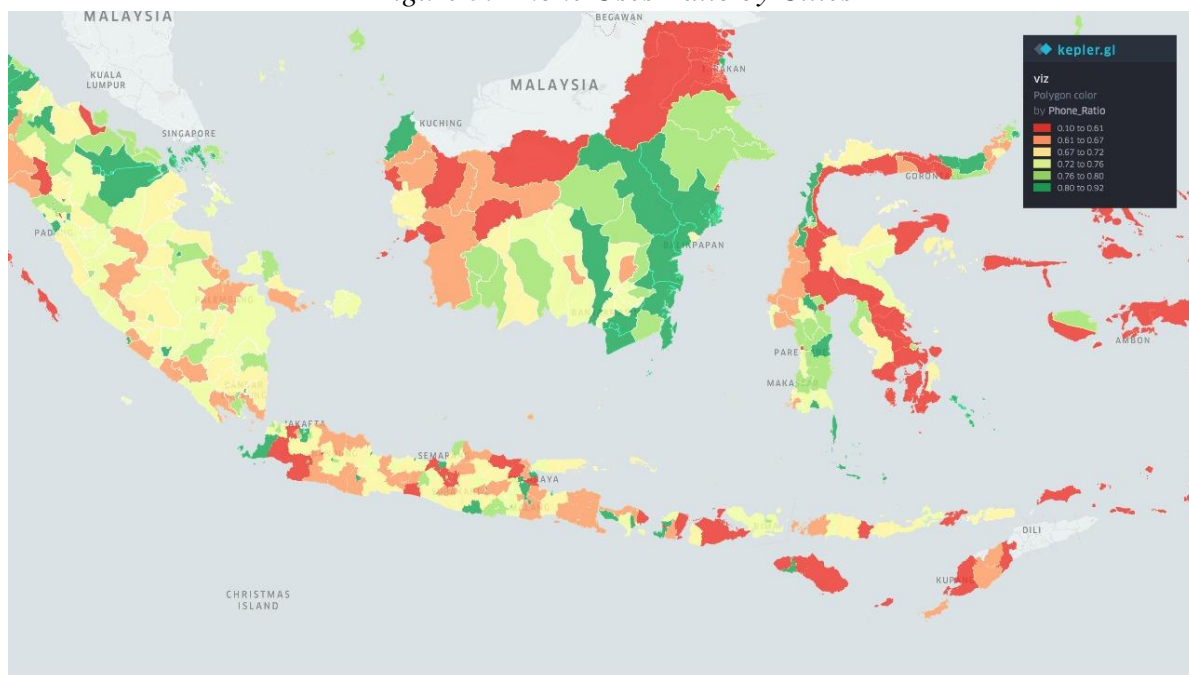
*Figure following on the next page*

*Figure 4: Internet Usage Ratio by Cities*



*Source: SUSENAS and Twitter Data, processed*

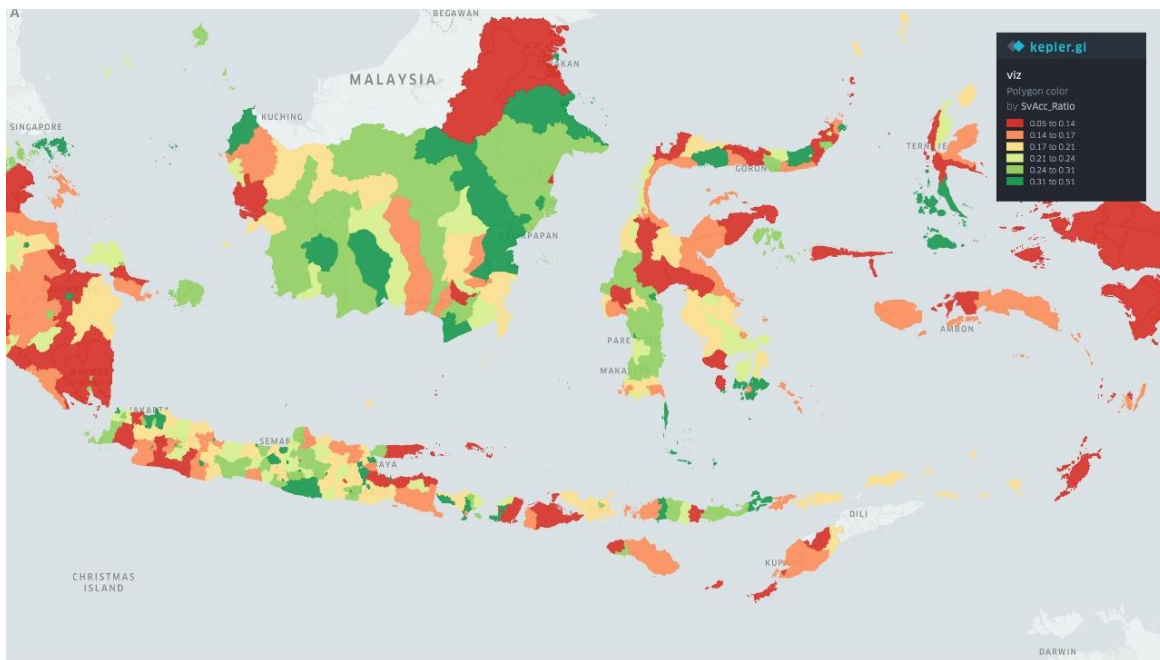
*Figure 5: Phone Uses Ratio by Cities*



*Source: SUSENAS and Twitter Data, processed*

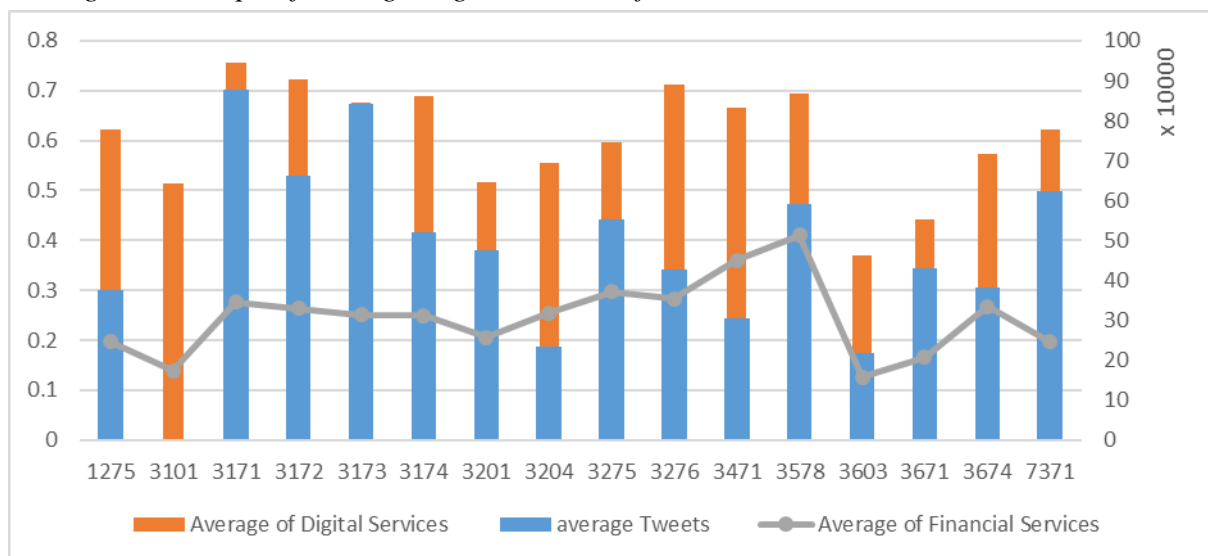
*Figure following on the next page*

Figure 6: Formal Saving Account Ratio by Cities



Source: SUSENAS and Twitter Data, processed

Figure 7: Graph of average Digital services, financial inclusion and tweets in 16 cities



Source: SUSENAS and Twitter Data, processed

## 5. CONCLUSION AND POLICY RECOMMENDATIONS

In general, digital opportunity has a significant and positive impact to financial inclusion. The use of computer, phone, and access to internet is expected to improve financial inclusion. However, in terms of Twitter data high intensity of social media activity (tweet) does not correlate directly with financial inclusion that is likely because Twitter data is not as comprehensive as SUSENAS data which covers almost all of cities and provinces in Indonesia. Based on the result, in order to accelerate financial inclusion in Indonesia we propose two recommendations. First, it is mandatory for government to reduce digital divide between eastern and western part of Indonesia as well as urban and rural area by improving internet and telecommunication infrastructure and access in those disadvantaged area as well as introducing the adoption of technology for those who are technology-illiterate.

Second, it is necessary for the government to distribute social fund like Program Keluarga Harapan through digital payment system fintech that provide e-wallet using cell phone particularly using LinkAja as it has the widest coverage in Indonesia considering that it is supported by Telkomsel that is the largest cellular provider in Indonesia and four largest SOEs banks namely BRI, Mandiri, BNI, and BTN. By using their services, the use of financial services can be accelerated considering that they have the largest coverages in almost all of Indonesia geographic location.

**ACKNOWLEDGEMENT:** *This research paper is output of Pulse Lab Jakarta Research Dive 8 on Financial Inclusion. Research Dive is a hackathon-style event organized by Pulse Lab Jakarta (PLJ), in which groups of researchers get together to explore and analyze given data sets related to the development and humanitarian issues in Indonesia within a four-day period. Authors gratefully thank Pulse Lab Jakarta for providing generous support by organizing Research Dive 8 on Financial Inclusion.*

## LITERATURE:

1. APJII. (2017). *Survey Penetrasi dan Perilaku Pengguna Internet Indonesia 2017*. Retrieved from [https://web.kominfo.go.id/sites/default/files/Laporan Survei APJII\\_2017\\_v1.3.pdf](https://web.kominfo.go.id/sites/default/files/Laporan%20Survei%20APJII_2017_v1.3.pdf)
2. Bank Indonesia. (2013). *Keuangan Inklusif: Apa, Mengapa, Bagaimana, & Siapa*. Retrieved December 10, 2018, from <https://www.bi.go.id/id/perbankan/keuanganinklusif/Indonesia/Contents/Default.aspx>
3. Lenka, S. K., & Barik, R. (2018). Has expansion of mobile phone and internet use spurred financial inclusion in the SAARC countries? *Financial Innovation*. <https://doi.org/10.1186/s40854-018-0089-x>
4. Mas, I. (2017). Using Broadband to Enhance Financial Inclusion. In *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 1: Cryptocurrency, FinTech, InsurTech, and Regulation*. <https://doi.org/10.1016/B978-0-12-810441-5.00005-1>
5. Medcalc. (2018). Logistic regression. Retrieved November 12, 2018, from [https://www.medcalc.org/manual/logistic\\_regression.php](https://www.medcalc.org/manual/logistic_regression.php)
6. OJK. (2018a). *IKHTISAR DATA KEUANGAN FINTECH (Peer To Peer Lending) PERIODE OKTOBER 2018*. Jakarta. Retrieved from [https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/fintech/Pages/Ikhtisar-Data-Kuangan-Fintech-\(Peer-To-Peer-Lending\)-Periode-Oktober-2018.aspx](https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/fintech/Pages/Ikhtisar-Data-Kuangan-Fintech-(Peer-To-Peer-Lending)-Periode-Oktober-2018.aspx)
7. OJK. (2018b). Siaran Pers: Strategi Nasional Literasi Keuangan Indonesia (Revisit 2017) Pedoman Pelaksanaan Kegiatan Literasi dan Inklusi. Retrieved November 8, 2019, from [https://www.ojk.go.id/id/berita-dan-kegiatan/siaran-pers/Pages/Siaran-Pers-Strategi-Nasional-Literasi-Kuangan-Indonesia-\(Revisit-2017\)-Pedoman-Pelaksanaan-Kegiatan-Literasi-dan-Inklusi.aspx](https://www.ojk.go.id/id/berita-dan-kegiatan/siaran-pers/Pages/Siaran-Pers-Strategi-Nasional-Literasi-Kuangan-Indonesia-(Revisit-2017)-Pedoman-Pelaksanaan-Kegiatan-Literasi-dan-Inklusi.aspx)
8. Pranata, N. (2019). The Role of Digital Payments Fintech in Accelerating the Development of MSMEs in Indonesia. In N. Nemoto & N. Yoshino (Eds.), *Fintech for Asian SMEs* (pp. 145–166). Tokyo: Asian Development Bank Institute. Retrieved from <https://www.adb.org/sites/default/files/publication/502781/adbi-fintech-smes.pdf#page=165>
9. World Bank. (2017). Financial Inclusion. Retrieved from <http://www.worldbank.org/en/topic/financialinclusion/overview>

**APPENDIX***Table 4: List of City ID and Name of 2014 Twitter Data Used in This Study*

City ID	City Name
1275	Medan
3101	Kepulauan Seribu
3171	South Jakarta
3172	East Jakarta
3173	Center Jakarta
3174	West Jakarta
3201	Bogor Regency
3204	Bandung Regency
3275	Bekasi
3276	Depok
3471	Yogyakarta
3578	Surabaya
3603	Tangerang Regency
3671	Tangerang City
3674	South Tangerang
7371	Makassar

## DIFFERENCES BETWEEN NATIONAL CULTURE DIMENSIONS AND INNOVATIVE PERFORMANCE IN CROATIA AND TURKEY

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### ABSTRACT

*Innovation is one of the most important sources of competitiveness in international markets. There are a number of factors that influence innovation on individual and firm levels, such as industry, firm age, firm size and organizational culture. This paper aims to study the determinants of innovative performance at the national level. The countries selected for the study are Croatia and Turkey, and a special emphasis is put on national culture dimensions as potential determinants of innovative performance at the national level. In order to compare the innovative performance of Croatia and Turkey, the European Innovation Scoreboard is used. The study uses Hofstede national culture dimensions framework. The findings show that national culture dimensions can be used as a predictor of national innovative performance to some extent, but further research into other determinants of national innovative performance is required.*

**Keywords:** *European Innovation Scoreboard, Innovation, National culture*

### 1. INTRODUCTION

Innovation is one of the most important topics in business and management research in the past couple of decades. Schumpeter (1942) was one of the first scientist to refer to innovation as the force of “creative destruction” that brings about change to the existing processes and products in an organization. Innovation is seen as the key driving force behind technological development in the 20th and 21st century. It can be widely defined as a commercial outcome of applied knowledge (Crossan & Apaydin, 2010). A number of scientists have studied the main determinants of innovation at the national level (Shane et al., 1994; Van Everdingen & Waarts, 2003), and three different streams of literature can be defined. The first one studies the influence of national innovation system on innovative performance (Fagerberg & Srholec, 2008) while the second is focused more on geographical specifics that influence innovative performance (Jaffe et al., 1993). The third stream studies the relationship between national culture and innovation. National culture can be defined as a dominant set of values and norms that influence the way a society is organized (Hofstede et al., 2010). National cultures influences the way individuals in a society perceive risk, entrepreneurial opportunities, and their openness to new opportunities as well as willingness to change previous behavior patterns. It can be expected that national culture will influence innovative performance at the national level, and this relationship is well established in the literature (Shane, 1993; Didero et al., 2008; Kaasa & Vadi, 2010). However, findings regarding the relationship between national culture and innovation are still somewhat ambiguous and more detailed research is required, especially in countries that were not part of previous studies such as Croatia and Turkey.

This paper aims to fill this gap by exploring the relationship between national culture dimensions and innovation in Croatia and Turkey through the comparison of their national culture dimension scores with their European Innovation Scoreboard reports.

## 2. LITERATURE REVIEW

National culture dimensions framework was introduced by the Dutch anthropologist Geert Hofstede who empirically proved the existence of different dimensions of national culture that correspond to dominant societal values in a certain society. The national culture value dimensions can be measured on a 0 - 100 scale that indicates how strong a certain value dimension is. Today there are six dimensions that are widely recognized and used in business and management research. Three dimensions have shown to have an influence on national innovation rates in previous research: power distance, individualism versus collectivism and uncertainty avoidance (Shane, 1993; Didero et al., 2008, Kaasa & Vadi, 2010). Power distance is “the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally”. Societies that score high on power distance have a clear hierarchy and respect for authority. On the other hand, low power distance societies question authority and do not have a tendency for tolerance of unequal distribution of power. Individualism versus collectivism measures the “degree to which people in a society are integrated into groups.” Members of individualistic societies are often not strongly connected or integrated in their broader families or other social circles. Collectivistic societies are usually represented by individuals that are strongly integrated into their families and other important social groups. Uncertainty avoidance measures tolerance for insecurity and is often confused with risk aversion, although it is not the same. When a society has low uncertainty avoidance people accept the possibility of unexpected events that can occur. High uncertainty avoidance societies have lower tolerance for unexpected events and tend to have strict laws that help them control ambiguity (Hofstede et al., 2010). The relationship between national culture and innovation can be analyzed at the individual, organizational and national level (Laznjak, 2012). Some scientists claim that Hofstede national culture dimensions framework is flawed and has possible issues with multicollinearity (Van Everdingen & Waarts, 2003) and does not take into account variation existent inside a specific society (Taras et al., 2009) and should therefore not be used in intercultural research. As a response to the criticism, Minkov & Hofstede (2011) explained that the national culture dimensions framework should only be used as a tool for comparison of differences between national cultures of different nations, and its intention was never to measure the variance inside a specific national culture. The national culture value dimensions framework has been used in numerous research papers since its development and has proven to be valid and useful especially when comparing how differences in national cultures influence various outcomes at the national level, including innovation. A number of studies have shown a correlation between power distance, individualism, uncertainty avoidance and innovation at the national level. Shane (1993) analyzed how national culture influences national innovation rates and found that low uncertainty avoidance together with low power distance and high individualism has a positive impact on innovation. Efrat (2014) replicated the study and come to the conclusion that national culture was still a strong determinant of national innovation rates. Some other scientists had similar findings (Didero et al., 2008; Kaasa & Vadi, 2010). These findings need to be taken into account with certain consideration, since there are some countries that have different relationships between national culture dimensions and innovation, such as far Asian countries. Collectivism in Japan, South Korea and China seems to play an important role in helping innovation (Kaasa & Vadi, 2010). In order to shed more light on the relationship between national culture and innovation further research is required, with an emphasis on countries that were not represented in past studies such as Croatia and Turkey.

The selection of the proper measure for innovation at the national level is important as well. Some scientists used trademarks or patents as a representation of national innovation output (Shane, 1993), others used scientific paper and citations, or percentage of sales coming from innovative products and services (Fagerberg & Srholec, 2008). This study will use the European Innovation Scoreboard as a representation of innovation at the national level. European Innovation Scoreboard is a tool that provides a comparative analysis of innovative performance in the European Union and other neighboring countries. It provides a holistic perspective of relative strength and weaknesses of national innovation systems in the selected countries.

### 3. METHODS

The aim of this study is to compare differences between national culture dimensions and innovative performance in Croatia and Turkey. In order to measure national culture, data on value dimensions scores from [www.hofstede-insights.com](http://www.hofstede-insights.com) was used. Innovative performance on the other hand was represented through national European Innovation Scoreboard scores. Croatia and Turkey are somewhat similar in the values of their national culture dimensions. They both score high on both power distance and uncertainty avoidance. Croatia has a lower score on uncertainty avoidance, while Turkey has a lower score on power distance. This signifies that people in Croatia have a higher respect for hierarchy and authority, as well as a higher understanding of unequal distribution of power than people in Turkey. On the other hand, people in Turkey have less of a tolerance for social ambiguity and unexpected situations. Both countries score relatively low on individualism, with Croatia having a slightly lower score than Turkey. Following previous work on the relationship between national culture and innovation it can be stated that both Croatia and Turkey do not have the most favorable national culture dimensions configuration for high levels of innovation.

*Table 1: National culture dimensions in Croatia and Turkey (author, based on [www.hofstede-insights.com](http://www.hofstede-insights.com))*

	<b>Power Distance</b>	<b>Individualism</b>	<b>Uncertainty avoidance</b>
<b>CROATIA</b>	73	33	80
<b>TURKEY</b>	66	37	85

It is expected that higher levels of individualism present in a national culture help innovation since they stimulate creativity, a higher propensity to develop new solutions and a higher willingness to take risk (Shane et al., 1995). Thus, low individualism scores in both Croatia and Turkey can be seen as limiting factors for innovation at the national level. Khazanachi et al. (2007) claim that high levels of power distance have a negative influence on innovation since they encourage control and efficacy. In high power distance societies individuals are less keen to stand up to their superiors, speak up their mind and promote their own solutions which can be detrimental to innovation (Hofstede et al., 2010). Turkey has a slightly better score on both individualism and power distance dimensions regarding the relationship with innovation. The relationship between uncertainty avoidance and innovation is still somewhat ambiguous. A number of authors claim that uncertainty avoidance correlates with a lower tolerance for risk taking as well as an aversion for challenging the status quo which can be detrimental for innovation efforts (Smale, 2016). On the other hand, some studies show that a higher uncertainty avoidance correlates positively with innovation (Stephan & Uhlaner, 2010). One of the explanations for this phenomenon is that societies that score highly on uncertainty avoidance tend to have stricter laws that protect intellectual property and thus can help the development of new ideas and their commercialization (Sweet & Maggio 2015). Following these assumptions it can be stated that Turkey has a better configuration of national culture dimensions than Croatia in terms of innovative performance.



In order to test these assumptions, the European Innovation Scoreboard will be used. The Scoreboard is a tool that can be used for analysis of national innovative performance. It provides a comparative analysis of various innovation factors such as human resources, firm investments and research systems. The European Innovation Scoreboard can also be seen as a measure of the development of the national innovation system. A broad definition of a national innovation system would state that it is a flow of technology and information among individuals, organizations and public institutions which is the most important determinant of innovation at the national level and can be used as a measure of national innovative performance (Nelson, 1993).

*Table 2: EIS scores for Croatia and Turkey (Author, based on [https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards\\_en](https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en))*

EUROPEAN INNOVATION SCOREBOARD	PERFORMANCE RELATIVE TO EU IN 2018	
	Croatia	Turkey
Summary innovation index	54,8	59,2
Human resources	49,9	35,8
New doctorate graduates	60,7	14,7
Population with tertiary education	66,9	50
Lifelong learning	12,2	48
Attractive research systems	33,7	27,1
International scientific co-publications	63,3	5,2
Most cited publications	25,5	35,7
Foreign doctorate students	18,5	33,8
Innovation friendly environment	41,3	78,2
Broadband penetration	44,4	100
Opportunity-driven entrepreneurship	38	55,3
Finance and support	30,3	41,8
R&D expenditure in the public sector	51,6	45,5
Venture capital expenditures	12,2	N/A
Firm investments	93,6	92,8
R&D expenditure in the business sector	29,6	39,3
Non-R&D innovation expenditures	140,9	176,1
Enterprises providing ICT training	105,3	57,9
Innovators	95,4	150
SMEs product/process innovations	86,8	127,8
SMEs marketing/organizational innovations	197,9	158,7
SMEs innovating in-house	92,7	165,9
Linkages	62,9	41,6
Innovative SMEs collaborating with others	81	86,9
Public-private co-publications	55,8	7,6
Private co-funding of public R&D expenditure	51,8	22,6
Intellectual assets	30	8,5
PCT patent applications	18,2	18,9
Trademark applications	51,7	3,6
Design applications	20,7	2,7
Employment impacts	64,6	10,3
Employment in knowledge-intensive activities	69,4	11,8
Employment fast-growing enterprises	60,9	N/A
Sales impacts	35,3	55,3
Medium and high-tech product exports	54,5	55,4
Knowledge-intensive services exports	2,7	38,9
Sales of new-to-market/firm innovations	49,9	75,1

Both Croatia and Turkey can be viewed as moderate innovators based on their EIS score. Both countries have increased their innovative performance from 2011 based on the results of nationwide CIS (Community Innovation Survey) questionnaire. When discussing Turkey, innovators, firm investments and innovation-friendly environment are the strongest innovation dimensions. Turkey has good results when it comes to non – R&D innovation expenditures, SMEs innovating in-house and SME's that produce various marketing or organizational innovations. On the other hand, intellectual assets, employment impacts and attractive research systems are the weakest innovation dimensions, while the lowest indicator scores are on design applications, trademark applications and scientific publications that are recognized internationally. Similar to Turkey, innovators and firm investments are the strongest innovation dimensions in Croatia as well. Non – R&D expenditures, SME's with marketing or organizational innovations as well as enterprises providing ICT training have the highest indicator scores. Finance and support as well as attractive research systems are the innovation dimensions with the lowest scores. The lowest indicator scores for Croatia are knowledge intensive service exports, venture capital expenditure and lifelong learning. As was expected, Turkey has a slightly higher overall EIS score than Croatia. However, when looking at the innovation dimensions that constitute the EIS, a number of interesting observations can be made. Turkey scores significantly higher on innovation friendly environment than Croatia, with the opportunity driven entrepreneurship score for Turkey being 55.3 and for Croatia 38.0. This implies that Croatian entrepreneurs are starting new ventures out of necessity more than due to new ideas being brought to the market. Since entrepreneurship can also be seen as an important determinant of innovation it would be interesting to do a comparative case study on entrepreneurship in Croatia and Turkey. Both Croatia and Turkey have a high score on the innovators dimension. However, Turkey surpasses Croatia by nearly 50 points when it comes to SME innovations. One of the possible reasons for this is the fact that family owned SME's account for the majority of Turkish business organizations both in terms of numbers and share in GDP, while this is not the case in Croatia where large organizations tend to innovate more than SME's (Baković, 2011). When it comes to collaboration between innovative business organizations both Croatia and Turkey seem to have a large number of organizations collaborating with each other. However, private and public sector collaboration in terms of innovation seems to be much weaker in Turkey. Croatia also has better results when it comes to employment in knowledge intensive activities while Turkey fares better in terms of knowledge intensive service exports and sales of innovative products and services in general. It can be stated that Turkey has a more favorable configuration of national culture dimensions for innovation than Croatia. As was expected, Turkey also has a higher EIS score. Although the overall EIS score does not differ that much, more thorough analysis shows that there are significant differences in the various dimensions of innovative performance between Turkey and Croatia. It is difficult to attribute these differences simply to the influence of national culture value dimensions. However, there is a number of interesting observations that can be made. Higher levels of individualism combined with lower levels of power distance can be beneficial to product and process organizations and this can explain the higher score attributed to the innovators dimension in Turkey. Turkey also has a higher score on opportunity driven entrepreneurship combined with a higher uncertainty avoidance score than Croatia. A possible explanation for this is provided by Stephan et al. (2010) who state that high uncertainty avoidance can be linked to better protection of intellectual property and stricter laws regarding private ownership in general that helps promote entrepreneurship.

#### 4. DISCUSSION

The relationship between national culture and innovative performance of nations is well established in the literature. Over the years a number of studies have been conducted in order

to answer the question “Why are some nations more innovative than others?”, and culture was often emphasized as a significant determinant that affects innovative performance both in organizations and at the national level. This paper has aimed to analyze the differences between national culture dimension and innovative performance in Croatia and Turkey. In order to do so, three national culture dimensions most commonly related with innovation were used; individualism-collectivism, uncertainty avoidance and power distance. According to previous studies it can be stated that Turkey has a better national culture dimensions configuration for innovation than Croatia. In order to explore this assumption, data from the European Innovation Scoreboard was used. Although Turkey does have a slightly higher EIS score, there are a number of structural differences in terms of innovation-friendly environment, as well as innovation employment and sales impact between Turkey and Croatia that can't be explained by differences in national culture value dimensions. In support of this claim Švarc (2017) elaborates that in the case of Croatia “transition-induced factors dominated by ‘crony variance of capitalism’ have an equal, if not a greater, suppressive impact on the current innovation culture than standard explanations based on the socio-cultural heritage of socialism and cultural inertia”. Švarc et al. (2019) come to same conclusion when analyzing innovation and entrepreneurship at the regional level. In similar fashion, Gorodnichenko & Roland (2017) claim that culture does have a long-run effect on economic growth and innovation, but that there is also a two way causal effect between national culture and institutions that needs to be researched and analyzed in the future in order to provide better insights into the complex relationship between culture and innovation. When discussing national culture, a number of scientists have given propositions to try to move away from Hofstede's model. Schwartz (1994) and House et al. (2004) have tried to develop new national culture value dimensions, but Minkov & Hofstede (2011) have shown that these models can be seen as extensions to the original Hofstede's model, and not as a completely new models. Leung et al. (2009) claim that Hofstede's model does not fully envelop the construct of national culture since it does not take into account societal norms that represent the way things are really done in a certain society while values explain only how people feel things should be done. Gelfand et al. (2006) have tried to develop a new model of national culture through analyzing how strict or loose the norms in a certain society are. It is presupposed that stricter societies will also have a stronger culture in terms of more individuals adhering to the societal norms than in loose societies. This implies that it is not only important to analyze if national culture has an influence on national innovative performance but also how strong this influence is.

## 5. CONCLUSION

Although Croatia and Turkey have a number of significant differences in terms of size, population and GDP, the lens of national culture enables us to analyze how different societal values influence differences in national innovation outputs. Based on previous research, we concluded that Turkey has an overall more supportive national culture dimensions configuration for innovation than Croatia. The analysis of European Innovation Scoreboard index has indeed shown that Turkey scores better on innovation in most analyzed categories, especially innovation friendly environment which can, to some extent, be explained by a more favourable view and acceptance of innovation in a national culture. The limitation of this exploratory study is that it was conducted only in two countries through comparison of secondary data. Future research should try to broaden the sample of countries taken into analysis. It would be interesting to compare findings from other nearby countries like Slovenia, Serbia, Bosnia and Herzegovina, North Macedonia, Albania and Greece. Another possible issue with this study is the use of European Innovation Scoreboard as a measure for national innovative performance. Although EIS is a holistic index that takes into account numerous innovation indicators it is possible that other some other indexes such as the Global

Entrepreneurship Monitor (GEM) or the Global Innovation Index could give better results. It would also be interesting to try to combine these indexes in order to create a longitudinal meta measure of innovation across different countries. Future research should therefore try to include new ways of looking at national innovative performance as well as move away from Hofstede's model in terms of trying to elaborate in more detail the way in which national culture influences innovation. Therefore, the question asked can be reformulated from "Does national culture influence innovation?" to "How and in which way does national culture influence innovation?"

## LITERATURE:

1. Baković, T. (2011). Utjecaj kvalitete i inovacija na poslovanje poduzeća u Hrvatskoj prerađivačkoj industriji. *Ekonomski pregled*, 62(9-10), 525-543.
2. Crossan, M. M., Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of management studies*, 47(6), 1154-1191.
3. Didero, M., Gareis, K., Marques, P., Ratzke, M. (2008). *Differences in innovation culture across Europe. Transformative Use of ICT in EU Regions*. Germany: Transform.
4. Efrat, K. (2014). The direct and indirect impact of culture on innovation. *Technovation*, 34(1), 12-20.
5. *European Innovation Scoreboard*. (2019). Retrieved 20.08.2019. from [https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards\\_en](https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en).
6. Fagerberg, J., Srholec, M. (2008). National innovation systems, capabilities and economic development. *Research policy*, 37(9), 1417-1435.
7. Gelfand, M. J., Nishii, L. H., Raver, J. L. (2006). On the nature and importance of cultural tightness-looseness. *Journal of Applied Psychology*, 91(6), 1225.
8. Gorodnichenko, Y., Roland, G. (2017). Culture, institutions, and the wealth of nations. *Review of Economics and Statistics*, 99(3), 402-416.
9. *Hofstede Insights – Compare Countries Tool*. (2019). Retrieved 20.08.2019. from <https://www.hofstede-insights.com/product/compare-countries/>.
10. Hofstede, G., Hofstede, G. J., Minkov, M. (2010) *Cultures and organizations Software of the mind: Intercultural Cooperation and Its Importance for Survival*. 3rd Edition. New York: McGraw Hill.
11. House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. New York: Sage publications.
12. Jaffe, A. B., Trajtenberg, M., Henderson, R. (1993). Geographic localization of knowledge spillovers as evidenced by patent citations. *The Quarterly journal of Economics*, 108(3), 577-598.
13. Kaasa, A., Vadi, M. (2010). How does culture contribute to innovation? Evidence from European countries. *Economics of innovation and new technology*, 19(7), 583-604.
14. Khazanchi, S., Lewis, M. W., Boyer, K. K. (2007). Innovation-supportive culture: The impact of organizational values on process innovation. *Journal of operations management*, 25(4), 871-884.
15. Lažnjak, J. (2012). Dimensions of national innovation culture in Croatia. *Društvena istraživanja*, 20(4), 1015-1038.
16. Leung, K., Bhagat, R., Buchan, N. R., Erez, M., Gibson, C. B. (2011). Beyond national culture and culture-centricism: A reply to Gould and Grein (2009). *Journal of International Business Studies*, 42(1), 177-181.
17. Minkov, M., Hofstede, G. (2011). The evolution of Hofstede's doctrine. *Cross Cultural Management: An International Journal*, 18(1), 10-20.

18. Nelson, R. R. (Ed.). (1993). *National innovation systems: a comparative analysis*. Oxford University Press on Demand.
19. Schumpeter, J. (1942). Creative destruction. *Capitalism, socialism and democracy*, 825, 82-85.
20. Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values?. *Journal of social issues*, 50(4), 19-45.
21. Shane, S. (1993). Cultural influences on national rates of innovation. *Journal of business venturing*, 8(1), 59-73.
22. Shane, S., Venkataraman, S., MacMillan, I. (1995). Cultural differences in innovation championing strategies. *Journal of management*, 21(5), 931-952.
23. Smale, T. (2016). Why national culture should be at the heart of innovation management. *Technology Innovation Management Review*, 6(4), 18 – 25.
24. Stephan, U., Uhlaner, L. M. (2010). Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship. *Journal of International Business Studies*, 41(8), 1347-1364.
25. Sweet, C. M., Maggio, D. S. E. (2015). Do stronger intellectual property rights increase innovation?. *World Development*, 66, 665-677.
26. Švarc, J. (2017). A socio-political approach to exploring the innovation culture in post-socialist countries: the case of Croatia. *Post-Communist Economies*, 29(3), 359-374.
27. Švarc, J., Lažnjak, J., Dabić, M. (2019). Regional innovation culture in innovation laggard: A case of Croatia. *Technology in Society*.
28. Taras, V., Rowney, J., Steel, P. (2009). Half a century of measuring culture: Review of approaches, challenges, and limitations based on the analysis of 121 instruments for quantifying culture. *Journal of International Management*, 15(4), 357-373.
29. Van Everdingen, Y. M., Waarts, E. (2003). The effect of national culture on the adoption of innovations. *Marketing Letters*, 14(3), 217-232.

# VALUATION OF SHARES AND THEIR FAIR VALUE OF THE COMPANIES LISTED ON THE WIG-UKRAINE QUOTED ON THE WARSAW STOCK EXCHANGE IN POLAND WITHIN 2011-2019

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## **ABSTRACT**

*This paper examines share price of the companies listed on the WIG-Ukraine and their fair value between 2011-2019. Data from Q4 2011 to Q3 2019 was collected from the Stooq.pl (Polish portal of shares). Two hypotheses are tested: (1) value of the shares based on the market price; (2) value of the shares as the fair value of shares. In this paper, the WIG-UKRAINE stock exchange sector companies, which oppose a bad economic situation in Ukraine caused by military actions on its territory, were analysed. These companies were subject to detailed research in order to demonstrate that they have the potential to act on the free market and that they do not lose their financial liquidity. In addition, their fair value was shown, because the current economic and market situation in Ukraine completely deprived it of this value.*

**Keywords:** stock exchange, share valuation, fair value, companies

## **1. INTRODUCTION**

Share valuation is one of the most complex processes on financial markets since the value of shares does not depend only on demand and supply on the market, but also on many factors that determine its price, starting from business valuation by using different methods in the given time to the presentation of mechanisms changing the value of shares in a manner either increasing or decreasing its value. For this reason, it is so important to value shares and determine its fair value in a manner that is objective and independent of speculative values that distort share prices and hence of the value of a WSE-listed company, which research conducted on the WIG-Ukraine index applies to. The value of companies listed on this index should be analyzed in terms of estimating their fair value, since presently their value should arouse significant controversies, especially at good operation of companies.

## **2. UKRAINIAN ECONOMY**

A fall in GDP of 5% in Ukraine would be a good result, because the economic situation has dramatically deteriorated due to the war in Eastern Ukraine. Such an index is consistent with the forecast of the International Monetary Fund, which estimates this year's expected reduction of GDP to 5.0%. However, according to the Ukraine's central bank, it will rise to 4%. As Kozak emphasised, in 2019, Ukraine can gain the economic growth of 3%, if the parliament approves the planned tax reform. Fiscal changes will be also introduced, and the reform will include the income tax and tax on corporate profits, as well as social security contributions. Within the framework of the reform, six income groups of both natural and legal persons, singled out for the fiscal purposes, is to be replaced with only three, and the tax rate for the lowest group will be reduced by half. Poland, which has 30-year experience in the economic transformation, offers Ukraine assistance in management, and can pass on this know-how to Ukraine, which is at the beginning of this road. Poland may also economically advise it in terms of reforms. However, the Ukrainians will have to give only the will and desire to take advantage of our experience, which was struggled with success and sometimes mistakes. Experts from the European Bank for Reconstruction and Development point out the three main tasks they believe Ukraine will face this year.

These are: maintaining macroeconomic stability, necessary to attract foreign capital, reforming the energy sphere, and reforming state-owned banks and their preparation for privatization. In this year's forecasts, experts from the Dnieper also point out that Ukraine, like not many countries on the European continent, depends on the weather factor, which is almost neglected today in the context of the economy. Today, one-third of the country's currency income comes from agricultural exports. Possible, caused by adverse weather conditions, decrease in yields and, as a consequence, the export of the agro-food sector, can strongly hit the entire economy.

### **3. FAIR VALUE OF LISTED COMPANIES**

Share price of the companies listed on the Stock Exchange should reflect also their fair value (Pierce, 2004, pp. 124-145). The fair value can be defined in several ways. In view of the foregoing, the fair value is a value used repeatedly in accounting, and thus in Article 28 (6) of the Accounting Act of 29.09.1994 as "the amount for which a given asset component could be exchanged, and the liability could be paid on market transaction terms between interested and well-informed, unrelated parties. In view of whether the price of shares that are quoted on the stock exchange corresponds to their fair value, should be found in the value alone, since, after all, the values may be diverse, like the value of a similar company, producing similar goods and operating in the same industry, will also be diverse for various reasons. The subject of trade covers minority shares, and the main market participants are retail investors or minority institutional investors, thus the price of shares should reflect the fair value characterizing the liquid minority interest (Borowski, 2013, bossa.pl). The value presented in this way seems righteous, which is confirmed by the premium paid by the investors who announce calls for subscription for shares and plan in this way the purchase of the controlling interest. Then the premium reflects the difference between the level of liquid minority interest and the level of controlling interest. Sometimes the level takes into account benefits resulting from synergy. An investor purchasing the controlling interest in this way receives premiums that appear after taking over control of a company, in the form of funds, business management and making a number of strategic decisions. The fair value of the share price should be determined in accordance with the idea of capital market, namely the market participants should have equal access to data, information and all messages concerning a given company. However, the investors are divided into three groups:

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

At this point, there should be no differences in particular groups, at least officially, however, it happens that a group that is closest to the company has information which can obviously change its value overnight or distort its value artificially, e.g. other data or informal data, and even fictitious data. Worldwide we can also appreciate companies that treat individual investors seriously, namely provide them data concerning a company and treat them as equal and as strategic investors, with a large impact on a company in the present and in the future. Transactions that are concluded on the Warsaw Stock Exchange relate to transactions between interested parties, namely a purchase or sale order should be submitted. Sometimes there are cases of wrongly submitted orders, but these are marginal orders that do not have a large impact on the transactions conducted on the Warsaw Stock Exchange. Share liquidity is understood as a percentage quantity of shares in a company that are in the possession of minority shareholders. This is, at the same time, free float and the face value of such shares and the value of average daily trade in shares in a given company (Kufel, 1992, pp. 78-89).

Thus, we may presume that if during a day a large trade in shares takes place and a greater part of shares remains in the hands of minor shareholders, the share price reflects their fair value. We cannot agree with the fact that at small or minimum trade the value of shares is reduced to its daily minimum and it would be its fair value. Then it is only a change in the share price to a lower one and it does not indicate its fair value, as the trade alone suggests that this is only a pure coincidence. Such an impact can be exerted by large shareholders, as they can, by using one block, decrease the share value, preventing smaller players from raising the price for one reason: the capital of smaller shareholders does not enable them to raise the share price (Veale, 2001, pp. 88-125; Frąckowiak, 1998, pp. 34-42). There is one premise more to determine the fair value of share price. The investors are fond of investing in shares, namely they buy them as in the past they managed to earn on them and they feel that presently the share price is ideal and reflects their fair value and will enable them to obtain fair dividend in the future. Such a purchase or sale of shares can largely overestimate or underestimate the share value of a quoted company. Here the IT industry may serve as an example, namely shares in technological companies at the beginning of the new millennium, when shares in these companies were being purchased without any analysis in technical terms, but looking at their name and value, which was increasing overnight. In view of the foregoing, this led to excessively high business value above its fair value (Thompson, 2008, pp. 45-67). The share price should thus reflect the fair value of a company listed on the Warsaw Stock Exchange. For the value of these companies be fair, the market must make available to all investors information regarding companies listed on the Warsaw Stock Exchange. The shareholders should be treated equally; therefore we cannot distinguish majority shareholders as those who should have information unavailable for minority shareholders. First of all, shares should be liquid securities, therefore they should be in free float and have real-time transferability, namely at any moment and at any time during the office hours of the Warsaw Stock Exchange on a business day (The analysis of 233 recommendations or analytical reports issued by broker's offices in the period from January 2011 to January 2019, concerning companies indexes of the Warsaw Stock Exchange).

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

The WIG-Ukraine index groups only shares in Ukrainian companies listed on the Main Market of the Warsaw Stock Exchange. This index enables investors to estimate investment demand in a given sector but only for the Ukrainian companies listed on the Warsaw Stock Exchange, and is the basis for assessment of investment results. This is a total return index, which takes into account dividend and preemptive rights and free float. The index has been calculated since 01.01.2011 and its initial value was 1000 points. However, the index value as of 20.10.2019 is 361.51 points, namely it is overvalued over 64% in relation to the initial value, which shows its downward trend.

Value of the WIG-Ukraine index:

$M(t)$

$$\text{WIG-Ukraine}(t) = \frac{M(t)}{M(0) * K(t)} * 1000.00$$

$M(t)$  – index portfolio capitalization at session  $t$

$M(0)$  – index portfolio capitalization on a base day

$K(t)$  – index adjustment factor at session  $t$

*Figure following on the next page*





Figure 1: WIG-Ukraine index in the years 2011 – 2019 (source: stooq.pl)

The WIG-Ukraine, as the second national index calculated by the stock exchange, is an index showing very expressively operations of the Ukrainian companies. It consists of the companies listed on the Warsaw Stock Exchange seated in Ukraine or whose operations are conducted predominantly in this country. However, the WIG-Ukraine as an a total return index includes both prices of shares contained in it and earnings from dividends and preemptive rights, which should be expressed as the fair value, however, it is not the case (Jajuga K, Jajuga T., 1996, pp. 34-57).

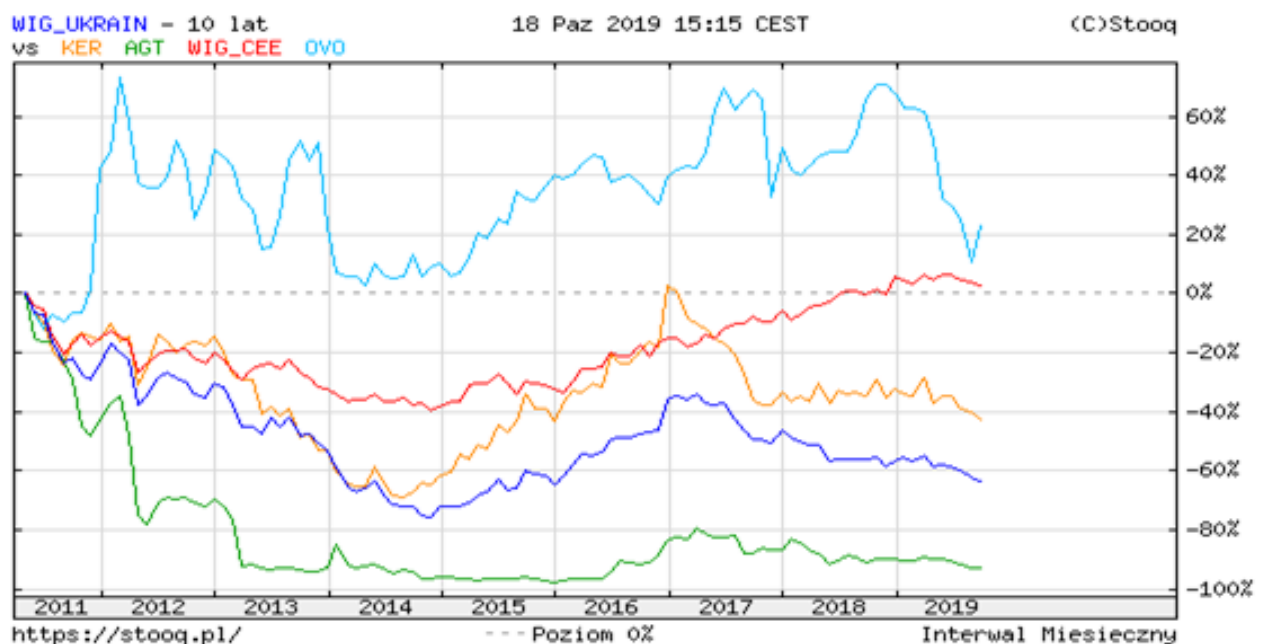


Figure 2: WIG-Ukraine rates of return 2011-2019 (source: stooq.pl)

The chart WIG-Ukraine P/E presents the present value as of 20.10.2019 of 4.00, which proves that the total price to earnings ratio shows upward trend and it should come back to 12, as those companies have high financial potential, are investing their funds well and have been significantly undervalued and their fair value has been underestimated.

The companies listed on the WIG-Ukraine index have good financial standing:

- a) **ASTARTA** - agricultural and industrial holding, one of leaders of the Ukrainian sugar sector. The company has been focusing its operations on the production and sale of sugar produced from beetroot and on the production and sale of cereals, which results from the need to use crop rotation in the beetroot cultivation.
- b) **KERNEL HOLDING SA** - conducts integrated operations in the sector of bottled edible oils and in agribusiness, with the scope including all production stages, from cultivation of agricultural products to delivery of the final product to consumer. **KERNEL HOLDING** is a holding company registered in Luxembourg, whose main property are shares in production companies.
- c) **IMCOMPANY** - company from the agricultural sector in central-north Ukraine. The operations of IMC are focused on the cultivation of cereals, oil plants and potatoes, and the Company is also one of the largest milk producers in Ukraine.
- d) **OVOSTAR** - the One of the leading agro-industrial companies of Ukraine. It specializes in poultry farming, egg production, production of dry and liquid egg products, production of sunflower oil and feed, middlings and fuel briquettes.
- e) **AGROTON** - A vertically integrated agricultural group from eastern Ukraine. It deals with the production of agricultural produce (mainly wheat and sunflower) as well as processing, storage and sale of seeds of these cereals. In addition, the group also deals with livestock breeding and food production.

The current price of shares of the companies listed on the WIG-Ukraine should reflect their business value and their fair value, however, bearing in mind their maximum value, we should note that for well prospering companies their current value differs strikingly from the average or maximum value that was determined during quotations over the last few years, as shown in Table 1 (1).

*Table 1: Companies listed on the WIG-UKRAINE in Poland as of 20.10.2019 (prepared by the author on the basis of the financial data of the WIG-Ukraine companies)*

<b>Name</b>	<b>Average assessment</b>	<b>rating</b>	<b>Current price PLN</b>	<b>Max price PLN</b>
AGROTON	4.5/5.0	AA+	2.39	42.00
ASTARTA	5.0/5.0	AAA	16.60	102.62
IMCOMPANY	5.0/5.0	AAA	14.20	17.36
KERNEL	4.5/5.0	AAA	42.60	78.00
OVOSTAR	5.0/5.0	AAA	78.00	100.00

The share price of some of them has been reduced by 95% (AGROTON) and of some by less than 84% (ASTARTA), which proves their diverse structure and diverse financial possibilities. With good financial data and generating earnings per share, the companies should resist crisis and stagnation prevailing currently on the world markets. However, it is unjust to quote rating for some companies in a manner showing their weakness, since those companies generate profit and are capable of surviving on the market and maintaining financial liquidity, which is proved by the financial results in tables 2 and 3. OVOSTAR may serve as an example. Table 2 contains the most important ratios that show financial standing of the WIG-Ukraine companies. EBITDA per share is interesting, as it presents operating profit plus depreciation, which shows more effectively the companies with large fixed assets which require a very high capital expenditures characterized by a long period of return. In view of the above, EBITDA is a better ratio than EBIT, as it shows a better image of financial standing of an analyzed company (Parvi R., 2014, 33-36; Parvi R., 2014, pp. 52-60; Copeland, 1997, pp. 65-69, Parvi. R, 2016, 64-67).

In view of the so conducted analysis, we can clearly see that only two companies had problem with generating operating profit per share in the 2nd quarter of 2019: KERNEL and OVOSTAR. The other 3 companies generated operating profit per share as presented in Table 2. Almost all companies (5 companies) reduced assets to equity ratio, which resulted in release of equity and larger investment possibilities.

*Table 2: Technical assessment of companies listed on the WIG-UKRAINE as of 30.06.2019 (prepared by the author on the basis of the financial data of the WIG-Ukraine companies)*

Name	Net profit (net loss) in thousands	Sales per share	Book value per share	EBITDA per share
<b>AGROTON</b>				
IV quarter 2018	No data	No data	No data	(USD) 0,00
II quarter 2019	No data	No data	No data	(USD) 0,00
<b>ASTARTA</b>				
IV quarter 2018	(EURO) -35660	(EURO) -1.426	(EURO) 14.519	(EURO) -15203
II quarter 2019	(EURO) 34704	(EURO) 1.388	(EURO) 16.688	(EURO) 50011
<b>KERNEL</b>				
IV quarter 2018	(EURO) 88506	(EURO) 1.080	(EURO) 15.300	(EURO) 129324
II quarter 2019	(EURO) -426	(EURO) -0.005	(EURO) 16.487	(EURO) 60339
<b>IMCOMPANY</b>				
IV quarter 2018	(EURO) -4624	(EURO) -0.148	(EURO) 3.842	(EURO) -336
II quarter 2019	(EURO) 36688	(EURO) 1.172	(EURO) 5.007	(EURO) 43485
<b>OVOSTAR</b>				
IV quarter 2013	(EURO) 3395	(EURO) 0.566	(EURO) 20.999	(EURO) 4684
II quarter 2014	(EURO) -918	(EURO) -0.153	(EURO) 21.752	(EURO) 544

Price to earnings and price to shares express the value in PLN and it is a value characterized by the results of the companies which affect these values (Parvi R., 2014, pp. 262-267; Parvi R., 2014, pp. 169-177, Parvi R. 2016, 39-44). Similarly, price to book value of a company ranges from PLN 0.23 (ASTARTA and KERNEL) to PLN 1.08 (OVOSTAR). Comparing these values to the maximum values reached by the companies, we should note that the value of PLN 11.34 PLN as maximum (OVOSTAR) and of PLN 3.07 (IMCOMPANY) were values reached by the companies during their quotations on the market over the last few years (2011-2019).

*Table 3: Financial ratios of the companies listed on the WIG-UKRAINE as of 20.10.2019 (prepared by the author on the basis of the financial data of the WIG-Ukraine companies)*

Name	C/P	P/OE (price/ operating earnings)	P/BV PLN
AGROTON	No data	No data	No data
ASTARTA	0.23	9.92	0.23
IMCOMPANY	0.80	3.07	0.76
KERNEL	0.69	3.47	0.23
OVOSTAR	0.95	11.34	1.08

In view of the foregoing, we should note that from the above financial data we can calculate fair values of particular companies listed on the WIG-Ukraine.

*Table 4: Values of the companies listed on the WIG-UKRAINE as of 20.10.2019 (prepared by the author on the basis of the financial data of the WIG-Ukraine companies)*

Name	Present value	Maximum value	Fair value
AGROTON	2.39	42.00	38.00
ASTARTA	16.60	102.62	100.50
IMCOMPANY	14.20	17.36	16.50
KERNEL	42.60	78.00	68.00
OVOSTAR	78.00	100.00	89.00

From table 4 (2), it can be concluded that the fair value is significantly higher than the current share price of the companies listed on the WIG-Ukraine. A particular "pearl" in the index may be a well prospering OVOSTAR that is largely undervalued.

*Table 5: Values of the companies listed on the WIG-UKRAINE as of 20.10.2019 (prepared by the author on the basis of the financial data of the WIG-Ukraine companies)*

Name	Deviation from the fair value in PLN	Fair value
AGROTON	35.61	38.00
ASTARTA	83.90	100.50
IMCOMPANY	2.30	16.50
KERNEL	25.40	68.00
OVOSTAR	11.00	89.00

Deviation from the fair value in PLN = DevFV  
 DevFV = Fair value - current value (table 5).

## 5. CONCLUSIONS

The share price of the companies listed on the WIG-Ukraine is largely undervalued by the present financial situation worldwide and even by speculative actions of particular capital groups that "wander around" the world and subsist thanks to speculative actions using only surplus on share purchase and sale and then relocate capital to another place. Such investors are not interested in the business value and in the company's situation, its share price, but only in profit. We can see clearly that the share price of the companies listed on the WIG-Ukraine differs significantly from the fair value that has been calculated and presented in the paper. In view of the foregoing, we should particularly emphasize that this value should be achieved in the future periods, the proof of which is even growing total value of price to earnings (P/E) on the WIG-Ukraine index, where its minimal level has been already achieved. The fair value of the WIG-Ukraine companies should be achieved in the period of a few years, namely until 2022, given improved situation on world financial markets. It should be noted that there is no measured at fair value of shares and it is not easy to measure the stock shares showing their fair value.

## LITERATURE:

1. Borowski K., (2013) „Wyznaczanie punktów zwrotnych indeksu Wig przy pomocy wybranych metod analizy czasowej”. Bossa.pl
2. Copeland T., Koller T., Murrin J., (1997). „Wycena: mierzenie i kształtowanie wartości firmy”, WIG - Press, Warszawa, pp. 65-69.
3. Frąckowiak W., (1998). „Fuzje i przejęcia przedsiębiorstw”, PWE, pp. 34-42.

4. Jajuga K., (1996). Jajuga T. *"Inwestycje"*, Wydawnictwo Naukowe PWN, Warszawa, pp. 34-57.
5. Kufel M., (1992). *„Metody wyceny przedsiębiorstw"*, Wydawnictwo Park, Bielsko Biała, pp. 78-89.
6. Parvi R., (2014). *"Analysis of companies of the energy sector based on an example of the companies quoted on the Warsaw Stock Exchange in Poland and their fair value"* CER – International Scientific Conference, LONDON 2014, pp. 33-36.
7. Parvi R., (2014). *"The analysis of companies of the Polish fuel sector based on an example of PKN Orlen and Lotos companies versus value of fuel prices and their impact on fuel sector management"*, ESD – International Scientific Conference Economic and Social Development, Zagreb Croatia 2014, pp. 52-60.
8. Parvi R., (2016). *"Fair value of the banking sector companies quoted on the Warsaw Stock Exchange in Poland within 2006-2016 and their financial analysis"*, Czech Republic THOMSON Ltd. Slovakia, EDIS - Publishing Institution of the University of Zilina, 2016, pp. 39-44.
9. Parvi, R., (2016). *"Analysis of the energy sector in Poland on the example of energy industry companies quoted on the stock exchange"*. Slovakia. Itall Ltd. pp. 64-67
10. Pierce R., (2004). *"Stocks, Options & Spreads, Infinity Publishing"*, pp. 124-145.
11. Thompson B., (2008). *"Stock Market Superstar"*, Insomniac Press, pp. 45-67.
12. Veale S., (2001). *"Stocks, Bonds, Options, Futures"*, Prentice Hall Press, pp. 88-125.
13. stooq.pl (2019) – poratl giełdowy.

## ANTECEDENTS OF GAMERS' ONLINE SOCIAL CAPITAL

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### ABSTRACT

*The importance of social capital, its benefits for individuals, and the cruciality of forming and deepening social ties have been a flourishing research area in the last decades. The present study aims to contribute existing findings by analyzing online bridging and bonding social capital of  $N = 351$  gamers residing in the United States. Demographic variables, gaming intensity, and components of active/passive gaming-related behaviors were analyzed as possible antecedents of gamers' online social capital, which was measured according to existing online social capital scales that were adjusted to the context of online gaming. The conducted hierarchical multiple regressions revealed that gaming intensity and communication with other gamers in public or private chats or forums are significant, positive predictors of both bridging and bonding social capital, while watching uploaded let's plays/gaming-related videos/previously recorded live streams and reading gaming-related news, posts or discussions are significant, positive predictors of bonding social capital. Furthermore, solo gaming appeared as a significant, negative predictor of bonding social capital. The present findings indicate that while gaming intensity is a crucial factor in the construction of an individual's social capital, the frequency of other gaming-related activities plays a critical role in the discussed process as well.*

**Keywords:** *Bridging, Bonding. Gaming, Social capital*

### 1. INTRODUCTION

The phenomenon of online video games and playing together has become an emerging research area in the past decade (Williams, 2006a). The rapid growth of online console gamers in the United States is expected to reach 57.4 million in 2020 (EMarketer, 2016), whereas the United States is the leading gaming market worldwide in 2019 by gaming revenue, reaching 36.87 billion US dollars (Newzoo, 2019). The phenomenon of gaming as a social experience (Peña & Hancock, 2006) and the analysis of social interactions within online games led researchers to the conclusion that online gaming may contribute to the formation of social capital (Steinkuehler & Williams, 2006). The present paper aims to contribute to the existing knowledge of studies in this domain (Molyneux, Vasudevan, & Gil de Zúñiga, 2015; Skoric & Kwan, 2011) and focuses on gamers' social capital formation, who are residing in the United States. Existing scales of bridging and bonding social capital are modified to the online gaming context, constituting the dependent variables of the respective hierarchical regression models that are hereby conducted, while predictors, such as demographical attributes, Gaming Intensity and quantitative indicators of gaming-related behaviors are analyzed as possible predictors of the proposed social capital constructs.

The following literature review serves as a summary of previous theoretical contributions in this research area, followed by the formulated research questions and hypotheses of the study.

## **2. LITERATURE REVIEW**

Social capital is a »buzzword« (Solow, 1995, p. 38) in contemporary scientific research; however, its terminology went through a considerable transformation since its birth. The core drive of the conceptual change regarding its definition was to adjust it to the respective research application, which resulted in the terminological chaos of the theory itself. (G. Johnston & Percy-Smith, 2003; Knorringa & Van Staveren, 2007) Although the origins of social capital are still subjects of scientific discussion, the phenomenon gathered international attention through the works of French radical sociologist Pierre Bourdieu in the beginning of the 80s and American rational choice sociologist James Coleman in the late 80s and 90s (Fine, 2010), followed by Putnam, who distinguished its bridging and bonding aspects (Putnam, 2000) based on Granovetter's theory about the strength of ties between individuals (Granovetter, 1973). Putnam (2000) considered individuals' weak ties as bridging social capital, referring to a person's network of acquaintances that are beneficial for acquiring new information, whereas strong ties, termed as bonding social capital, are responsible for providing social and emotional support (e.g., family, close friends). Quan-Haase and Wellman argued already in 2004 that the rapid evolution of the Web 2.0 deems it necessary to develop measurement techniques in terms of social capital formation (Quan-Haase & Wellman, 2004), which was followed by the conceptualization and validation of bridging and bonding social capital both in online and offline contexts by Williams, based on the theoretical considerations of Putnam. (Williams, 2006b) These scales were soon extended and modified to the context of college students, analyzing their relationships and social ties, along with the intensity of their Facebook usage. (Ellison, Steinfield, & Lampe, 2007) The frequency of social media usage as a predictor of bridging and bonding social capital formation became a frequently discussed academic subject; the following table (Table 1) summarizes publications that analyzed these relationships.

*Table following on the next page*

*Table 1: Publications that evaluated Facebook Intensity as a predictor of bridging and/or bonding social capital measured based on ISCS and/or Ellison et al. (2007)*

Publication	Predicted SC	SC measurement based on	Result(s)
(Aubrey & Rill, 2013)	bridging	ISCS (Williams, 2006b)	✓ **
	bonding		✓ **
(Ellison et al., 2007)	bridging	original scale developed	✓ ****; ✓ ****
	bonding		✓ ****; ✓ ***
(Greenhow & Burton, 2011)	bridging	(Ellison et al., 2007)	✓ **
	bonding		✓ ***
	cross-cultural		
(Jiang & de Bruijn, 2014)	bridging	ISCS (Williams, 2006b);	✓ ***
	cross-cultural	(Ellison et al., 2007)	✓ ***
	bonding		
(K. Johnston, Tanner, Lalla, & Kawalski, 2013)	bridging	ISCS (Williams, 2006b);	✓ *; X
	bonding	(Ellison et al., 2007)	X
(Karikari, Osei-Frimpong, & Owusu-Frimpong, 2017)	bridging	(Ellison et al., 2007)	✓ **; ✓ **
(Kwon, D'Angelo, & McLeod, 2013)	bridging	(Ellison et al., 2007)	X
	bonding		X
(Lee, Kim, & Ahn, 2014)	bridging	(Ellison et al., 2007)	X
	bonding		X
(Li & Chen, 2014)	bridging	(Ellison et al., 2007)	✓ ****; ✓ **
	bonding		X; X
(Liu, Shi, Liu, & Sheng, 2013)	bridging	(Ellison et al., 2007)	✓ **
	bonding		✓ *
(Phua, 2012)	bridging	ISCS (Williams, 2006b)	X
	bonding		✓ *
(Skoric & Kwan, 2011)	bridging	ISCS (Williams, 2006b)	✓ **
	bonding		✓ *
(Steinfeld, Ellison, & Lampe, 2008)	bridging	ISCS (Williams, 2006b);	✓ ****
		(Ellison et al., 2007)	
(Su & Chan, 2017)	bridging	(Ellison, Vitak, Gray, & Lampe, 2014)	✓ ****; ✓ ****
	bonding		✓ ****; ✓ ****
(Vanden Abeele et al., 2018)	bridging	Ellison et al. (2007)	✓ ****
	bonding		✓ ****
(Young & Sterlitz, 2014)	bridging	(Ellison et al., 2007)	✓ **
	bonding		✓ ****

Notes: ✓ = significant predictor; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Age (Kwon et al., 2013; Lee et al., 2014), gender (Aubrey & Rill, 2013; K. Johnston et al., 2013), income (Phua, 2012), and degree (Li & Chen, 2014) as statistically significant predictors of both bridging and bonding social capital were analyzed in various studies, however, with conflicting results. Thereby poses the present paper the following two research questions:

- RQ1a: What is the relationship between demographic attributes, such as age, gender, income, and educational degree, and bridging social capital?
- RQ1b: What is the relationship between demographic attributes, such as age, gender, income, and educational degree and bonding social capital?
- Based on the results of previous publications (Table 1), the present paper proposes the following hypotheses in the first hypothesis block:
- H1a: Gaming Intensity is a significant, positive predictor of gamers' online bridging social capital.
- H1b: Gaming Intensity is a significant, positive predictor of gamers' online bonding social capital.



The relationship between gaming frequency and the formation of social capital gained scientific attention in recent years as well. (Molyneux et al., 2015; Skoric & Kwan, 2011) The present study aims to extend existing knowledge in terms of such quantity indicators in terms of gaming-related behaviors, thereby poses the following two research questions:

- RQ2a: What is the relationship between gaming-related quantity indicators, such as the frequency of multiplayer gaming, solo gaming, communication with other gamers on online platforms, spectating and online gaming-related information gathering, and bridging social capital?
- RQ2b: What is the relationship between gaming-related quantity indicators, such as the frequency of multiplayer gaming, solo gaming, communication with other gamers on online platforms, spectating and online gaming-related information gathering and bonding social capital?

### 3. METHODOLOGY

An online questionnaire was operationalized in SoSci Survey (Leiner, 2019) and conducted on Amazon Mechanical Turk (mTurk) to investigate US gamers' personal attributes, gaming behavior, and social ties between the 3rd and 5th of August 2019, resulting in N = 351 valid responses. mTurk was chosen as the means of sampling based on recent studies arguing that its population provides representative samples for the respective research goals and respondent criteria. (Thomas & Clifford, 2017) For further verification, a geographical restriction was applied, concentrating exclusively on mTurk workers residing in the United States, whereas a filter containing existing and fabricated game titles served the function at the beginning of the survey to select only those individuals, who are knowledgeable in terms of contemporary games. Gaming was measured by both quality and quantity indicators. For the former measurement, the intensity of gaming engagement was measured using a priorly conducted and validated scale by Ellison and colleagues (2007), namely the Facebook Intensity scale, which was recently also adjusted to measure the intensity of social network SNS use (Greenhow & Burton, 2011; Phua, 2012), the strength of cross-cultural Facebook interaction intensity (Jiang & de Bruijn, 2014) and Renren intensity (Li & Chen, 2014). (Table 2) In terms of quantity indicator, referring to the frequency of gaming-related activities, the present study asked five questions relating to active gaming-related behaviors, such as the frequency of multiplayer and online gaming, whereas passive engagements, such as communication with other gamers on various online platforms, spectating and information gathering online (e.g., reading gaming-related articles, news, etc.). For the measurement of the latter behaviors, the study used 9-point Likert scales, ranging from 1 = less than monthly to 9 = daily, more than 6 hours.

SC

*Table following on the next page*

*Table 2: Item construction of the Gaming Intensity scale based on the work of Ellison and colleagues (Ellison et al., 2007, p. 1150)*

Facebook Intensity scale items (Ellison et al., 2007, p. 1150)	Gaming Intensity scale items
About how many total Facebook friends do you have at MSU or elsewhere? 0 = 10 or less; 1 = 11-50; 2 = 51-100; 3 = 101-150; 4 = 151-200; 5 = 201-250; 6 = 251-300. 7 = 301-400; 8 = more than 400	About how many total gamers do you consider as your friends? 1 = 0; 2 = 1-5; 3 = 6-10; 4 = 11-15; 5 = 16-20; 6 = 21-30; 7 = 31-50; 8 = 51-100; 9 = 101-150; 10 = more than 150
In the past week, on average, approximately how many minutes per day have you spent on Facebook? 0 = less than 10; 1 = 10-30; 2 = 31-60; 3 = 1-2 hours; 4 = 2-3 hours; 5 = more than 3 hours	In the past week, on average, approximately how many minutes per day have you spent with gaming? 1 = less than 10 minutes; 2 = 10-30 minutes; 3 = 31-60 minutes; 4 = 1-2 hours; 5 = 2-3 hours; 6 = 3-5 hours; 7 = more than 5 hours
Facebook is part of my everyday activity.	Gaming is part of my everyday activity.
I am proud to tell people I'm on Facebook.	I am proud to tell people I'm a gamer.
Facebook has become part of my daily routine.	Gaming has become part of my daily routine.
I feel out of touch when I haven't logged onto Facebook for a while.	I feel out of touch when I haven't been gaming for a while.
I feel I am part of the Facebook community.	I feel I am part of a gaming community.
I would be sorry if Facebook shut down.	I would be sorry if my main gaming platform(s) shut down.

After the univariate analysis of data, Cronbach Alpha test to evaluate its internal consistency of the constructed Gaming Intensity items, followed by item standardization with z-scores and mean centering. Bridging and bonding social capital items were adjusted to online gaming context from the original item formulations and were measured with 7-point Likert scales. (Ellison et al., 2007; Ellison, Steinfield, & Lampe, 2011; Williams, 2006b) Both bridging and bonding social capital items were evaluated with Cronbach Alpha and those items that showed weak correlation coefficients with other elements of the scale and weakened the scale's internal consistency considerably, were removed from further analysis. After this evaluation, both social capital scales were mean-centered. Quantity statements in terms of gaming-related activities were measured on 9-point Likert scales, ranging from »less than monthly« to »more than 6 hours a day«. Statement subjects were the frequency of multiplayer and solo gaming, communication with other gamers on various platforms (e.g., Discord, social media, forums, etc.), spectating behavior (e.g., live streams, YouTube videos, etc.) and information gathering (e.g., gaming-related news, blog posts, etc.). For the evaluation of the paper's hypotheses, hierarchical multiple regressions were conducted in IBM SPSS Statistics v. 25.

#### 4. RESULTS

From the N = 351 participants of the study, N = 208 were male (59.4%) and further N = 142 female (40.5%), while N = 1 respondent did not want to answer this question. The highest percentage of participants were 25-29 years old (N = 93, 26.5%), while further N = 79 respondents were between 20-24 years (22.5%) and the frequency of participants between the ages of 30 and 34 was N = 60 (17.1%). A considerable ratio of participants declared to have a Bachelor's degree (N = 135, 37.3%), followed by respondents with vocational secondary certification (N = 34, 9.7%) and those who finished their education without a degree (N = 34, 9.7%). In terms of monthly income, the highest ratio of respondents marked one between 2000\$ and 3000\$ (N = 52, 14.8%), followed by those with an income in the range of 3000\$-4000\$ (N = 43, 12.3%). Further N = 40 respondents were in the income categories of 1000\$-1500\$ and 15000\$-2000\$, both displaying a ratio of 11.4%.

Regarding the operationalized gaming-related behaviors, the highest arithmetic mean as well as the lowest standard deviation was reached in the case of solo gaming ( $\bar{x} = 5.84$ ,  $SD = 1.965$ ), meaning that on average, respondents played more than three times a week or daily, but less than an hour. The frequency of multiplayer gaming ( $\bar{x} = 5.26$ ,  $SD = 2.368$ ) was relatively lower; however, its arithmetic average was still above 5, although with a somewhat higher standard deviation. The lowest arithmetic average was reached for the frequency of communication with other gamers online ( $\bar{x} = 4.48$ ,  $SD = 2.507$ ). Items of the hereby constructed Gaming Intensity scale reached an  $\alpha = .875$  internal consistency. However, during the inspection of the corrected item-total correlations and the adjusted alpha scores in the cases of individual item deletion (Table 4) revealed that the first statement »About how many total gamers do you consider as your friends?« displayed a relatively weaker correlation coefficient ( $r = .389$ ) and its deletion would result in a higher alpha score of  $\alpha = .885$ . Based on this reasoning, this particular item was removed from further analysis. The remaining seven items were standardized and mean-centered to construct the final scale. Scale items of online bridging social capital (Table 4) all displayed a corrected item-total correlation above .600, and the deletion of either of the items would have resulted in a considerably higher Alpha score than the original  $\alpha = .952$ , which was reached with all items included. Therefore, all statements constructed the basis of scale development for online bridging social capital, which was conducted with mean centering.

*Table 3: Cronbach Alpha test results of bridging social capital scale items*

Bridging SC item	Mean	SD	Corrected Item-Total Correlation	Cronbach's Alpha if item deleted
Interacting with other gamers online makes me interested in things that happen outside my town.	4.50	1.909	.760	.948
Interacting with other gamers online makes me want to try new things.	4.56	1.838	.760	.948
Interacting with other gamers online makes me interested in what people unlike me are thinking.	4.52	1.868	.759	.948
Talking with other gamers online makes me curious about other places in the world.	4.89	1.925	.772	.948
Interacting with other gamers online makes me feel like a part of a larger community.	4.81	1.826	.858	.945
Interacting with other gamers online makes me feel connected to the bigger picture.	4.62	1.860	.804	.947
Interacting with other gamers online reminds me that everyone in the world is connected.	5.05	1.743	.746	.948
I am willing to spend time to support general gaming community activities.	4.59	1.843	.782	.947
Interacting with gamers online gives me new gamers to talk to.	4.83	1.826	.786	.947
Online, I come in contact with new gamers all the time.	4.99	1.808	.708	.949
I feel I am part of a gaming community.	4.90	1.847	.755	.948
The gaming community is a good place to be.	4.92	1.653	.739	.949
I would be willing to contribute money to the development of my gaming community.	3.93	1.960	.622	.952

The analysis of online bonding social capital items (Table 4) resulted in an internal consistency of  $\alpha = .900$ . However, three statements were removed in a stepwise manner from the original nine items. First, item 3 was removed, based on its relatively low corrected item-total correlation ( $r = .396$ ), resulting in  $\alpha = .910$ . During the analysis of the remaining eight statements, item 8 displayed a considerably weaker corrected item-total correlation ( $r = .279$ ) than all other statements of the scale and was thereby removed, resulting in an internal consistency of  $\alpha = .919$ .

From the remaining seven statements, item 5 was removed based on the same reasoning, leading to a final internal consistency of  $\alpha = .923$ . After that, the final six statements were computed in a mean-centered manner, resulting in the online bonding social capital variable to be used in the respective hierarchical regression model.

*Table 4: Cronbach Alpha test results of bonding social capital scale items*

Bonding SC item	Mean	SD	Corrected Item- Total Correlation	Cronbach's Alpha if item deleted
There are several gamers online I trust to help solve my problems. (1)	3.82	2.087	.800	.878
There is a gamer online I can turn to for advice about making very important decisions. (2)	3.81	2.175	.784	.879
There is no one of my online gamer acquaintances that I feel comfortable talking to about intimate personal problems. (reversed) (3)	4.02	2.185	.396	.910
When I feel lonely, there are several people of my online gamer acquaintances that I can talk to. (4)	4.24	2.083	.760	.881
If I needed an emergency loan of \$100, I know someone of my online gamer acquaintances I can turn to. (5)	2.68	2.012	.575	.785
There are gamers I know online who would actively stand by my side if I encountered gaming-related problems. (ban, mute, report, personal conflicts etc.) (6)	4.34	2.043	.781	.880
The gamers I interact with online, would be good references for me to achieve gaming-related advances. (moderator rights, admin rights, trusted seller at online game markets, chances to join a high-ranking team etc.) (7)	4.25	1.935	.723	.885
I do not know gamers online well enough to get them to do anything important. (reversed) (8)	4.05	2.089	.510	.901
The gamers I interact with online would help me fight an injustice. (unjust repercussions against another gamer/public persona of the community, online movements etc.) (9)	3.98	1.925	.714	.885

The following table (Table 5) represents the results of the hierarchical multiple regression model with the discussed predictors and online bridging social capital, wherein  $N = 3$  cases were excluded based on casewise diagnostics, which were considered as outliers evaluated by their studentized residuals. As the results display, the addition of Gaming Intensity to its prediction in the second step (Model 2) led to a statistically significant increase in  $R^2$  of .557,  $F(1, 340) = 91.446$ ,  $p < .001$ . Furthermore, the addition of the quantity variables of gaming-related behavior also resulted in a statistically significant  $R^2$  increase of .024,  $F(5, 335) = 4.056$ ,  $p = .001$ . The full model of age, gender, income, degree, Gaming Intensity, multiplayer gaming, solo gaming, communication, spectating and information gathering to predict gamers' online bridging social capital was statistically significant,  $R^2 = .598$ ,  $F(10, 335) = 49.806$ ,  $p < .001$ , with an adjusted  $R^2$  of .586. The final model displayed four statistically significant predictors of online bridging social capital: age ( $\beta = -.088$ ,  $p = .019$ ), Gaming Intensity ( $\beta = .689$ ,  $p < .001$ ) communication with other gamers on various platforms ( $\beta = .131$ ,  $p = .004$ ) and spectating live streams and/or uploaded videos ( $\beta = .093$ ,  $p = .026$ ).

*Table following on the next page*

*Table 5: Hierarchical multiple regression model of gamers' online bridging social capital*

Variable	Bridging Social capital								
	Model 1			Model 2			Model 3		
	B	$\beta$	<i>p</i>	B	$\beta$	<i>p</i>	B	$\beta$	<i>p</i>
Constant	5.280		< .001	5.076		< .001	4.660		< .001
Age	-.092	-.113	.048	-.092	-.113	.003	-.072	-.088	.019
Gender	-.007	-.002	.966	-.031	-.010	.771	-.073	-.025	.492
Income	-.014	-.025	.663	.008	.015	.696	.001	.002	.949
Degree	-.009	-.017	.769	.012	.025	.517	.019	.037	.319
Gaming Intensity				1.417	.749	< .001	1.303	.689	< .001
Multiplayer gaming							-.006	-.010	.823
Solo gaming							-.038	-.052	.207
Communication							.076	.131	.004
Spectating							.059	.093	.026
Information gathering							.005	.007	.868
$R^2$		.016			.574			.598	
$F$		1.423 ( $p = .226$ )			91.446 ( $p < .001$ )			49.806 ( $p < .001$ )	
$\Delta R^2$		.016			.557			.024	
$\Delta F$		1.423 ( $p = .226$ )			444.139 ( $p < .001$ )			4.056 ( $p = .001$ )	

The results of the hierarchical multiple regression model regarding gamers' online bonding social capital are depicted on the following table (Table 6); N = 1 case was excluded based on the results of the casewise diagnostics, considered as an outlier. The addition of Gaming Intensity in the second step (Model 2) led to a statistically significant increase in  $R^2$  of .369,  $F(1, 342) = 203.120$ ,  $p < .001$ . Furthermore, the inclusion of the quantity indicators of gaming-related behavior also resulted in a statistically significant  $R^2$  increase of .103,  $F(1, 337) = 13.347$ ,  $p < .001$ . The full model was statistically significant as well,  $R^2 = .481$ ,  $F(10, 337) = 31.210$ ,  $p < .001$ , with an adjusted  $R^2$  of .465. In the final model, five variables were statistically significant predictors of online bonding social capital. Gaming Intensity ( $\beta = .463$ ,  $p < .001$ ), solo gaming ( $\beta = -.101$ ,  $p = .014$ ), communication with other gamers on diverse online platforms ( $\beta = .294$ ,  $p < .001$ ), spectating ( $\beta = .093$ ,  $p = .048$ ) and information gathering ( $\beta = .112$ ,  $p = .023$ ).

*Table 6: Hierarchical multiple regression model of gamers' online bonding social capital.*

Variable	Bonding Social capital								
	Model 1			Model 2			Model 3		
	B	$\beta$	<i>p</i>	B	$\beta$	<i>p</i>	B	$\beta$	<i>p</i>
Constant	4.522		< .001	4.320		< .001	3.314		< .001
Age	-.074	-.076	.186	-.074	-.076	.094	-.027	-.027	.519
Gender	-.024	-.007	.901	-.038	-.011	.804	-.201	-.057	.164
Income	.020	.031	.597	.039	.061	.191	.018	.029	.508
Degree	-.028	-.047	.414	-.008	-.014	.765	.007	.012	.773
Gaming Intensity				1.381	.610	< .001	1.049	.463	< .001
Multiplayer gaming							-.005	-.006	.905
Solo gaming							-.101	-.114	.014
Communication							.204	.294	< .001
Spectating							.070	.093	.048
Information gathering							.095	.112	.023
$R^2$		.009			.378			.481	
$F$		.752 ( $p = .557$ )			41.580 ( $p < .001$ )			31.216 ( $p < .001$ )	
$\Delta R^2$		.009			.369			.103	
$\Delta F$		.752 ( $p = .557$ )			203.120 ( $p < .001$ )			13.347 ( $p < .001$ )	

## 5. CONCLUSION

The present study aimed to analyze the antecedents of US gamers' online bridging and bonding social capital. The first questions (RQ1a and RQ1b) asked, what is the relationship of individual demographic attributes and these social capital constructs; as the results show, age was a statistically significant, negative predictor of bridging social capital ( $\beta = -.088$ ,  $p = .019$ ), meaning that the younger the individual, the more online bridging social capital he/she will acquire. None of the other measured demographical indicators were statistically significant predictors of neither bridging nor bonding social capital. Hypotheses H1a and H1b proposed that Gaming Intensity is a statistically significant predictor of both bridging and bonding social capital, which was verified in both cases during the analysis. Its addition to both models considerably strengthened the explained variance; furthermore, its standardized beta coefficient was noticeably higher than all other predictors in both models. The second research question block (RQ2a and RQ2b) aimed to investigate the added quantity indicators of gaming-related behaviors to the models. In the case of online bridging social capital, communication with other gamers online ( $\beta = .131$ ,  $p = .004$ ) and spectating ( $\beta = .093$ ,  $p = .026$ ) both were statistically significant, positive predictors of the respective social capital construct. While the theoretical basis of communication frequency in the formation of weak social ties is widely discussed (Granovetter, 1973), underlying reasons behind the significant influence of spectating live streams and/or uploaded videos certainly requires further research. In the case of online bonding social capital, communication, spectating, and gaming-related information gathering appeared as statistically significant, positive predictors of the respective social capital construct, while solo gaming, on the other hand, was a statistically significant, negative predictor of it. Although spectating behavior and reading gaming-related news, blog posts, etc. is mainly a solitary action, the acquired information and experiences during both processes might be subjects of discussion during communication with other gamers; however, further studies are required to inspect the reasons behind these influences. The present paper restricted its sampling population to US citizens; however, the authors advocate the necessity of cross-country comparisons, sample sizes reaching representativity and the fundamentality of replications as well. The expansion of scientific knowledge in this research area would greatly contribute to our understanding of gamers, thereby being beneficial to the actors of the gaming industry and the field of behavioral economics as well.

## LITERATURE:

1. Aubrey, J. S., & Rill, L. (2013). Investigating Relations Between Facebook Use and Social Capital Among College Undergraduates. *Communication Quarterly*, 61(4), 479–496. <https://doi.org/10.1080/01463373.2013.801869>
2. Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of facebook “friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168. <https://doi.org/10.1111/j.1083-6101.2007.00367.x>
3. Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication practices. *New Media and Society*, 13(6), 873–892. <https://doi.org/10.1177/1461444810385389>
4. Ellison, N. B., Vitak, J., Gray, R., & Lampe, C. (2014). Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated Communication*, 19(4), 855–870. <https://doi.org/10.1111/jcc4.12078>
5. EMarketer. (2016). Number of online console gamers in the United States from 2014 to 2020 (in millions). Statista. Retrieved from <https://www.statista.com/statistics/521822/number-of-online-console-gamers-in-the-us/>

6. Fine, B. (2010). *Theories of Social capital: Researchers Behaving Badly*. Pluto Press.
7. Granovetter, M. (1973). The Strength of Weak Ties. *The American Journal of Sociology*.  
<https://doi.org/10.1086/225469>
8. Greenhow, C., & Burton, L. (2011). Help from My “Friends”: Social Capital in the Social Network Sites of Low-Income Students. *Journal of Educational Computing Research*, 45(2), 223–245. <https://doi.org/10.2190/EC.45.2.f>
9. Jiang, Y., & de Bruijn, O. (2014). Facebook helps: a case study of cross-cultural social networking and social capital. *Information Communication and Society*, 17(6), 732–749. <https://doi.org/10.1080/1369118X.2013.830636>
10. Johnston, G., & Percy-Smith, J. (2003). In search of social capital. *Policy & Politics*, 31(3), 321–334. <https://doi.org/10.1332/030557303322034974>
11. Johnston, K., Tanner, M., Lalla, N., & Kawalski, D. (2013). Social capital: the benefit of Facebook ‘friends.’ *Behaviour & Information Technology*, 32(1), 24–36. <https://doi.org/10.1080/0144929X.2010.550063>
12. Karikari, S., Osei-Frimpong, K., & Owusu-Frimpong, N. (2017). Evaluating individual level antecedents and consequences of social media use in Ghana. *Technological Forecasting and Social Change*, 123(June), 68–79. <https://doi.org/10.1016/j.techfore.2017.06.023>
13. Knorringa, P., & Van Staveren, I. (2007). Beyond social capital: A critical approach. *Review of Social Economy*, 65(1), 1–9. <https://doi.org/10.1080/00346760601170204>
14. Kwon, M.-W., D’Angelo, J., & McLeod, D. M. (2013). Facebook Use and Social Capital. *Bulletin of Science, Technology & Society*, 33(1–2), 35–43. <https://doi.org/10.1177/0270467613496767>
15. Lee, E., Kim, Y. J., & Ahn, J. (2014). How do people use Facebook features to manage social capital? *Computers in Human Behavior*, 36, 440–445. <https://doi.org/10.1016/j.chb.2014.04.007>
16. Leiner, D. J. (2019). SoSci Survey. Retrieved from <https://www.soscisurvey.de>
17. Li, X., & Chen, W. (2014). Facebook or Renren? A comparative study of social networking site use and social capital among Chinese international students in the United States. *Computers in Human Behavior*, 35, 116–123. <https://doi.org/10.1016/j.chb.2014.02.012>
18. Liu, H., Shi, J., Liu, Y., & Sheng, Z. (2013). The Moderating Role of Attachment Anxiety on Social Network Site Use Intensity and Social Capital. *Psychological Reports*, 112(1), 252–265. <https://doi.org/10.2466/21.02.17.PR0.112.1.252-265>
19. Molyneux, L., Vasudevan, K., & Gil de Zúñiga, H. (2015). Gaming Social Capital: Exploring Civic Value in Multiplayer Video Games. *Journal of Computer-Mediated Communication*, 20(4), 381–399. <https://doi.org/10.1111/jcc4.12123>
20. Newzoo. (2019). Leading gaming markets worldwide in 2019, by gaming revenue (in billion U.S. dollars). Statista. Retrieved from <https://www.statista.com/statistics/308454/gaming-revenue-countries/>
21. Peña, J., & Hancock, J. T. (2006). An Analysis of Socioemotional and Task Communication in Online Multiplayer Video Games. *Communication Research*, 33(1), 92–109. <https://doi.org/10.1177/0093650205283103>
22. Phua, J. (2012). Use of Social Networking Sites by Sports Fans: Implications for the Creation and Maintenance of Social Capital. *Journal of Sports Media*, 7(1), 109–132. <https://doi.org/10.1353/jsm.2012.0006>
23. Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York, New York, USA: Simon and Schuster.
24. Quan-Haase, A., & Wellman, B. (2004). How does the Internet affect social capital? In M. Huysman & V. Wulf (Eds.), *Social Capital and Information Technology* (pp. 113–132). Cambridge, MA: MIT Press.

25. Skoric, M. M., & Kwan, G. C. E. (2011). Platforms for mediated sociability and online social capital: The role of Facebook and massively multiplayer online games. *Asian Journal of Communication*, 21(5), 467–484. <https://doi.org/10.1080/01292986.2011.587014>
26. Solow, R. M. (1995). But Verify. *The New Republic*, 213(11), 36–39.
27. Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology*, 29(6), 434–445. <https://doi.org/10.1016/j.appdev.2008.07.002>
28. Steinkuehler, C. A., & Williams, D. (2006). Where Everybody Knows Your (Screen) Name: Online Games as “Third Places.” *Journal of Computer-Mediated Communication*, 11(4), 885–909. <https://doi.org/10.1111/j.1083-6101.2006.00300.x>
29. Su, C. C., & Chan, N. K. (2017). Predicting social capital on Facebook: The implications of use intensity, perceived content desirability, and Facebook-enabled communication practices. *Computers in Human Behavior*, 72, 259–268. <https://doi.org/10.1016/j.chb.2017.02.058>
30. Thomas, K. A., & Clifford, S. (2017). Validity and Mechanical Turk: An assessment of exclusion methods and interactive experiments. *Computers in Human Behavior*, 77, 184–197. <https://doi.org/10.1016/j.chb.2017.08.038>
31. Vanden Abeele, M. M. P., Antheunis, M. L., Pollmann, M. M. H., Schouten, A. P., Liebrecht, C. C., van der Wijst, P. J., ... Maes, F. A. (2018). Does Facebook Use Predict College Students’ Social Capital? A Replication of Ellison, Steinfield, and Lampe’s (2007) Study Using the Original and More Recent Measures of Facebook Use and Social Capital. *Communication Studies*, 69(3), 272–282. <https://doi.org/10.1080/10510974.2018.1464937>
32. Williams, D. (2006a). Groups and Goblins: The Social and Civic Impact of an Online Game. *Journal of Broadcasting & Electronic Media*, 50(4), 651–670. [https://doi.org/10.1207/s15506878jobem5004\\_5](https://doi.org/10.1207/s15506878jobem5004_5)
33. Williams, D. (2006b). On and Off the ’Net: Scales for Social Capital in an Online Era. *Journal of Computer-Mediated Communication*, 11(2), 593–628. <https://doi.org/10.1111/j.1083-6101.2006.00029.x>
34. Young, C., & Sterlitz, L. (2014). Exploring patterns of Facebook usage , social capital, loneliness and well-being among a diverse South African student sample. *Communicare: Journal of Communication Sciences in Southern Africa*, 33(1), 57–72.



## SELECTING TARGET MARKET USING 'THE ANALYTIC HIERARCHY PROCESS (AHP)' - MODEL: MARKET\_AHP

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### ABSTRACT

*Nations are working hard to extend their exports; resulting in increasing competitiveness of the world's economic environment. Therefore, selecting the appropriate target market is crucial. On the other hand, it is extremely difficult to identify proper target market due to the complexity of the problem having many attributes. Based on 'directional policy' matrix, there are two critical parameters to select proper target market. These are: 'target market attractiveness' and 'own competitive strength' in the market. But these two critical parameters have many objective and subjective variables. Some of these parameters can be measures such as target market size, annual growth rate, market share, distance etc. while some of these are subjective aspects and cannot be measures such as product market conditions, including tax regime, financial system, institutions and infrastructure quality, etc. The difficulty is to compare these subjective parameters. In order to solve similar complex problems 'The Analytic Hierarchy Process (AHP)' is introduced by Thomas Saaty (1980). The Analytic Hierarchy Process, by definition, is a method for formalizing decision making where there are a limited number of choices but each has a number of attributes and it is difficult to formalize some of those attributes. By reducing complex decisions to a series of pair-wise comparisons, and then synthesizing the results. So the AHP helps to capture both subjective and objective aspects of a decision. Additionally, AHP incorporates a useful technique for checking the consistency of the decision maker's evaluations, thus reducing the bias in the decision making process. The aim of this application is using 'The Analytic Hierarchy Process (AHP)' to identify the best set of target market for a selected product range and optimize export efforts.*

**Keywords:** *Analytic, Attractiveness, Competitive, Hierarchy, Market, Strength, Target*

### 1. INTRODUCTION

There is no doubt that nations are obliged to export to increase the welfare of their citizens. World economic environment is getting more and more competitive due to the fact that almost all nations are working hard in order to extend their exports. Thus selecting appropriate target market is crucial. If target market is not properly selected, marketing efforts can be wasted. On the contrary, it is extremely difficult to identify proper target market as the problem is too complex with many parameters. In order to overcome this constraint, 'expert opinion' is used to identify proper target market for a given product range. To solve this issue analytically, problem is defined as a two dimensional 'THE ANALYTIC HIERARCHY PROCESS (AHP)' model on 'DIRECTIONAL POLICY MATRIX'. This model is called 'MARKET\_AHP'<sup>1</sup>.

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<sup>1</sup> MARKET\_AHP is a trade mark for this model and all property-rights belong to Haluk Ünalı & Hifsi Soydemir.

## 2. DIRECTIONAL POLICY MATRIX

The Directional Policy Matrix (DPM) is a framework which can be used to classify and categories an organization's business activities in terms of its strengths, capabilities or market position, and the way it perceives the attractiveness of the markets. It can also be called as 'GE or McKinsey Matrix'. Based on the 'Directional Policy Matrix', there are two critical parameters to select proper target market. These are: 'Target Market Attractiveness (TMA)' and 'Own Competitive Strength (OCS) in the market'. For a given TMA and OCS pair, 'Directional Policy Matrix' provide different market behavior for a given product range as it can be seen from Figure.1.

Target Market Attractiveness ↑	Fight for Leadership	Try Harder	Double Or Quit
	Aim for Growth	Proceed with Care	Phased Withdrawal
	Cash Generator	Phased Withdrawal	Ready for Divestment
	← Own Competitive Strength		

Figure 1: Directional Policy Matrix (Tony Morden, 1993, p.119)

Marketing behaviors for a given TMA and OCS pair are as follows;

High TMA – High OCS:

- 'Fight for Leadership'
- Invest and increase strategic marketing activities in order to achieve market leadership.

High TMA – Moderate OCS:

- 'Try Harder'
- Increase competitive strength on attractive market.

High TMA – Low OCS:

- 'Double or Quit' (A gamble term)
- An agreement that the player who owes money will owe twice as much if they lose, but will owe nothing if they win.

Moderate TMA – High OCS:

- 'Aim for Growth'
- Growth marketing strategies is applied.

Moderate TMA – Moderate OCS:

- 'Proceed with Care'
- Manage selectivity for earnings strategies.

Moderate TMA – Low OCS:

- ‘Phased Withdrawal’
- Ready for managing withdrawal strategies.

Low TMA – High OCS:

- ‘Cash Generator’
- If there is no cash generation in this segment, it is assumed that managerial problems exist.

Low TMA – Moderate OCS:

- ‘Phased Withdrawal’
- Ready for managing withdrawal strategies.

Low TMA – Low OCS:

- ‘Ready for Divestment’
- Review for exit strategies and apply if and when applicable.

TMA and OCS have many objective and subjective attributes and extremely difficult to quantify them.

### **2.1. Target Market Attractiveness**

Market attractiveness is a concept that uses many factors to determine whether or not a market might be a profitable one for investment. As a term, it is mostly well-known for its inclusion in the Directional Policy Matrix, which was intended to help companies as well as nations to assess their product or business portfolios vis-à-vis their strengths. The more attractive a market is assessed to be, the higher the profit potential. The factors that contribute to market attractiveness can vary depending on what is important in question, but some common factors are as defined in the model: current market size, market growth rates, economic environment and Institutions & Infrastructure. Market size and growth rate are two basic factors when evaluating a market. The larger the market is, the more opportunities exist to sell a product. This means higher potential for profitability, even at a lower profit margin. In a market of any size, however, it is also important to consider the growth rate. A non-growing market means that the revenue potential is finite; while a market with a low growth rate is probably a saturated one, with many competitors in the same space, fighting for the same sales. This will lead to lower market share for all participants, as well as lower margins. The market growth rate can be considered in two ways; last known yearly growth rate as short run attractiveness and last five years growth rate as long run attractiveness. Economic environment consist of macroeconomic stability and product market. ‘Macroeconomic Stability Index’ in ‘The Global Competitiveness Report’ captures the level of inflation and the sustainability of fiscal policy. Moderate and predictable inflation and sustainable public budgets reduce uncertainties, set returns expectations for investments and increase business confidence—all of which boost productivity. ‘Product market Index’ in ‘The Global Competitiveness Report’ captures the extent to which a country provides an even playing field for companies to participate in its markets. It is measured in terms of extent of market power, openness to foreign firms and the degree of market distortions. Institution Index on ‘The Global Competitiveness Report’ captures; security, property rights, social capital, checks and balances, transparency and ethics, public-sector performance and corporate governance. Weak institutions continue to hamper competitiveness. Strong institutions are a fundamental driver of both productivity and long-term growth. Their benefits extend well beyond economics, affecting people’s well-being on a daily basis. Infrastructure Index on ‘The Global Competitiveness Report’ captures the quality and extension of transport infrastructure (road, rail, water and air) and utility infrastructure.

Better-connected geographic areas have generally been more prosperous. Well-developed infrastructure lowers transportation and transaction costs, and facilitates the movement of goods and people and the transfer of information within a country and across borders. Competition always exists in a market, and the competitors can determine how successfully another company can enter the same market space. Some things to consider about competitors are their size, how aggressive they are towards other competitors, any advantages they may have, number of competitors and how much market share they currently have. A market dominated by a strong single player might be unattractive because that competitor is likely to act aggressively toward a newcomer and it might dominate necessary contracts for suppliers or distributors. Alternatively, a marketplace with many small players may still be ripe for one to emerge as the dominant player. One other aspect of the model is to determine competition type in a target market; oligopoly, moderate or perfect competition. It is calculated based on competitors' market share.

## 2.2. Competitive Strength

Competitive strength is a weighted assessment of the strengths and weaknesses of an individual company or nations and their current and potential competitors. The factors that contribute to competitive strength can vary depending on what is particularly important in the specific context. But some common factors are the market shares of the target market, export growth rate on the target market, own import ranking and geographical distance to target market. The market share is a critical factor in order to assess competitive strength on target market. The larger the market share is the more strength and domination exists on target market for a given product. Similarly, higher export growth rate on target market indicates one's own strength in the target market for a given product range. The export growth rate can be considered in two ways; last known yearly export growth rate as short run strength and last five years export growth rate as long run strength. A geographical distance to target market is also important factor for transportation costs as well as timing on target.

## 2.3. Assessment of 'Directional Policy Matrix'

Three main choices of market strategy for a given product range can then be identified from the matrix, and their potential consequences can be analyzed.

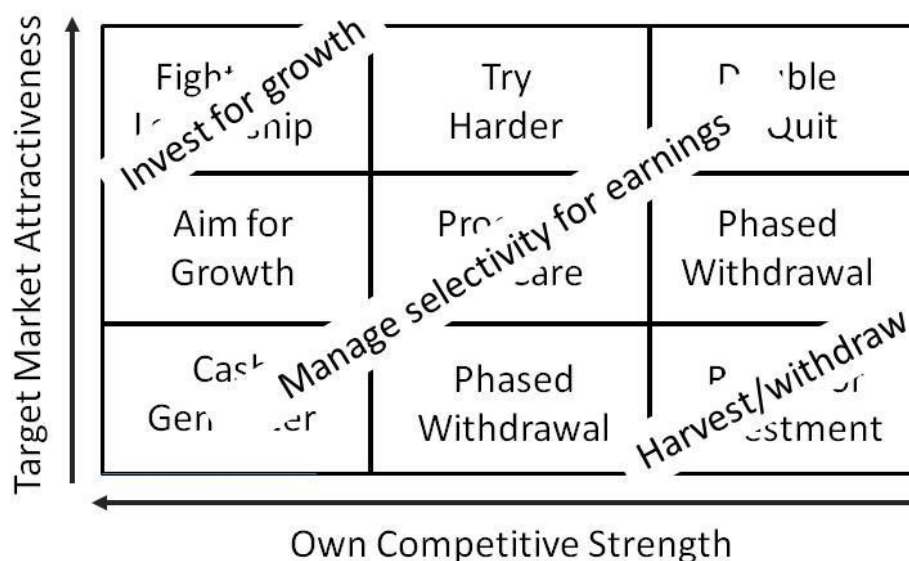


Figure 2: Directional Policy Matrix, (Tony Morden, 1993, p.119)

These strategies are;

- ‘Invest For Growth’ – for product / market activities located in the upper left quadrant of the matrix
- Manage Selectivity For Earnings – for product / market activities located from the bottom left to the upper right of the market.
- Harvest/Withdraw – for product / market activities located in the bottom right hand quadrant of the matrix

It is clear that target market for the companies for a given product range is the upper left quadrant of the matrix. The problem is to quantify two parameters, namely; 'Target Market Attractiveness' and 'Own Competitive Strength' with various objective and subjective components. Some of these can be measures such as target market size, annual growth, own market share, distance to target market etc. while some of them are subjective aspects, therefore cannot be measures like tax regime, political stability, macroeconomic stability, etc. The difficulty is to compare these subjective parameters. Currently, the process that is called 'subjective' and 'expert opinion' methods are the ones that are used as all the attributes are defined. However, 'expert opinions' may differ based on expert's background and trainings. To solve similar complex problems 'The Analytic Hierarchy Process (AHP)' is introduced by Thomas Saaty (1980).

### **3. ANALYTIC HIERARCHY PROCESS**

The Analytic Hierarchy Process is a method for formalizing decision making where there is a limited number of choices (candidate markets, here) but each has a number of attributes and it is difficult to formalize some of those attributes. By reducing complex decisions to a series of pair-wise comparisons, and then synthesizing the results; AHP helps to capture both subjective and objective aspects of a decision. In addition, AHP incorporates a useful technique for checking the consistency of the decision maker's evaluations, thus reducing the bias in the decision making process. The AHP considers a set of evaluation criteria, and a set of alternative options among which the best decision or target market in this context is to be made. It is important to note that, since some of the criteria could be contrasting, it is generally wrong to say that the best option is the one that optimizes each single criterion; but rather the one which achieves the most suitable trade-off among the different criteria. The AHP generates a weight for each evaluation criterion according to the decision maker's pair-wise comparisons of the criteria. The higher the weight, the more important the corresponding criterion. Next, for a fixed criterion, the AHP assigns a score to each option according to the decision maker's pairwise comparisons of the options based on that criterion. The higher the score, the better the performance of the option with respect to the considered criterion. Finally, the AHP combines the criteria weights and the options scores, thus determining a global score for each option, and a consequent ranking. The global score for a given option is a weighted sum of the scores it obtained with respect to all the criteria.

### **4. APPLICATION**

Example.1:

- Product: Product. A
- Scenario: North African Countries
- Candidate markets: Morocco, Algeria, Tunisia, Libya, Egypt

Source of data for all attributes:

- Target Market Attractiveness
  - Market size - Trademap

- Market growth rate (last year) - Trademap
- Market growth rate (last 5 years) - Trademap
- Economic environment - The Global Competitiveness Report
- Institutions and infrastructure - The Global Competitiveness Report
- Own Competitive strength
  - Target market share - Trademap
  - Own market growth rate (last year) - Trademap
  - Own market growth rate (5 years) - Trademap
  - Our import ranking on target - Trademap
  - Distance to target market - Geographic data

#### 4.1. Analysis results

Based on MODEL\_AHP for a given data for all attributes, analysis results can be seen from Table 3 and strategic recommendations from Table 4. Obviously, from market attractiveness perspective, candidate markets split into two segments. Algeria, Morocco and Egypt have relatively higher attractive market features. Alternatively, Tunisia and Libya have relatively low attractiveness for a given product range. From a competitive strength viewpoint, Algeria market has the highest value while Egypt has a lower value.

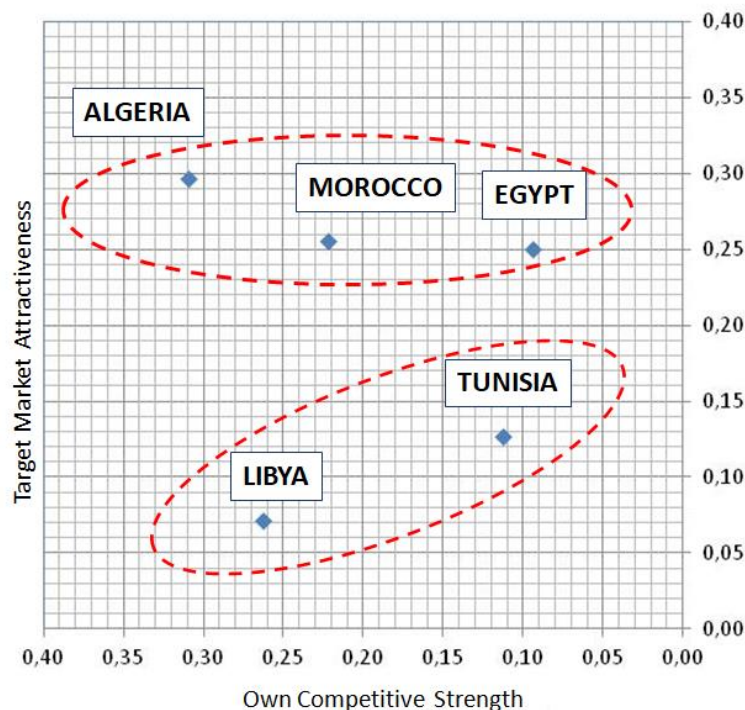


Figure 3: Scenario: North African Countries

Strategic recommendations for a given product range:

Algeria: 'Fight for Leadership' - Clear target market

- Morocco: 'Try Harder' - Increase competitive strength
- Egypt: 'Double or Quit' - Double for all resources or quit
- Libya: 'Phased Withdrawal' - Act with care and ready for divestment
- Tunisia : 'Phased Withdrawal' - Act with care and ready for divestment

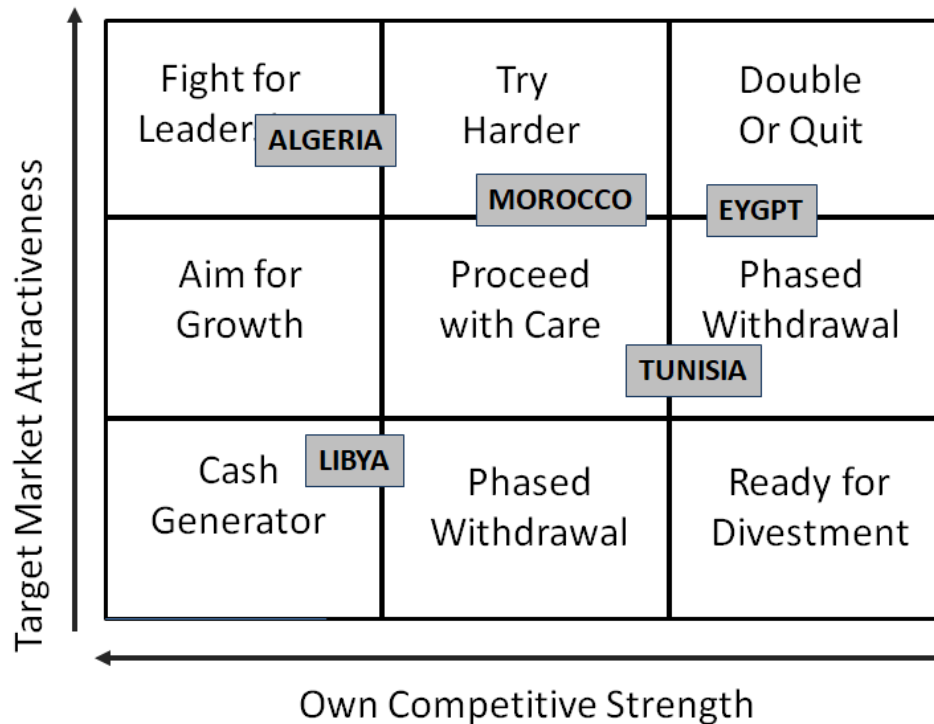


Figure 4: Strategies: North African Countries

Example.2:

- Product: Product. B
- Scenario: BRICS countries
- Candidate markets: China, India, Russia, Brazil, South Africa

Source of data for all attributes:

- Target Market Attractiveness
  - Market size - Trademap
  - Market growth rate (last year) - Trademap
  - Market growth rate (last 5 years) - Trademap
  - Economic environment - The Global Competitiveness Report
  - Institutions and infrastructure - The Global Competitiveness Report
- Own Competitive strength
  - Target market share - Trademap
  - Own market growth rate (last year) - Trademap
  - Own market growth rate (5 years) - Trademap
  - Our import ranking on target - Trademap
  - Distance to target market - Geographic data

#### 4.2. Analysis results

Based on MODEL\_AHP for a given data for all attributes, analysis results can be seen from Table 5 and strategic recommendations from Table 6. As it can be seen from market attractiveness perspective, candidate markets vary significantly. China market has relatively higher attractiveness, while Brazil market is not as attractive for a given product range. From competitive strength viewpoint, there are no significant competitive strength differences on candidate markets.



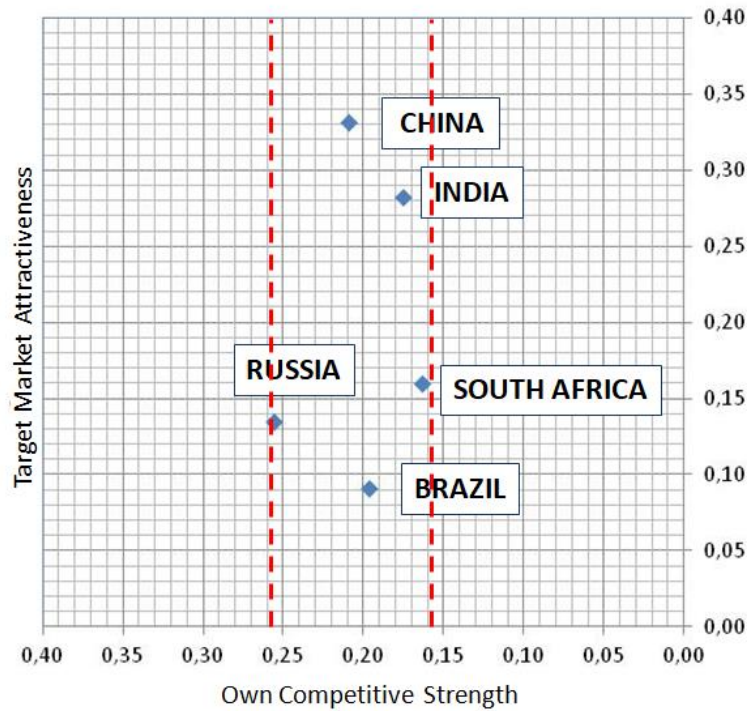


Figure 5: Scenario: BRICS Countries

Strategic recommendations for a given product range:

- China: 'Try Harder' - Increase competitive strength
- India: 'Try Harder' - Increase competitive strength
- Russia: 'Proceed with Care' - Act with care and follow opportunities
- South Africa: 'Proceed with Care' - Act with care and follow opportunities
- Brazil: 'Phased Withdrawal' - Act with care and ready for divestment



Figure 6: Strategies: BRICS Countries



## 5. CONCLUSIONS

All resources are limited and scarce, including export efforts such as strategic marketing activities. Hence, if the export efforts are not optimized and aims for a proper target market; the efficiency of export activities decreases. On the other hand, it is extremely difficult to identify proper target market as the problem is too complex with many parameters. It is good that 'THE ANALYTIC HIERARCHY PROCESS (AHP)' is widely used since the 1980's for solving such problems. Model MARKET\_AHP is introduced to identify proper target market by using 'THE ANALYTIC HIERARCHY PROCESS (AHP)'. The model can also be used to allocate strategic marketing efforts on preferred target markets.

## LITERATURE:

1. Unaldi, H. (2017). Global Export Analysis and Analytical Approach to Target Markets for Furniture Industry (Turkish paper). Istanbul: PARADIGMA CONSULTANCY for 'Istanbul Exporters Association (İİB)', Turkey.
2. Unaldi, H. (2018). Global Export Analysis and Analytical Approach to Target Markets for Paper Industry (Turkish paper). Istanbul: PARADIGMA CONSULTANCY for 'Istanbul Exporters Association (İİB)', Turkey.
3. Boyd, H, Walker, O. (1996). *Marketing*. Edinburgh: Pitman Publishing.
4. David, Fred. (1996). Strategic Management. New Jersey: Prentice Hall International, Inc.
5. Morden, T. (1993). Business Strategy and Planning. Berkshire: McGRAW-HILL.
6. Analytic hierarchy process – car example. Retrieved 10.02.2018 from Wikipedia.
7. Saaty, T.L. (1980). The analytic hierarchy process. New York: McGraw-Hill.
8. The Global Competitiveness Report, 2018, WORLD ECONOMIC FORUM.

## MEASURING COUNTRIES COMPETITIVENESS: WEAKNESSES AND POSSIBLE AREAS FOR IMPROVEMENT

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### ABSTRACT

*The article is devoted to the analysis of frameworks for measuring the World Economic Forum (WEF) and International Institute for Management Development (IMD) countries' competitiveness for their compliance with general provisions of the theory of measurement, the methodology of the theory of competitiveness and the content of its basic concept – the concept of a country's competitiveness. It is shown that, despite the decades-long debate around the concept of competitiveness and the lack of a satisfactory definition of this concept, in the opinion of many leading scientists, the frameworks for assessing the countries' competitiveness and other economic agents are available, actively developed and used widely in management practice. The analysis of these frameworks suggests that they are based on methodologically flawed definitions of the competitiveness concept, so the competitiveness indexes (Global Competitiveness Index (GCI) and World Competitiveness Index (WCI)) are not assessments of competitiveness as such, but generalized assessments of the competitiveness factors' system at best. A list of common elements of frameworks that significantly reduce the feasibility and accuracy of competitiveness measurement results, and which should be considered as focus of efforts to improve the frameworks for measuring the competitiveness of economic agents of any types, has been identified. Based on the methodologically rigorous definition of a country's competitiveness concept proposed by the authors, the article identifies the main properties of competitiveness as an object of measurement and the tasks arising from the nature of this attribute of the national economy, the solution of which would improve the scientific validity and reliability of countries' competitiveness assessments.*

**Keywords:** *bottlenecks, country competitiveness, framework, measurement, methodology*

### 1. INTRODUCTION

Categories of competition and competitiveness are among the most widely discussed in modern economic theory and used in managerial practice. Being a category of management science, the competitiveness of any economic agent, including the economic system of a country, is an object of management, which cannot be managed effectively without accurate and reliable measurements of a manageable attribute's level. The most figurative assessment in the field of the conceptual apparatus of the theory of competitiveness is given in [17, p. 1], the author of which has identified the problem as: "Competitiveness – 'corporate graffiti' invades economic

theory" and explained its essence as follows: "Even a casual observer of the practice and science of management will not fail to notice how a continuous flow of new concepts are born, become fashionable, and then disappear from management jargon. A recent article in Financial Times (1, p.10) suggests the term 'corporate graffiti' – or 'management graffiti' – to describe the unthinking use of buzz-words. Management language is 'opaque, ugly, and cliché-ridden', FT claims" [17, p. 1; 18, p. 24]. Thomas Hatzichronoglou в [8, p. 17] believes that "One of the difficulties with which those seeking to analyse international competitiveness are confronted right from the start is that there is no agreement on how to define it. The term competitiveness may be used with contradictory meanings in various passages of the same article or report. This view, expressed by the US Office of Technology Assessment, is broadly shared by all the experts". Christian Ketels stresses in [15, p. 7]: "The term competitiveness has been intensively dissected in the academic literature ever since it became a focus of the policy debate in the late 1980s and early 1990s. ... The different views on what competitiveness is and what value it has for policy that emerged at the time were never really reconciled. ... Definitions of abstract concepts like competitiveness are never true or false. They can as conceptual tools only be evaluated with regards to their ability to shed light on the particular issues that they are being proposed to address. This somewhat abstract but fundamental insight has often been lost in the debate about competitiveness as a concept". Karl Aiginger ([1, p. 174]) writes: "The competitiveness of nations is one of the most intensively discussed issues in politics. Economic investigations on this issue differ in content, in scope and most importantly according to the definition of competitiveness". Nikolaos Alexandros Psogogiorgos and Theodore Metaxas also speak about the complexity and contradictory points of view on competitiveness in the paper [3, p. 76]: "Competitiveness is a multidimensional and dynamic concept, a term wide and multileveled. It also makes it possible to distinguish at different levels depending on the priorities and objectives set each time. However, the measurement of real competitiveness in terms of productivity and conceptual flexibility that allows the formulation of alternative approaches seems to repel any objections to the concept of competitiveness. Unlike the definition of macroeconomic competitiveness for which there is a broad agreement among scholars, the concept itself of national or macroeconomic competitiveness raises many concerns. It seems to be a vague concept with greatly disputed importance. Competitiveness at the national level has not key features but there is also no consensus on whether ultimately this concept has meaning or not, namely if nations actually compete with each other or not". "America cannot address its economic prospects without a clear understanding of what we mean by competitiveness and how it shapes U.S. prosperity. The concept is widely misunderstood, with dangerous consequences for political discourse, policy, and corporate choices that are all too evident today" – declares M. Porter and Jan W. Rivkin [16, p. 55]. Savchuk S.I. in the introduction to his book "Fundamentals of the Theory of Competitiveness" [19, p. 6] notes: "For representatives of economics and the theory of competition, in particular, unlike representatives of exact natural and technical sciences, such as, for example, mathematics, astronomy, physics, chemistry and others are characterized by a significantly less "reverential" attitude to the conceptual and categorical apparatus of the theory. This is most clearly manifested in the absence of incentives to ensure, with the development of the theory, greater accuracy and rigor of basic concepts' definitions considering the instability of such concepts system itself, the insufficient expression of the cumulative effect, according to which the basic core of the conceptual system remains stable and with the development of theory enriched ("overgrown") with new concepts, retaining the features of an integrated, coherent system. As a consequence of such trends in the development of economic theory, the definitions of its basic concepts aren't becoming more accurate and complete over time, but continue to be debated for many decades". However, despite the fact that the concept of competitiveness of economic agents is scientifically poorly defined, there are numerous frameworks for measuring competitiveness, among which the most well-known and

authoritative methods are WEF and IMD, which are used for decades to compare the competitiveness of many countries [10, 21]. This situation isn't satisfactory in terms of assessing current level of the theory of competitiveness development, methodology and tools for measuring competitiveness, which determines the relevance of the analysis, in particular, using WEF and IMD frameworks, known approaches to measuring countries' competitiveness for quality and feasibility of competitiveness assessments and defines the purpose of this study.

## **2. THE MAIN RESULTS OF THE RESEARCH**

### **2.1. The concept of competitiveness as a theoretical basis of measurements**

Obviously, the analysis of existing and development of new approaches to the measurement of the nations' competitiveness should be based on a methodologically rigorous definition of the country's competitiveness concept, which clearly identifies the object of measurement. From this point of view, the interpretation of the countries' competitiveness concept by the developers of the WEF and IMD frameworks is quite vulnerable to criticism. World Economic Forum defines economic competitiveness as follows: "We define competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be reached by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time" [21, p. 317]. There are serious complaints about formulation of the competitiveness definition. Firstly, a country's competitiveness is defined through poorly defined entities (this is a typical mistake when defining concepts [7]). Secondly, according to such definition, the competitiveness is anything and everything that affects the productivity of a country. But everything that affects a country's productivity is nothing more than a set of productivity factors. Consequently, the concept of competitiveness is replaced by another concept in this definition, that is a set of productivity factors' concept, which is methodologically unacceptable. Thirdly, such definition is its unconstructiveness from the point of view of measuring competitiveness problem, since, in strict accordance with definition, it makes the task of measuring competitiveness more difficult or even impossible to measure institutions, policies, factors and their entirety. Although the authors of this framework emphasize the decisive role of productivity in ensuring the prosperity of the economy, the totality of prosperity factors of the economy as a whole and, moreover, factors that shape the standard of living of citizens, remains outside the scope of this definition and, as a result, is not fully reflected in the indicators' system on which the measurement of the countries' competitiveness is based. According to IMD documents (see, for example, [9, 10]), WCY developers do not have a holistic concept of the economic agents' competitiveness, including the competitiveness of a single country. So, in particular, in [10] there are formulations of the definition of certain varieties of competitiveness, which are incompatible between each other:

- global competitiveness can be understood as a process in which advanced levels of competitiveness are achieved at different levels, that is, at firm, regional and national levels;
- international competitiveness can be defined as a process in which higher levels of competitiveness are achieved at different levels, that is, at firm, regional and national levels;
- country competitiveness refers to the ability of the government to generate prosperity for its people.

As can be seen, global and international competitiveness is defined as a process that does not correspond to any of the modern concepts of competitiveness. At the same time, a country's competitiveness is rightly defined as a certain ability, but this ability is for some reason

attributed to the government, but not to the national economy, in which, as in the system, the government is only one of the elements. In [9], a number of well-known definitions of competitiveness of economic agents at various levels are given, but WCY authors' own position in relation to these definitions is not announced. There is also no argument in favour of the competitiveness concept interpretation accepted by methodology authors for measuring the competitiveness of countries. Unlike the authors of GCR [10], the brochure on the methodology of analyzing the competitiveness of countries [11], followed by the authors of WCY, does not explicitly define the concept of a country competitiveness and directly indicates that the subject of analysis are factors of competitiveness. This position excludes the possibility of assessing the degree of compliance of the factors' system to be assessed to the nature of the measurement object – the country's competitiveness as one of the generalized characteristics of the national economy. Thus, based on the above, it can be concluded that the theoretical foundation itself (interpretation of the national economy competitiveness concept), on which the most popular frameworks for measuring the competitiveness of countries are formed, is highly debatable.

## **2.2. Competitiveness frameworks: main bottlenecks**

In the further analysis of these methodological approaches to measuring the competitiveness of countries, the authors of this study adhere to the position contained in [2, 4, 5, 6, 19, 20], according to which the competitiveness of a country is defined (as specified by the authors of this paper) as the ability of such a system to create in a competitive environment the population's quality of life without outside assistance on a long-term basis. Such interpretation of this concept's content is based on the recognition as the main goal of the state functioning (the country's economic system) ensuring acceptable population quality of life, and the very attribute of competitiveness as a latent attribute (the ability), not available for direct observation and measurement [4, 5, 19, 20]. The frameworks for measuring the countries competitiveness developed by WEF and IMD [11, 21] are based on hierarchically ordered indicators system proposed by their developers, as well as methods for constructing an integral competitiveness indicator based on a system of primary indicators (GCI and WCI). As the analysis of these indicators composition shows, they characterize either (a) the state of certain factors of competitiveness, or (b) actual results of activity and the state of the country's economy, or (c) actual trends in the results and parameters of the national economy state as noted in the preceding paragraphs. There are quantitative indicators among such indicators, i.e. indicators measured in interval scales, and quality indicators – indicators measured in ordinal scales. Some of these indicators are the result of economic or statistical analysis, others – the result of expert assessment. The main tool for constructing generalized indicators and, eventually, the integral indicator (index) of competitiveness is averaging using weights determined by an expertise. The procedure of such averaging is dictated by the hierarchy of the indicators system taken into account when assessing the countries competitiveness. In this case, ordinal indicators are pre-digitized using procedures that contain elements of expert assessment. Based on above, the following can be concluded. The competitiveness index itself is not an assessment of such an attribute as a country's competitiveness. The specified index is a generalized (integral) assessment of the indicators system underlying the assessment. And this is the first and one of the most significant bottlenecks of the analyzed frameworks, their methodological weakness. In such conditions, i.e. in terms of indirect (through a system of indirect attributes and corresponding indicators) assessing the national economy competitiveness, the key task is to make a scientifically based choice and form a classification of these attributes (indicators), suggesting evidence of the countries competitiveness level dependence on each candidate for inclusion in the system such indicators in general, justification of choice of significant classification attributes. It follows from the definition of a country competitiveness concept considered in this study, that such an analysis should be based on: (i) a scientifically strict

definition of the concept of citizens' quality of life; (ii) a system of factors affecting the citizens' quality of life, with the allocation of a subsystem of state-controlled factors; (iii) a system of factors affecting the state's ability to shape the citizens' quality of life. Description of the discussed frameworks for assessing the competitiveness of countries does not contain a comprehensive presentation of the solution to this problem, which does not allow to consider the indicators (attributes) underlying them as fully justified. This circumstance is another bottleneck of these approaches. Obviously, an important independent scientific task is the proof of justification of considering the integral estimates of primary indicators as the assessments of the countries' competitiveness as a whole. The lack of such evidence can also be regarded as a bottleneck of these methods. An important bottleneck of well-known frameworks for measuring the competitiveness of countries is the mechanism for constructing group (generalized) and integral indicators of competitiveness in general. As noted above, such a mechanism is weight-based averaging. As is well known, averaging by default assumes full (for additive average) or partial (for multiplicative average) interchangeability of averaged indicators. Thus, averaging presupposes the existence in some way of the marginal substitution rate between indicators. However, the systems of primary indicators of countries' competitiveness include indicators of a qualitatively different nature (see, for example, indicators of Property rights, Quality of air transport infrastructure, Trade tariffs, Broadband Internet subscriptions, etc. [21]), which are basically incommensurable with each other. In fact, there are no objective reasons to believe that reducing the value of the Quality of roads indicator by  $\Delta_1$  units can be offset, from the point of view of maintaining the level of the integral competitiveness index, by constant increase in the value of the Domestic market size index by  $\Delta_2$  units. It follows that it is implicitly assumed in the relevant calculations that the norms of marginal substitution between all indicators are defined, and they are implemented using weighting voluntary (by experts). This circumstance calls into question the feasibility of the integral indicators of the countries' competitiveness, which is, as noted above, one of the most important bottlenecks of these methods. The interval and ordinal indicators sharing and averaging should also be considered as a bottleneck of the analyzed frameworks for assessing the competitiveness of countries. It should be noted that digitization of ordinal indicators (regardless of the method of digitization) does not change the nature of indicators, does not eliminate the problems of establishing equivalence between the levels of various indicators and the admissibility (in terms of economic sense) of averaging interval and ordinal values. The national economy of any country is an integral economic system. The competitiveness of the national economy as one of its attributes at the highest level of the hierarchy is a function of the entire set of factors influencing or capable to influence on the level of competitiveness, is the result of the joint influence of the specified set of factors. There are no mechanisms, in the considered frameworks, for direct consideration of the factors (indicators) interaction used in measuring the level of countries competitiveness, which is one reason for the occurrence of errors in measuring the competitiveness of countries using the GCI and WCI competitiveness indexes. It is well known that the results of applying the so-called resource and factor approach (this very approach is implemented in the considered frameworks) and the system approach to the measurement of complex attributes of economic agents differ significantly [4, 12, 13, 14, 19]. In this regard, the noted feature of these frameworks should be considered as one of the most significant bottlenecks in such systems for measuring the competitiveness of countries. One of the most important indicators of the quality of any measurement is the reproducibility of measurement results. The use of expert assessment methods as part of measurement procedures, including the stages of indicators system forming, digitizing ordinal indicators and determining weights for averaging, avoids the possibility of obtaining the same results when changing experts' group. This circumstance obviously represents a bottleneck of the methods of this type, indicating the impossibility of providing the necessary quality of measurements in such measurements.

### 2.3. Methodological backgrounds ensuring quality of measurements of countries competitiveness

As noted above, a mandatory prerequisite for methodologically correct measurements of the countries' competitiveness is a methodologically rigorous, unambiguous and constructive definition of the countries' competitiveness concept, determining the basic properties of competitiveness as an object of measurement. The definition of a country's competitiveness, formulated by the authors of this article earlier, can serve as such a basis. In accordance with such ideas, competitiveness as a measurement object has the following properties:

- it is the ability of a country (national economy) to ensure (form, maintain, improve) the quality of life of its citizens (on a long-term basis in a competitive environment);
- it is an absolute attribute of the national economy, the availability of which is determined only by the fact of the existence (and functioning) of the economic system, it is an inherent property of this system;
- it is a latent attribute of the national economy that is not available for direct observation and measurement;
- it is an interval attribute, i.e. an attribute defined at a certain long period of time.

It follows from the absolute nature of competitiveness that there is a possibility in principle to measure the competitiveness of each individual country followed by comparing the competitiveness of countries in terms of the integral index of competitiveness. Due to the latent nature of competitiveness, measuring its level is possible only on the basis of indirect attributes. Such attributes may include: (a) actual results (in the broadest sense) of the national economy functioning (the competitiveness past and present actual manifestations); (b) the present and the future state of competitiveness factors). It follows from the interval nature of competitiveness, that estimates of competitiveness should have a predictive character, i.e. should represent a forecast of the degree of achievement of the national economy main goal of the functioning – ensuring (one or another) the citizens' quality of life in a competitive environment in the future (on a long-term basis). Obviously, such forecasts should be based on the forecast (forecast trajectories) of the internal and external environment state of the national economy as a dynamic system. Taking into account this circumstance, one more bottleneck of the analyzed frameworks can be noted: their preferential focus on the current state of competitiveness factors, as well as the absence of any recording mechanisms when constructing integral estimates of competitiveness, changes in the state of the country's economic system and its external environment in the future. From the above characteristics of ability, which is competitiveness, it follows that in order to measure such ability it is necessary to be able to measure the level of quality of life of a country's population. Assuming that this task is solved, which is actually far from being the case, as evidenced by the review of the relevant literature, the problem of developing scientifically based methods for measuring the competitiveness of countries suggests solving the following set of tasks:

- determination all factors of a country's competitiveness (such factors include factors that may affect the ability of a country's economy to achieve its main goal of functioning);
- systematization of these factors and the development of competitive factors classifiers;
- identification of a subset of manageable factors of competitiveness, which are potential objects of government management;
- development of methods for measuring the state of competitive factors, including the choice of scales and units of measurement;
- development of methods and forecasts for changes in the factors of internal and external environment of national economies in the future;

- development of scientifically based methods for constructing integral estimates of a country's competitiveness level based on estimates of primary and generalized competitiveness factors (the so-called problem of convolution of particular indicators into an integral one).

### 3. CONSLUSION

A mandatory requirement for the measurement of any property of economic systems is a strict scientific definition of this property as an object of measurement. At present, a paradoxical situation has developed in the theory of competitiveness. Despite a long period of ongoing debates, scientists still have not developed generally accepted ideas about the content of the competitiveness concept, and the existing definitions of this concept usually do not satisfy the basic methodological requirements for the definitions of scientific concepts. At the same uncertainty of competitiveness as an object of measurement did not prevent the development of numerous frameworks for measuring the competitiveness of various economic agents and their use in managerial practice. The best known among such frameworks are the frameworks of measuring the competitiveness of countries developed by the The World Economic Forum and the International Institute for Management Development, which are widely used by governments of different countries. The methodological analysis of the WEF and IMD frameworks suggests that they are based on poorly defined, from methodological positions and non-constructive from the positions of measurement theory, definitions of a country competitiveness concept. As a result, the countries' competitiveness indicators systems, which are used as the basis for calculating countries' competitiveness indexes (GCI and WCI indexes), remain controversial, and the integral competitiveness indicators themselves are generalized estimates of these primary indicators, rather than their own competitiveness as an attribute of their national economies. The most vulnerable points of WEF and IMD frameworks include the mechanism of aggregation of estimates of primary factors used in them into an integral index based on averaging techniques, digitizing ordinal indicators and expert estimation. This casts doubt on the economic meaning of the estimates themselves, their accuracy, as well as the reproducibility of the calculations as one of the most important indicators of the measurements' quality. The list of bottlenecks of frameworks for measuring the countries' competitiveness of countries, identified as a result of the research, points to priorities in the development of the theory of competitive comparisons, possible ways to increase the scientific validity of measurement methods and the quality of the results.

### LITERATURE:

1. Aiginger, K. (1988). A framework for evaluating the dynamic competitiveness of countries. *Structural Change and Economic Dynamics*, Vol. 9, 2, 159-188.
2. Aiginger, K., Bärenthaler-Sieber, S. & Vogel, J. (2013). *Competitiveness under new perspectives*. (WWWforEurope Working Paper No. 44). Vienna: WIFO.
3. Alexandros, P. N. & Metaxas, T. (2016). Porter vs Krugman: History, Analysis and Critique of Regional Competitiveness. *Journal of Economics and Political Economy*, Vol. 3, 1, 65-80.
4. Alyokhin, A. B. (2011). Measuring competitiveness at the national and microeconomic levels: methodological aspects. *Khmelnysky National Bulletin of Khmelnytsky National University. Economical science*, Vol 4, 2, 7-12 [in Russian].
5. Brutman, A. B. (2018). Category of competitiveness as a generalization of the enterprise's economic potential concept. *Business Inform*, 2, 127-134 [in Russian].
6. Fagerberg, J. (1996). Technology and competitiveness. *Oxford Review of Economic Policy*, Vol. 12, 3, 39-51.
7. Getmanova, A. D. (2012). *Logics*. Moscow: Knorus [in Russian].



8. Hatzichronoglou, T. (1996). Globalisation and Competitiveness: Relevant Indicators. *OECD Science, Technology and Industry Working Papers*, No 1996/05, Paris: OECD Publishing.
9. IMD. *Defining International Competitiveness*. Retrieved 03.09.2019 from <https://www.imd.org/wcc/world-competitiveness-reflections/international-competitiveness>
10. IMD. *Global Competitiveness Report*. Retrieved 03.09.2019 from <https://www.imd.org/wcc/world-competitiveness-reflections/global-competitiveness-report/>.
11. IMD. *Methodology and principles of analyses. IMD Competitiveness Yearbook*. Retrieved 03.09.2019 from <https://www.imd.org/globalassets/wcc/docs/methodo/methodology-yearbook-presentation2.pdf>.
12. Karapeychik, I. N. (2013). Resource and factor concept of potentials: object and evaluation methodology. *Contemporary Scientific Bulletin*. 23 (162), 11-20 [In Russian].
13. Karapeychik, I. N. (2013). Factor approach to the assessment of potentials: constraints and opportunities. *Ural Scientific Bulletin*, 6 (54), 42-57 [in Russian].
14. Karapeychik, I. N. (2013). Factor and systematic approaches to the measurement of the enterprises' potentials: a comparative model analysis. *Ural Scientific Bulletin*, 15(63), 100-117 [in Russian].
15. Ketels, C. (2016). *Review of Competitiveness Frameworks*. Dublin: National Competitiveness Council.
16. Porter, M. E. & Rivkin, J. W. (2012). The Looming Challenge to US Competitiveness. *Harvard Business Review*, 90 (3), 55-62.
17. Reinert, E. S. (1994). *Competitiveness and its predecessors – a 500-year cross-national perspective*. (Step rapport/report, R-03/1994). Oslo: STEP.
18. Reinert, E. S. (1995). Competitiveness and its predecessors – a 500-year cross-national perspective. *Structural Change and Economic Dynamics*, Vol. 6, 1, 23-42.
19. Savchuk, S. I. (2007). *Fundamentals of the Theory of Competitiveness*. Mariupol: Renata.
20. Shpak, S. O. (2018). On the temporal nature of competitiveness, economic potential and development potential. *Bulletin of the National Technical University "KhPI". Series: Economic sciences*, 19, 11-18 [in Russian].
21. World Economic Forum. (2017). *The Global Competitiveness Report 2017-2018*. Geneva: World Economic Forum.

# MANAGEMENT AND OWNERSHIP OF THE MARITIME CONTAINER TERMINAL AS AN ENHANCER OF COMPETITIVENESS – SELECTED ISSUES FOR RESEARCH AND APPLICATIONS

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## **ABSTRACT**

*Nowadays, global economy is a very complex structure of different links between partners across the supply chains. Within these chains the main role is played by maritime ports, which are facilitators of global trade. In the last decade the international seaborne trade has noted growth of approximately 33,6 per cent, with an average increase of 3 per cent yearly. In the last decade, the global containerized trade has noted growth of approximately 55,5 per cent, with an average pace of growth of about 5 per cent yearly. Due to the importance of the container transport, the maritime container terminals are crucial part of the global economy. The management model of container terminal is connected with the port management model, which influences on the duties and the autonomy of the terminals. Due to the volatile market conditions expressed through mergers and acquisitions and establishing strategic alliances there was an evolution in the role of port authorities, which need to promote their location as an attractive hub in the global supply chain. The purpose of this paper is to determine the possibility to verify, based on critical literature review and empirical data from polish ports, the relation between container terminal management model and the container throughput. The main research limitation is the small quantity of the sample and lack of including other parameters, such as strategy or technical aspects, in the study.*

**Keywords:** *port management model, landlord model, maritime container terminal, maritime container terminal ownership structure*

## **1. INTRODUCTION**

The supply chains, which are the main part of the global trade, are very complex structures with different links between participants at various levels of the chain (Pryke et al., 2009). Within these chains the main role is played by the maritime transport (UNCTAD, 2018; WTO, 2018). This situation influences on the significance of the maritime ports, as an essential transshipment points, which integrates other transportation modes. The proper management of the port can be perceived as a crucial factor of efficiency of the supply chains. The containerized trade is accounted for 17 per cent of global seaborne trade (UNCTAD, 2018). The maritime container terminals are an essential part of global economy and the proper and efficient management can be perceived as an source of gaining competitive advantage. The maritime container terminals plays important role in the global trade, these objects functioning as an integrator of the international container trade. Moreover terminals are also a bottleneck of the maritime supply chains, so the efficiency of the terminals is essential in a proper and effective flows of cargo. The efficiency of the maritime container terminal is determined by the dependency and autonomy of the terminal, which is situated in the port area. Due to the above stated facts, the operating ability of the maritime container terminal is determined by the management model implemented in the port. In the literature there are studies concerning the ownership structure of the terminals (e.g. (Farrell, 2012)), as well as port management models (e.g. (Suárez-Alemán et al., 2018)), although there is a gap of knowledge concerning the relation between port management model, which influences on the terminal management model, and container throughput.

This paper is first that make an attempt to define the possibility of existence of this relation. The purpose of this paper is to determine the possibility to verify the relation between ownership structure and management of the maritime container terminal and the container throughput. The above stated purpose is carried out through a research process, which covers general research methods, such as critical literature review and methods of logical reasoning.

The paper is divided as follows:

- Section 2 contains the literature review concerning port management models;
- Section 2 provides brief characteristics of the maritime container trade and management and ownership structure of maritime container terminals;
- Section 4 presents the polish container terminals;
- Section 5 includes final conclusions.

## 2. PORT MANAGEMENT MODELS

Port provides a crucial interface between land and sea, it is a geographical area, where ships are brought alongside land to load and discharge cargo (Stopford, 2009). The port authority is the organization responsible for providing various maritime services required to bring vessels to the port (Stopford, 2009). The complexity of the cargo and vessel dimensions implies the complexity of the port infrastructure. The implemented management model influences on the responsibilities and the duties of the port authority and the terminal operators in the context of providing and developing suitable infrastructure and superstructure. Thus port management model influences on the maritime container terminal autonomy and operating abilities. The World Bank provides a Port Reform Tool Kit (WPRTK), in which Module 3 is dedicated to provide a typology of models in use and general principles to be observed in planning to those models. This module outlines the four main port administration models: the Service Port, the Tool Port, the Landlord Port and the Private Service Port. It also assesses the strengths and weaknesses of each model. The main distinction between particular models is the responsibility for providing services (port labor), ownership of the infrastructure and superstructure (public or private sector), and other function of ports (Brooks & Cullinane, 2007). The choice of implemented port management model is determined by the ways the port is organized, structured and managed. On the other hand (Baltazar & Brooks, 2007) identified five organizational models associated with port reform approaches, moving from the most centralized public ownership to completely private ownership. Similarly the ESPO (Verhoeven, 2010) also identified five governance models, namely:

- Hanse – e.g. port authorities from Sweden;
- New Hanse – e.g. port authorities from Poland;
- Anglo-Saxon – e.g. port authorities from United Kingdom;
- Latin – e.g. port authorities from France;
- New Latin – e.g. port authorities from Croatia (Verhoeven, 2010).

However above mentioned models are governance models (Brooks & Pallis, 2012) and the WPRTK reflect the broad allocation of responsibilities for port activity but it does not indicate full set of indicators that can be found in the full governance model (Brooks & Cullinane, 2007). Port management models proposed by the World Bank in the Port Reform Tool Kit are presented in the table 1.

*Table following on the next page*

*Table 1: Basic port management models (Adapted from World Bank Port Reform Toolkit, Module 3. Available at: <https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/index.html>)*

Type	Infrastructure	Superstructure	Port labor	Other functions
Public service port	Public	Public	Public	Majority public
Tool port	Public	Public	Private	Public/private
Landlord port	Public	Private	Private	Public/private
Private service port	Private	Private	Private	Majority public

### 2.1. Public service port

Used in many developing countries, where port is rather small but with a strong growth. There is a direct involvement of the port authority in all operations and development plans. This is predominantly public administration model, where public entity, port authority, owns land, as well as all available assets. Port authority is responsible for performing all regulatory and port functions, such as vessel handling and stevedoring operations. All investments in the infrastructure, including dredging and other that improves nautical access, are also performed by the port authority. The main advantage of adopting this model is the fact that superstructure and cargo handling development are the responsibility of the same organization. Although due to limited role (or no role) of private sector in the operations, there is lack of internal competition, which leads to inefficiency. The dependence on government budget creates threat of wasteful use of resources, underinvestment, lack of innovation and lack of user or market oriented operations.

### 2.2. Tool port

In this model there is a division of operating responsibilities between public and private sector. The port authority, which represents the public sector, owns, develops and maintains port infrastructure, port administration, nautical infrastructure and management, as well as superstructure buildings and equipment. The public sector is responsible for investments in port infrastructure and equipment, which avoids the duplication of facilities. Although due to the jointly share of the cargo handling services, there is a risk of conflicting situations. Moreover private operators do not own major handling equipment, therefore they have limited chance to develop, which causes instabilities and limits future expansion. Therefore the private operators are usually small companies, the strong stevedoring companies are seldom found in the tool ports.

### 2.3. Landlord port

The landlord model is the most common model of allocating public versus private responsibilities in the port. In this model port authority own land, while the infrastructure is leased to private operators for long period of time (time of concession is usually around 50 years). The public sector is responsible for maintaining and developing the port infrastructure: port administration, nautical infrastructure, nautical management and general port infrastructure such as access roads, berths, wharves etc. The private sector executes cargo handling operations, maintains and develops the cargo handling equipment and other superstructure. Moreover their responsibilities are also connected with employment of stevedoring labor. In this model the cargo handling operators also owns the equipment, therefore the operational planning is likely to result in more appropriate superstructure investments, which can be more responsive to the volatile market requirements.

## **2.4. Private service port**

In this model the public sector is no longer interested in the port development. The private sector own land, is responsible for maintain and develop of the port administration, nautical management and infrastructure, port infrastructure, superstructure, cargo handling and other port functions, such as towage, mooring or dredging. This model is widely used in the United Kingdom (Baird, 2002, 2013; Baird & Valentine, 2007). Due to the fact that private sector is market-oriented in private service port there is a maximum flexibility of investments and the strategic location of port land may enable the private operator to develop new scope of activities and enters on the new markets. However the market-oriented approach may cause developing monopolistic behavior, moreover the government loses its ability to develop long-term economic policy with respect to the port business and in case of necessity to redevelop the port area, government has to spend money to buy back the port land. The ownership of the port area also creates the risk of speculation by private owners.

## **3. BRIEF CHARACTERISTICS OF THE MARITIME CONTAINER SHIPPING MARKET**

### **3.1. Maritime container trade**

Introducing containers to the global trade is considered as one of the factors of dynamic globalization processes in the 20<sup>th</sup> century (Bernhofen et al., 2016). The possibility to transport almost every type of cargo in a box created great opportunity for shippers, ship companies and ports. Nevertheless it also created a need for adjust and develop infrastructure and superstructure suitable for this new type of transport (Lee & Song, 2017). The adaptation of ports, vessels and inland infrastructure and superstructure has become one of the main factors of achieving competitive advantage. The container revolution created a need for readjustment in the cargo handling equipment in ports, as well as in vessels, which significantly reduced the transportation costs. The growth of the new transportation branch generated the opportunity to capture and strengthen market position. This situation was expressed in joining new participants to the market, such as specialized container vessels or specialized terminals: container terminals. Shipping companies adjusted their activity and became the beneficiary of above mentioned market changes (Charlampowicz, 2018b). In the 21<sup>st</sup> century enterprises, in order to further increase their market share, started to establish strategic alliances, that led to risk sharing, knowledge sharing and increased efficiency of the provided services (Charlampowicz, 2017; Rau & Spinler, 2017). These circumstances led to the more concentrated market, where few operators will dictate the conditions for other participants (Hirata, 2017; Charlampowicz, 2018a, 2018b). The volatile market conditions leads to cooperation among participants of the alliances (Balci et al., 2018), however participants are competing with each other (Lee & Song, 2017). The maritime container shipping market has witnessed unique transformations unheard in any other transportation sector. The oversupplied market (MDS Transmodal Container Shipping Bulletin November 2017, 2017; UNCTAD, 2017), characterized by the mega-container vessels, and comparatively weak demand growth effected in the need for consolidation, rationalization and further cost-cutting actions (UNCTAD, 2017, 2018; Charlampowicz, 2018a). To achieve these goals shipping companies acted in twofold: subjective capital integration and organizational and functional form expressed through establishing strategic alliances. Through M&A and developing the strategic alliances almost 80% of the market is controlled by participant of the three major alliances (Lee & Song, 2017), which are: 2M Alliance (Maersk, MSC), THE Alliance (ONE, Yang Ming, Hapag-Lloyd) and Ocean Alliance (CMA CGM, Evergreen, OOCL, COSCO). In 2017 global merchandise trade grew by 4,7 per cent in volume terms, which is the strongest growth in six years. The value of the global trade increased by 11 per cent in 2017 (WTO, 2018). Over 70 per cent of the merchandise exports are manufactured goods, which are usually transported by containers.

Global containerized trade increased by 6,4 per cent in 2017, UNCTAD estimates that more than 752 million TEUs were moved at container ports worldwide in 2017 (UNCTAD, 2018).

### 3.2. Management and ownership models of maritime container terminals

Maritime container terminals are crucial part of maritime transport. Most of the container terminals are part of the port, where the landlord management model is implemented (Verhoeven, 2010). Moreover due to characteristics of the particular port management models only in landlord and private service port the private sector invest into terminal. There has been three consecutive waves in the internalization of the container terminal industry. Those waves were first established by terminal operators looking for opportunities to invest (Notteboom & Rodrigue, 2012). First two waves included companies like HPH, P&O, PSA and SSA, who thanks to expanding the activity gained competitive advantage. Third wave of terminal operators included the container carriers, who were seeking opportunity to expand and support their core business (Notteboom & Rodrigue, 2012). The extraordinary level of M&A activity in the terminal operator industry implied that terminal operators faced the risk of losing customers due to possibility for customers to reorganize their service network or engage new partnership with other carriers (Slack et al., 1996; Notteboom & Rodrigue, 2012). Moreover in the container terminal industry many companies have attempted to enter the market although, besides shipping companies, relatively few have succeeded. Those who succeeded, done this on their local markets or in participation with larger international operators (Farrell, 2012). During volatile, turbulent, time of consolidation and internalization, maritime container terminal management models have been designed. In general, literature provides three types of container terminal management models, this typology is based on the core business of the owner of the terminal (Notteboom & Rodrigue, 2012). Another classification, which is more detailed, provides eleven main categories of the container terminal management models based on the owners (Farrell, 2012). The general typology distinct:

- Stevedores;
- Maritime shipping companies;
- Financial corporations.

The detailed classification includes:

- Global terminal operators;
- Regional terminal operators;
- Stevedores;
- Shipping lines;
- Freight transport companies;
- Construction companies;
- Equipment manufacturers;
- Property developers;
- Industrial conglomerates;
- Financial institutions;
- Port authorities.

Table 2 presents the general types of global container terminal operators with respect to the functioning business model, core business and expansion strategy.

*Table following on the next page*

*Table 2: Types of global maritime container terminal operators (Notteboom & Rodrigue, 2012)*

	<b>Shipping lines</b>	<b>Stevedores</b>	<b>Financial corporations</b>
<b>Business model</b>	Vertical integration	Horizontal integration	Diversification of portfolio
<b>Core business</b>	Maritime shipping	Port operations	Financial assets
<b>Expansion strategy</b>	Direct investments	Direct investments or parent companies	M&A and reorganization of assets
<b>Examples</b>	APM-Maersk, COSCO Group, MSC	HPH, ICTSI, PSA	Macquarie Infrastructure, IFM Global Infrastructure Fund

For shipping lines the investment in the container terminals is the support function. Stevedores consider the investment in the container terminals as a way for expansion and diversification. The financial corporations regard maritime container terminals investments as a possibility for valuation and generation of the revenue.

#### 4. POLISH CONTAINER TERMINALS

In Poland there are three major maritime container terminals, all are located in the Tri-City region. Baltic Container Terminal (BCT) and Gdynia Container Terminal (GCT) are located in Gdynia, facing each other. Deepwater Container Terminal (DCT) is the only one suitable for mega container vessels, and it is situated in Gdańsk. Both BCT and GCT are part of Gdynia Port Authority, and DCT is a part of Gdańsk Port Authority. Both port authorities have implemented the landlord model, which means that cargo handling operations as well as maintenance and development of superstructure is part of responsibilities of private sector. The BCT is managed by the ICTSI, which is an independent international maritime container terminal operator. In 2003 ICTSI awarded concession for 20 years for operating the terminal. Berth specification of BCT is as follows: 800m of quay length with up to 13m depth. The annual throughput capacity of the terminal is 1,2 million TEU. The terminal specialized mainly in the feeder services having 16 calls per week. MSC (2M Alliance) included BCT as a one of the ports in their two European services. The GCT is managed by the Hutchison Ports Holding (HPH), which is the international private maritime container terminal operator. The concession last until end of the 2089. The specification of berth in the GCT is as follows: 362m of quay length with up to 13,5m depth and 450m of quay length with up to 11m depth. The annual throughput capacity of the terminal is 630000 TEU (Lewiński & Sterniński, 2017), although eventually is should reach more than 1 million TEU. The terminal specialized in the feeder services having 14 calls per week. Hapag-Lloyd (THE Alliance) includes GCT as one of the ports in their four European services. The DCT is the only terminal capable for operating far-east services. Until May of 2019 DCT was managed by financial corporations (Macquire Infrastructure and Real Assets, MTAA Super, Australian Super and Statewide Super), which sold DCT to the syndicate composed from Polish Development Fund (public entity), PSA International (public port group operator) and IFM Investors (financial corporation). The specification of the DCT berth is as follows: 1300m of quay length with up to 17m depth. The annual throughput capacity of the terminal is 3 million TEU. The terminal specialized mainly in operating the ocean going vessels. The 2M Alliance, as well as Ocean Alliance, include the DCT as a link in their far-east services, providing one port call a week. Table 3 presents the polish container terminals management models and annual container throughput.

The category “Port Gdynia” consists GCT, BCT and OT Port Gdynia, which has no significance to the research, due to the fact that annual container throughput in this terminal is below 5000 TEU.

*Table 3: Polish container terminals management models and annual container throughput (own elaboration based on data from terminals and (Zamachowski & Rokicki, 2016; Lewiński & Sterniński, 2017; Wronka, 2017)*

	<b>DCT (TEU)</b>	<b>Change (%)</b>	<b>GCT (TEU)</b>	<b>BCT (TEU)</b>	<b>Port Gdynia (TEU)</b>	<b>Change (%)</b>
<b>Type of container terminal operator</b>	Financial corporation	-	Maritime container terminal operator	Maritime container terminal operator	-	
<b>2018</b>	1948974	22,3	N/A*	N/A*	803871	13,1
<b>2017</b>	1593761	23,6	N/A*	N/A*	710698	10,7
<b>2016</b>	1289842	20,1	321626	318871	642195	-6,2
<b>2015</b>	1069705	-10	327930	354992	684796	-19,4
<b>2014</b>	1188380	3,3	370558	475275	849123	16,3
<b>2013</b>	1150887	28,3	333657	394478	729607	7,9
<b>2012</b>	896962	41,2	263577	408722	676349	9,7
<b>2011</b>	634871	-	246380	361855	616441	-

*N/A\* - not available*

The average pace of growth in the period 2011-2018 was 18,5 per cent for DCT and 6,2 per cent for GCT, during the same period the BCT, on average, declined by 1,1 per cent. It has to be remembered that, besides ownership structure and management model, there is a major difference between DCT and other terminals. This difference is the DCT ability to operate ocean-going vessels, which implies the various levels of throughput.

## 5. CONCLUSIONS

In the literature there is a gap of knowledge concerning the relation between the management model of the maritime container terminal and the container throughput. This paper is first that make an attempt to fill this gap. This study is crucial from managerial, as well as theoretical point of view. Although it is essential to remember that there are other important factors affecting the maritime container terminal efficiency in terms of container throughput, such as: location of the terminal, nautical infrastructure expressed in the berth depth and the ability of terminal to expand. One of the main differences between polish terminals is the fact that BCT and GCT, due to its location which is near a city, have limited ability to expand, contrary to the DCT. Despite of the above stated factors, based on this research it could be said that maritime container terminal management model may be related with the container throughput, although to determine the relation it is necessary to obtain more data from other terminals. Based on this statement and the newest ownership change in the DCT it may be said that development of the container throughput in the DCT could accelerate in future. The main limitation of this research is connected with the small size of the studied entities, lack of possibility to acquire more empirical data and relative lack of variety of management structure in it. Another limitation is lack of possibility to assess other scientific database than Science Direct, which limited the ability to execute more detailed literature review. The further research directions should include extending presented study to other terminals with all type of management models with special attention to those, where the ownership structure has changed.



These research could verify the existence of the relation between management model and container throughput. Another direction is connected with the extension of this study to other factors, such as location, nautical infrastructure and ability of terminal to expand.

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## LITERATURE:

1. Baird, A. J. (2002) Privatization trends at the world ' s top-100 container ports, *Maritime Policy & Management : The flagship journal of international shipping and port research*, 29(3), pp. 271–284. doi: 10.1080/03088830210132579.
2. Baird, A. J. (2013) Acquisition of UK ports by private equity funds, *Research in Transportation Business & Management*. Elsevier Ltd, 8, pp. 158–165. doi: 10.1016/j.rtbm.2013.07.004.
3. Baird, A. J. & Valentine, V. F. (2007) PORT PRIVATISATION IN THE UNITED KINGDOM, in Brooks, M. R. and Cullinane, K. (eds) *Devolution, Port Performance nad Port Governance: Research in Transport Economics*. Oxford: Elsevier, pp. 55–84. doi: 10.1016/S0739-8859(06)17003-1.
4. Balci, G., Cetin, I. B. & Tanyeri, M. (2018) Differentiation of container shipping services in Turkey, *Transport Policy*, 61(October 2017), pp. 26–35. doi: 10.1016/j.tranpol.2017.10.004.
5. Baltazar, R. & Brooks, M. R. (2007) DEVOLUTION AND THE MATCHING FRAMEWORK : A CONFIGURATION THEORY APPROACH, in Brooks, M. R. and Cullinane, K. (eds) *Devolution, Port Performance nad Port Governance: Research in Transport Economics*. Oxford: Elsevier, pp. 379–403. doi: 10.1016/S0739-8859(06)17017-1.
6. Bernhofen, D. M., El-Sahli, Z. & Kneller, R. (2016) Estimating the effects of the container revolution on world trade, *Journal of International Economics*. Elsevier B.V., 98, pp. 36–50. doi: 10.1016/j.jinteco.2015.09.001.
7. Brooks, M. R. & Cullinane, K. (2007) GOVERNANCE MODELS DEFINED, in Brooks, M. R. and Cullinane, K. (eds) *Devolution, Port Performance nad Port Governance: Research in Transport Economics*. Oxford: Elsevier, pp. 405–435. doi: 10.1016/S0739-8859(06)17018-3.
8. Brooks, M. R. & Pallis, A. A. (2012) Port Governance, in Talley, W. K. (ed.) *The Blackwell companions to maritime economics*. Wiley-Blackwell Publishing Ltd, pp. 491–517. doi: 10.1002/9781444345667.fmatter/pdf.
9. Charlampowicz, J. (2017) Measurement of Supply Chain Efficiency- Selected Issue for Research and Applications, *17th International Scientific Conference Business Logistics in Modern Management*, pp. 471–483.
10. Charlampowicz, J. (2018a) Analysis of the market concentration of the Maritime Container Shipping Markets – selected issues, *SHS Web of Conferences*, 58, p. 01005. doi: <https://doi.org/10.1051/shsconf/20185801005>.
11. Charlampowicz, J. (2018b) Market concentration of strategic alliances members in the maritime container shipping market on trade lanes passing across the Atlantic and the Pacific - selected issues, in *Proceedings of the 4th International Conference on Traffic and Transport Engineering*. Belgrade, pp. 373–377.
12. Farrell, S. (2012) The ownership and management structure of container terminal concessions, *Maritime Policy & Management : The flagship journal of international shipping and port research*, 39, pp. 7–26. doi: 10.1080/03088839.2011.642317.

13. Hirata, E. (2017) Contestability of Container Liner Shipping Market in Alliance Era, *Asian Journal of Shipping and Logistics*. Elsevier B.V., 33(1), pp. 27–32. doi: 10.1016/j.ajsl.2017.03.004.
14. Lee, C. Y. & Song, D. P. (2017) Ocean container transport in global supply chains: Overview and research opportunities, *Transportation Research Part B: Methodological*. Elsevier Ltd, 95, pp. 442–474. doi: 10.1016/j.trb.2016.05.001.
15. Lewiński, A. & Sterniński, R. (2017) Czynniki determinujące znaczenie i pozycję rynkową wiodących terminali kontenerowych w Polsce w latach 2007 – 2016, *Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie*, 35(3), pp. 13–25.
16. MDS Transmodal Container Shipping Bulletin November 2017 (2017).
17. Notteboom, T. & Rodrigue, J.-P. (2012) The corporate geography of global container terminal operators, *Maritime Policy & Management : The flagship journal of international shipping and port research*, 39(3), pp. 249–279. doi: 10.1080/03088839.2012.671970.
18. Pryke, S. et al. (2009) *Construction Supply Chain Management: Concepts and Case Studies*. Edited by S. Pryke. Wiley-Blackwell Publishing Ltd. doi: <http://dx.doi.org/10.1002/9781444320916>.
19. Rau, P. & Spinler, S. (2017) Alliance formation in a cooperative container shipping game: Performance of a real options investment approach, *Transportation Research Part E: Logistics and Transportation Review*. Elsevier Ltd, 101, pp. 155–175. doi: 10.1016/j.tre.2017.02.005.
20. Slack, B., Comtois, C. & Sletmo, G. (1996) Shipping lines as agents of change in the port industry, *Maritime Policy & Management : The flagship journal of international shipping and port research*, 23(3), pp. 289–300. doi: 10.1080/03088839600000090.
21. Stopford, M. (2009) *Maritime economics*. Third edit. London: Routledge.
22. Suárez-Alemán, A., Serebrisky, T. & Ponce De León, O. (2018) Port competition in Latin America and the Caribbean: the role of concessions and competition policy, *Maritime Policy and Management*. Routledge, 45(5), pp. 665–683. doi: 10.1080/03088839.2017.1418538.
23. UNCTAD, U. N. C. on T. and D. (2017) *Review of Maritime Transport*.
24. UNCTAD, U. N. C. on T. and D. (2018) *UNCTAD Review of Maritime Transport 2018*. Available at: [http://unctad.org/en/PublicationsLibrary/rmt2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/rmt2017_en.pdf).
25. Verhoeven, P. (2010) *European Port Governance - report of an enquiry into the current governance of european seaports*.
26. Wronka, J. (2017) Polskie porty morskie w morsko-lądowych intermodalnych łańcuchach transportowych, *Problemy Transportu i Logistyki*, 1(37), pp. 311–322. doi: 10.18276/ptl.2017.37-38.
27. WTO (2018) WORLD TRADE STATISTICAL REVIEW.
28. Zamachowski, P. & Rokicki, T. (2016) Rozwój kontenerowych przeładunków morskich w Polsce (na przykładzie DCT Gdańsk i BCT w Gdyni), eng: The development of the maritime container transshipments in Poland (on the examples of DCT Gdańsk and Gdynia BCT), *Ekonomika i Organizacja Logistyki*, 1(4), pp. 91–100.

## CONVERGENCE OF MEDIA INDUSTRY: CHANGING THE PARADIGM OF MEDIA PRODUCTION AND CONTENT DISTRIBUTION

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### ABSTRACT

*The aim of this paper is to point out the importance of the convergence of business processes in the media industry. Digitization and convergence of existing business processes have been established completely new relations in the current media market. In the context of the media industry is talking about "old" and "new" media industries, and the media industry before and after the convergence of the business process. Convergence, as a concept, has a fairly broad interpretation, however, in the context of the media industry can be seen through a wide range of creative industries that refer to some form of media industry. Publishing, as the oldest category of the media industry, digitization and convergence of the media industry has undergone the most radical changes. The convergence of production and distribution of media content directly influenced the change business paradigms, but as the final resultant was creating an entirely new media market. The development of the communications market, digitization and development of the Internet, technological development in the field of screens of all sizes and purposes, in particular post-industrial society, were the fuel for transformation and convergence of different sectors of the media industry and creating entirely new forms of creative industries.*

**Keywords:** *communication, convergence, creative industries, the media industry, Post-industrial society*

### 1. INTRODUCTION

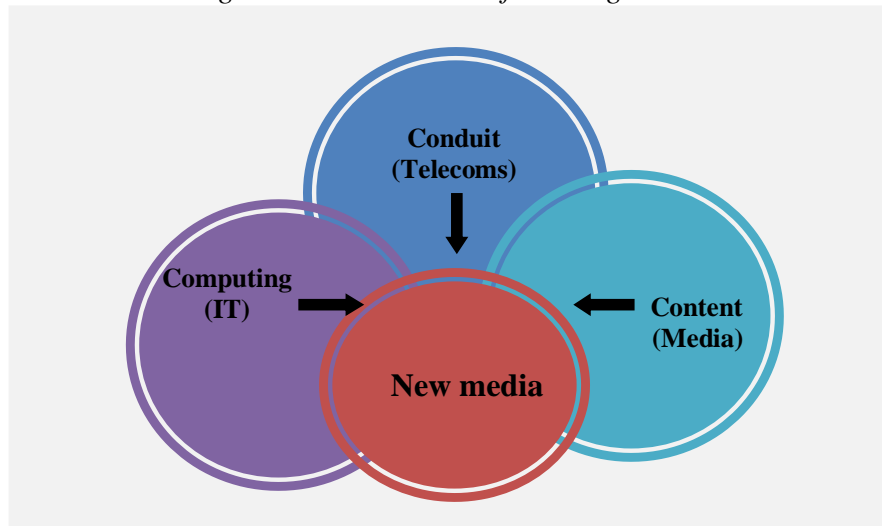
Convergence is a vague term used in different academic disciplines to describe and analyse the processes of changing the uniqueness and uniformity of business processes. The use of terms in the communications sector, often referred to as media convergence, encompasses the entire field of access, definition and characterization of the digital creative economy (Latzer: 2013). Convergence (lat. Convergentia) in literal translation would mean convergence, similarity, or conformity. In mathematics, it is the property of a string to approach lines, the boundary value (Prolexis encyclopedia online). In the context of biology, it corresponds to the body composition of phylogenetically independent organisms living in a similar environment (eg fish and whales) and is the result of adaptation. In the context of linguistics, approximation between linguistic structures (languages) is a consequence of (lingering) linguistic touch (Croatian lexicon - online). Latzer (2013) points out that as an analytical discipline, the term convergence is first used in the natural sciences and then introduced into the social sciences and humanities. He cites the frequent use of the term convergence in the political sciences, as well as in technological research that brings science closer to fusion, nano technology, informatics and biotechnology with the cognitive sciences. Convergence is the merging of several technologies and industries that have been considered different, or separate. Opportunities can often occur in creative combinations that evolve on complementary technologies (Byers, Dorf, & Nelson 2015: 60). Convergence should be analysed as a process, not as an effect. The effects of the convergence process are visible, measurable and can be determined, while the actual process can sometimes not be defined. The convergence process can be strategically planned both under the influence of the market but also under the influence of technological development and social developments (Appelgren 2004).

In the context of the media industry, convergence determines the process of technological advancement of content production and distribution, which is enabled by the use of different platforms in the production, distribution and monetization of the same content (Lozić 2016). New digital media are outcomes of convergence, and at the same time they are central drivers of the digital creative economy (Latzer 2013).

## **2. CONVERGENCE OF TECHNOLOGICAL PROCESSES**

The emergence of convergence of different industrial sectors and business processes has been directly influenced by the digitization and development of the Internet. Various forms of convergence of business systems also occurred in earlier periods of capitalism. This was especially pronounced after the Second Industrial Revolution and the transition from steam energy to electricity and fossil fuels. The key difference between the process of convergence of production systems in history and the convergence of the media industry, at the end of the 20th century, is based on the limits of coverage and definition of the production process. Gustafsson and Schwarz (2013: 10) point out that the fundamental feature of convergence products is that they include several products (devices) in one product. Often, these devices are products of the same (digital) industry, but devices from other industries may also emerge. While the manufacturing processes and boundaries of organizations from the early 20th century were very clearly and sharply defined, at the end of the century the clear boundaries of organizations and the scope of business processes were lost. There is a time that will be recognized through the term "blurred borders". Tilson et al. (2010) emphasize the importance of the flexibility of technology organizations that brought changes to existing organizations models from the late 1990s. The "blurred boundaries" and the flexibility of technology companies, with the convergence of business processes, had a significant impact on changes in the business paradigm, which directly affected social changes in the environment. Kranenburg and Ziggers (2013: 57) point out that the development of new media has further accelerated the emergence of "blurred boundaries of organizations" and the convergence of multiple creative industries in one form. The predominance of financial capitalism from the end of the 20th century, which brings the phase of industrial capitalism back to the phase of metacapitalism from its beginnings, contributed to this development. In the context of the media industries, the basic idea of convergence lies in the merger of the telecommunications sector with the computer industry and everything that goes with it. In addition, emphasis is placed on the retail market, with the ultimate goal of merging all markets into one market (Hesmondhalgh 2013: 195). An example of industrial convergence is computing and communication, which have come together in the field of networks. For an example of this convergence, Byers et al. (2015: 61) cite the convergence of computers and mobile phones. Another example is the convergence of PDAs and mobile phones, evident in Apple's iPhone and Samsung's Galaxy. The satellite image, data and handheld are connected to a widespread GPS device. Medical and robotic technology have been combined to facilitate highly accurate and minimally invasive robotic surgery. Tapscott (2015: 68) emphasizes that in the "old economy" the car industry was dominant. In the "new economy" the media industry will take over, resulting from the convergence of the communications industry, the computer industry and the creation of content that is distributed in the market.

*Figure following on the next page*

*Figure 1: '3-C' Model of convergence*

*Source: Kung, 2013, 93*

Kung (2013: 93) refers to Professor Negroponte of MIT, who predicted in 1979 the convergence of technological solutions related to changes in social processes. The basic idea of convergence was based on the integration and metamorphosis of technological solutions in the telecommunications sector, the computer industry and informatics, all related to new technological solutions for content distribution. A new form of media industry that linked different industries merged into a new industry is shown in Figure 1. The model was later developed as the 3 C Convergence Model (Conduit, Computing, Content). Tapscott (2015: 19) notes that the convergence model was created as a result of pressure on all global corporations, regardless of size, who wanted to maintain their place among the leading corporations in the industry in which they compete. Tapscot, in the first issue of *The Digital Economy* published in 1995, points out that the "new economy" imposes the need to redefine the mission of the organization. Competitors within the industry are becoming increasingly virtuous, and old structures and forms of organization have failed to create competitive advantages. Referring to Shillingford (1979), Kung (2013: 94) highlights three fundamental stages in the process of convergence of systems that will ultimately result in the emergence of new media:

1. Phase 1 - convergence of market segments within the industry, with the merger of the landline and mobile telephony as an example;
2. Phase 2 - the disappearance of solid boundaries between different industries, with the development of mobile phones capable of transmitting television images; the underlying profit for consumers will be recognized through the fall in the prices of the services of the products and services of the merging industries;
3. Phase 3 - With the disappearance of traditional barriers between industries, it will no longer be possible to define firm boundaries between organizations and industries; an example is the iPod, which is a physical product that allows the use of music industry services, as well as the use of Facebook, MySpace, YouTube and the like.

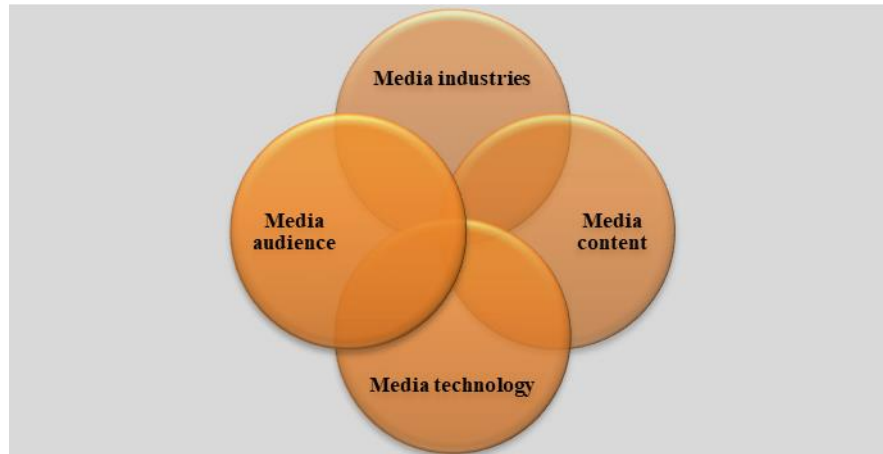
Convergence encompassed the technological level of development and production improvement. Organizations and individuals with advanced technological foundations have previously entered the process. Technological convergence has been reflected in all stages of the value chain, from the input of materials into production to servicing and services. The digitization of the process has changed the content format and has greatly influenced the value chain of production. The convergence of the media industry has fundamentally changed the business model.

Changing the content format has directly influenced the change in distribution models, market segmentation and media policies. Added to this are complete changes to legislation and regulations related to the media industry. Kung (2013: 94), referring to the definition of convergence of the consulting firm KPMG, concludes that convergence is a continuous process linking content-producing organizations as intangible products with organizations having material infrastructure through which content is distributed.

### **3. CONVERGENCE OF THE MEDIA INDUSTRY**

Media convergence is a process whereby a media product, which is a typical representative of a sector of the media industry, is simultaneously distributed through other media platforms. Take, for example, Adele's music album, which can be distributed from a laptop to other media platforms and listened to on an iPod, iPhone, or xBox (Turow 2014: 3). The concept of media convergence is strongly associated with the development of various digital industries, blurs the boundaries between different media and leads to the emergence of new products and services, as well as to an overall cultural change in communication (Langner et al. 2013: 137). Referring to convergence in the journalism and media industry segment related to publishing, Kolodzy refers to the definition of Professor Henry Jenkins of MIT, who summarizes the definition of convergence in the media industry to the following definition: Convergence is an ongoing process that takes place in various hubs of media technology, industry, content, and audience. This process is continuous and has no end (Kolodzy 2006: 5). Media convergence is a process in which different tools and equipment are used to produce and distribute news and entertainment programs by combining different media, telecommunications operators and the computer industries (Jenkins, Deuze 2011). Convergence is a fundamental factor that influences how people work together, produce or collect and edit news and entertainment programs. Convergence is the key to the process of connecting people within media organizations, and the strength of that community directly affects the success of media organizations (Kolodzy 2006: 39). The products of the media industry are directly related to the strength of the interconnection of all key factors that influence the convergence of fundamental factors within media organizations. Figure 2 shows the basic factors of convergence of the media industry, namely: the media industry, media content, media technology and audience, that is, the target market for a particular media product. Convergence culture is based on breaking down the barriers of earlier divergent media forms. In the modern world, journalists live and work in highly converged media environments (Baron 2015: 193). The process of convergence, by its basic definition, is essentially permanent and continuous. One of the specifics of the media industry lies precisely in the continuous technological innovation, the convergence of technological solutions, which, as a consequence, have strong convergence processes within media organizations in order to increase business efficiency. The publishing industry boomed before radio and television, television before broadcasting and cable operators. Satellite television and the internet have raised the bar even more. However, digitalization has enabled the convergence of different technological solutions into a single whole.

*Figure following on the next page*

*Figure 2: Convergence of the media industry*

*Source: Kolodzy, 2006.*

Doyle, referring to Schumpeter, defines media organizations as the leaders of creative destruction, expanding the definition and calling them so-called. the roosters of creative destruction (Doyle 2013: 19). Continuous technological innovations, on the one hand, have put aside already existing segments of the media industry, and on the other hand, they have created new segments. Schumpeter's creative destruction was reflected in the constant pursuit of innovation and fundamental change, while digitalization balanced the differences between the different technological levels of individual segments of the media industry. Kreaplin and Batsell (2013: 68-74) publish the results of a study of convergence in the newspaper industry over the last twenty years. The results of the research undoubtedly showed changes in the business paradigm that the newspaper industry went through. While at the beginning of the century, the news industry was delayed in publishing news and increasingly relied on cross media platforms through its association with broadcasting, in recent years it has re-positioned itself as an independent category of the media industry using social networks. At the beginning of the century, television took over the primacy in news speed. Ever since the 2010s, social networks, or portals with news publishers, have been taking the primacy of broadcasting in the speed of news coverage. Corredoira and Sood (2015: 138-188) explore the possibilities of developing the newspaper industry, based on a study of the steady decline of print publishers. The research findings can be linked to the 2013 findings of Kreaplin and Batsell's research by linking different platforms and a cross-media approach to information and content distribution. The Kreaplin and Batsell survey, based on a sample of the 200 largest newspapers in the US, reveals a great deal of connectivity between different media platforms by 2005, and especially from 2003 to 2005. Since 2011, this collaboration has been replaced by a "web-centric" approach whereby newspaper publishers independently use web portals to publish content. The use of shared digital technologies has encouraged the development of new forms and content of converged devices (eg mobile phones / media readers). The transition to new digital platforms - the Internet being the best example - has enabled the transmission of content to all forms of digital content reproduction (eg, watching television on smartphones or incorporating radio on television screens) (Doyle, 2013: 25).

#### **4. CONVERGENCE OF MEDIA SECTOR**

Continuous technological innovations have resulted in the development of an increasing number of media sectors. Figure 3 shows the interdependence of the media markets and the core areas covered by convergence within the media industry. Turow (2014: 158) broadens the division of media sector development, citing five fundamental areas: a) the spread of digital

media; b) sale through different platforms and contracts (window); c) audience fragmentation and new forms of market segmentation; d) globalization; and e) business conglomeration. Lawson-Borders lists seven elements that organizations and sectors should utilize to enhance convergence effects: a) communication; b) attachment; c) cooperation; d) rewarding; e) culture; f) competitiveness and g) consumers. Wirtz (2011: 48) divides core areas of convergence on technological innovation, market deregulation and changing consumer tastes.

#### **4.1. Technological innovation**

Technological convergence has emerged at the intersection of personal and business interests, or between professional obligations and entertainment. Its disruptive character has generated even more distinctive features within the perception of the media industry (Montpetit 2016: 30). The media industry has been at the heart of technological innovation that took place at the end of the 20th century. First of all, this was related to digitization and subsequently to the convergence of different sectors of the media industry. The divergence of industry since the beginning of the 20th century, thanks primarily to the invention of the electronic media of radio and television, has been replaced by the convergence of the media industry at the beginning of the 21st century, primarily through digitalisation and subsequently by the development of the Internet. Latzer (2013) warns that access to internet analytics should be directed, not only to the content being distributed, but also to the infrastructure that supports the system. It defines the Internet as a modular, open end-to-end system that enables innovation at every node of the network, that is, every user has the ability to innovate the system. Wirtz (2011: 48) emphasizes the importance of developing a network structure across all business lines, as well as the development of the Internet itself, which has contributed to technological innovations in the media industry. Straubhaar et al. (2016: 371) highlight the difference in the development of the media industry until the advent of screens for smartphones and PDAs, and beyond. Emphasis is placed not only on technological innovation, but also on a radical change in the paradigm of media content production and consumption.

#### **4.2. Market deregulation**

The development of the media industry in a corporate and globalized form would not have been possible without the deregulation of the market. The overall industrial markets of the mid-20th century were heavily influenced by institutional regulators. In the media industry, the pressure of legislative and regulatory measures was even more severe than in other industries. Only with the 1996 Telecommunications Act did the US media industry fully (de) regulate. Wirtz (2011: 48) emphasizes that deregulation was necessary in order for new competitors to emerge in the media market, extend competition to new sectors, and create the basis for continued deregulation related to the business of media organizations. Cagle (2009: 32) notes that change in the media industry, and therefore the processes that led to market deregulation, should also be sought in the section that refers to the political economy of the media. Using the synergy of the corporate organization, media corporations directly influenced the value of the cultural content they produced. Increasing synergy and content production have directly put pressure on market regulators, and the ultimate goal is market deregulation.

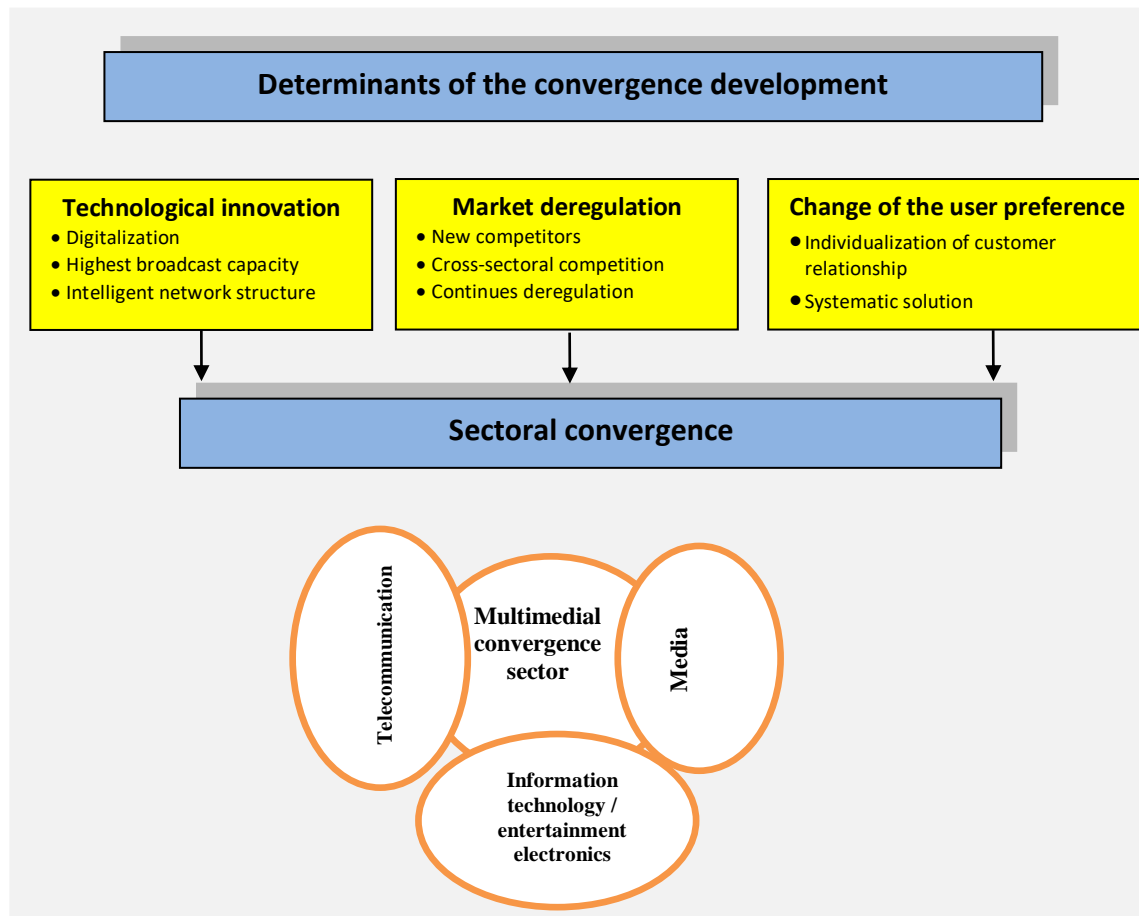
#### **4.3. Changing consumer behaviours**

One of the fundamental changes in the environment of the media industry and media corporations, and as a direct consequence of the convergence of business processes, has been the changing taste of consumers. Jenkins (2006) cites five fundamental changes in a society that have been triggered by convergence, and changes in consumer tastes are most associated with organic convergence and cultural convergence. Deuze (2009) points out that the convergence of the media industry has influenced the blurring of the boundaries between



economy (work) and culture (thinking), between production and consumption, and between active and passive participation in media culture.

*Figure 3: Convergence in the information and communication sector*



*Source: Wirtz, 2011., 48.*

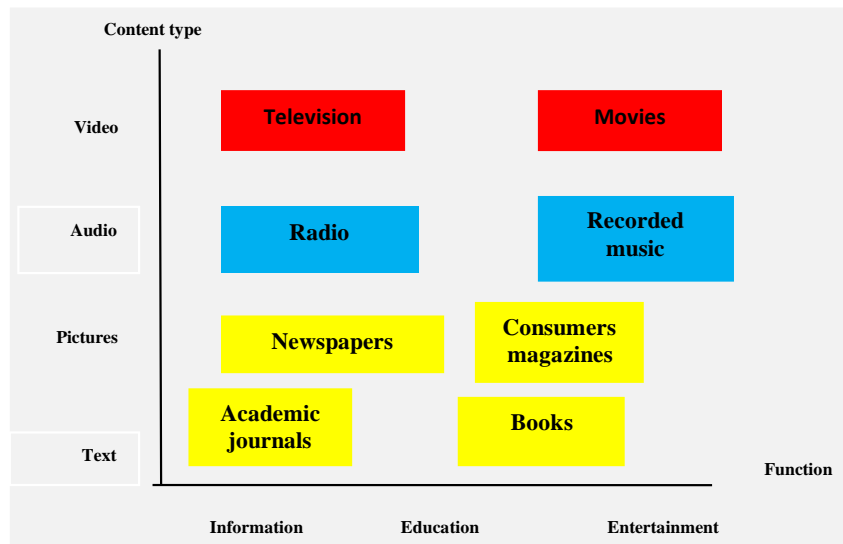
Wirtz (2011: 48) emphasizes changes in consumer access and individualization of access. In part, it abandons the mass media access strategy through mass advertising and turns to individualized market access and segmentation. As a direct consequence of changing consumer tastes, entirely new segments of the audience, ie consumers, are emerging, which was not known in the old media and old strategies for accessing media products markets. Lugmayr and Del Zoto (2016: 396) analyse and confirm the link between changing consumer behavior and the evolution of the media industry. Referring to McLuhuman's theory of media, Lugmayr and Del Zoto emphasize the importance of technological development on social relations. The development of the technological foundations of the media industry and the convergence of the media industry sector, on the one hand, has directly influenced consumer behaviour and overall social change, on the other. The strength of the correlation linking these two phenomena is variable in time and is not linear, but its influence and strength cannot be neglected.

## 5. CONVERGETION OF MEDIA INDUSTRY CATEGORIES

The convergence of the media industry has led to the development of media segments that are at the same time extremely connected but can also survive as separate entities. The best example is the digitization of newspaper editions. Newspaper content can be published on different media. The content to be published, its value, the framework in which it is placed, its purpose and purpose, and the like, remain unchanged, whether the content is published as part of a

publishing product in paper format or is digitized and published on a portal. This is just changing the way you access the same content, and is in part a different audience, using one type of media or another.

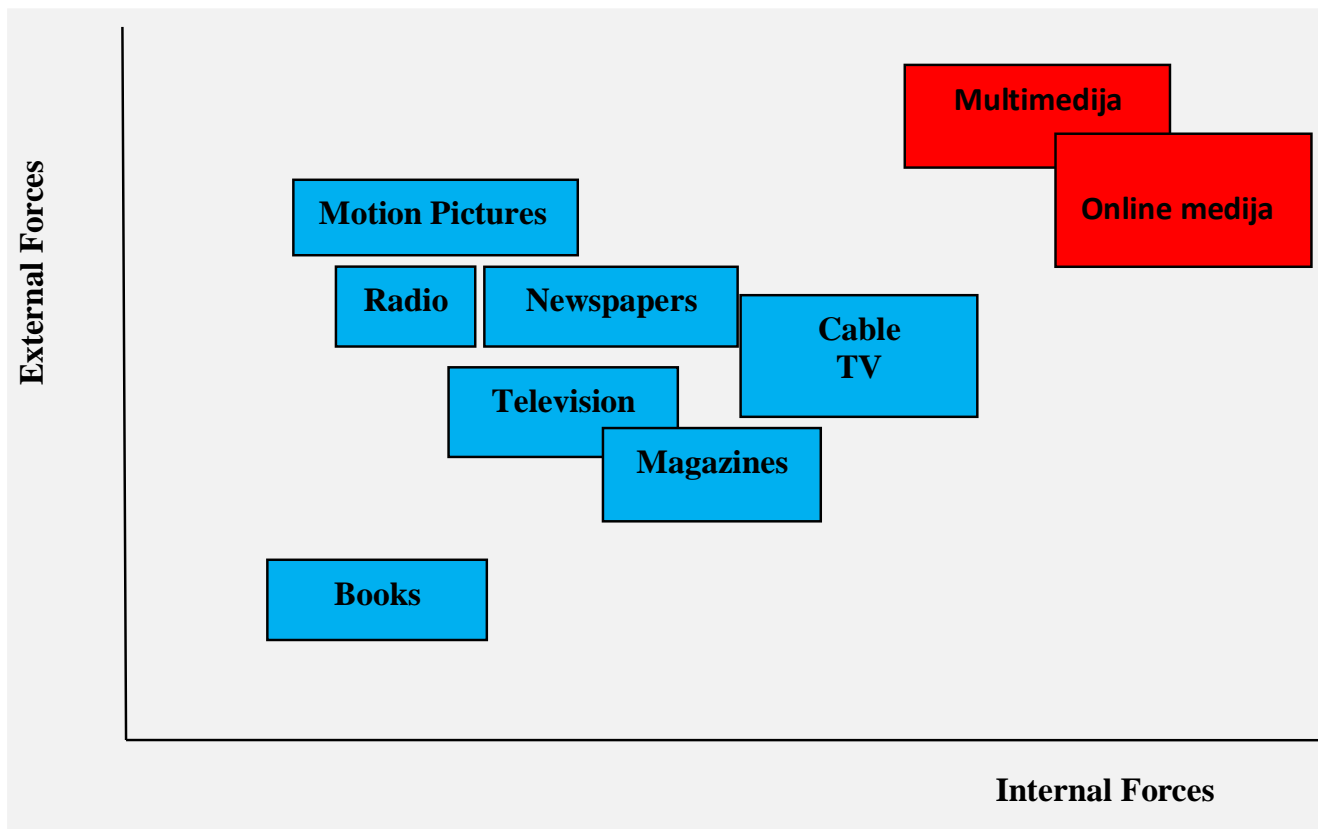
*Figure 4: Category of media industry*



*Source: Kung, 2013., 7.*

The approach to defining the categories and products of the media industry by different authors who have accepted defining this topic is directly related to the purpose and purpose that is to be presented. Greater attention in defining the categories of the media industry and, in this connection, in establishing sector-specific laws, can be found among authors from Europe, who approach this issue from the perspective of media management. More oriented towards the form of media economics, authors pay more attention to technological advancements, Internet convergence and the financial success of organizations. The initial approach taken by Kung (Kung 2013: 7) divides the media sectors into publishing and television. This approach is often found in other authors (Albarran; Doyle), and they are based on the various technological platforms required in the production process. (An obvious approach by media economics theorists.) Wirtz approaches this problem in the context of the type and division of media markets and divides them into markets with a predominant influence of electronic media and those without a significant influence. Kung is expanding his approach and by defining the media sector and products, he creates a matrix in which he puts in the relationship the function accomplished by the particular media content and the type of content being distributed. Figure 4. The distribution of media sectors by function and type of content could be subject to various objections, the biggest one being that the distribution is static and that different sectors of the media industry run through all categories of the matrix. However, here we will focus more on selecting the categories that Kung uses. It builds on Porter's value chain theory and sets out the characteristics of the value chain for each of the media industries. In Figure 5, certain categories of the media industry, using the same or similar technological basis of production and distribution, are colored in similar colors. However, if they start from studying the value chain, they can be defined as specific sectors of the media industry. Wirtz has a similar approach to defining media categories. It also emphasizes the approach through defining the value chain within different sectors of production and technological systems of content production and distribution. The categories of the media industry are divided into (Wirtz 2011: 115-483): 1) newspapers and magazines, 2) books, 3) movies, 4) television, 5) radio, 6) music, 7) video and computer games, and 8) internet.

Figure 5: The impact of external and internal forces on the adoption tendency of different media



Source: Chan-Olmsted, 2008., 252.

We can put the analysis of media industry categories in the context of influences coming from within the organization. Older categories of the media industry are more susceptible to the effects of existing markets and the effects within the industry in which they compete. The rivalry within the industry is increasing precisely in proportion to the age of the industry, but we cannot confirm the correlation between the age of the media industry and the height of the barrier to entry into the industry. Older categories of the media industry are more vulnerable to the influence of internal factors precisely because of the extremely strong rivalry within the industry. According to Chan-Olmsted (2008: 252), the largest rivalry is within the book industry category and is the largest influence of internal factors. Lugmayr and Dal Zotto (2016: 9) emphasize that the process of convergence of the media industry is part of overall technological convergence. The media industry has large fixed input costs and strives to minimize variable costs in order to achieve economies of scale. Younger categories of the media industry are more sensitive to influences from the environment of the organization and to overall changes in the media industry. Intra-industry rivalries have not yet reached the saturation stage, and according to the industry life cycle, these categories of media industry are still in the growth phase. The barriers to entry into the younger categories of the media industry are not as high as in the old industries, but entry into the industry requires exceptional financial resources and other resources because of the need for continuous technological advancements in business. The younger categories of the media industry are exposed to external and internal factors and are just positioning themselves within the media industry. The consumer of content of new categories of media industry is younger audience, which is obliged to develop new technological solutions and high level of technology as a whole. In this context, Lugmayr and Dal Zotto (2016: 396) talk about the continuous process of media convergence and divergence.

Old media gives way under pressure from new media, but also through technological development, they find an increasingly new place within the industry. The development of the Internet and multimedia industry categories has directly influenced the change in the relationship between producers and consumers of content. Consumers are also becoming producers, and the established paradigm of the communication chain is changing. Deuze (2009: 153) emphasizes that the distinction between traditional roles in creative processes within the media industry is disappearing. The key to understanding the current relationship between consumers and producers of media products, or between media owners and media producers, has changed completely, and these relationships are constantly changing and complementing each other. From all of the above, we can conclude that the convergence of the media industry has brought about structural changes, both in the technology sector for content production and in the relationships that define producers and consumers of media content. Jenkins (2006: 3) notes that in the world of media convergence, all important stories are told, all the delusions are sold, and consumers are offered content through all media platforms.

## 6. CONCLUSION

Media convergence, a process that emerged as a direct consequence of the digitization of manufacturing processes, occurred in the early 1990s. Technological development has been a limiting factor in changing the business paradigm for all sectors and categories of the media industry prior to the digitization of production processes. It can be observed that the strategies of vertical and horizontal diversification of production processes, within media corporations, preceded the convergence of media sectors conditioned by technological advances. Only through the digitization of the content is the process of convergence of different media categories enabled. The first significant steps in connecting the categories of the media industry were achieved through the development of the cable network and later satellite television, the distribution of content on television screens that broadcast terrestrial television. It is the development of television screens that will have a key impact on the development of "new media industries" that will develop on the foundations of the "old media industries". With the digitalization of the product and the convergence of the media sectors, the product of the media industry becomes content distributed on different platforms. Convergence, as a business process, has inevitably influenced the change in the business paradigm of all industrial systems that have evolved on the basis of the digitization of production. At the same time, it has triggered profound changes in the society or behavior of individuals influenced by changes in the media industry. On the one hand, convergence as a term came into daily use as a term to explain the overall change in the production and consumption of content in the media industry, and on the other, convergence was marked as the emergence of new media industries based on the development of the Internet. Within the social processes, with the digitization and convergence of production, besides the creation of a completely new market, the whole social paradigm of media content consumption has changed. The development of the screen laid the groundwork for abandoning the concept of mass media and broadcasting content from one hub to the audience. The development of the digital display industry has especially contributed to the development of smartphones and PDAs, and as a completely new media category, the video game industry has evolved. The fundamental feature of the convergence of the media industry is its continuity and the constant change and development it is undergoing. Once the foundations of development have been laid, they are constantly being upgraded with new forms of media content and categories. Modern technological solutions, with the help of a modern Internet network, allow to raise and develop the media industry to a whole new level. All this confirms the importance of process convergence in the development of new media production solutions. Convergence, in the context of the media industry, is a process that connects to the pattern or origin of change, which is why it does not have its final starting point.

**LITERATURE:**

1. Appelgren, E. (2004) „Convergence and Divergence in Media: Different Perspectives“, 8th ICCC International Conference on Electronic Publishing Brasilia – DF, Brazil, p. 237.248., <http://elpub.scix.net/data/works/att/237elpub2004.content.pdf>
2. Baron, R.J. (2015) „Spreading the News: Spreadable Media, Social Networking, and the Future of News Production“, (eds.) Gibbs, W.J.; McKendrick, J., Contemporary Research Methods in the News Industry, IGI Global
3. Byers, T.; Dorf, R.C.; Nelson, A.J. (2015) Tehnološko poduzetništvo: Od ideje do tvrtke, Zagreb, Tehničko veleučilište u Zagrebu
4. Cagle, C. (2009) „When Pierre Bourdieu Meets the Political Economists: RKO and Leftists-in-Hollywood Problematic“, (eds.) Staiger, J.; Hake, S., Convergence Media History, Routledge, Taylor & Francis Group, p. 24.-33.
5. Chan-Olmsted, S.M. (2008) „Issues in Media Management and Technology“, ur. Albarran, A.B.; Chan-Olmsted S.M.; Wirth, M.O.; Handbook of Media Management and Economics, Taylor & Francis e-Library
6. Corredoira L.; Sood, S. (2015). „Meeting new readers in the transition to digital newspapers: Lessons from the Entertainment Industry“, El profesional de la información, V 24. N.2., P. 138–148.
7. Deuze, M. (2009) „Convergence Culture and Media Work“, (ed.) Holt, J.; Perren, A. Media industries: History, Theory, and Method, Wiley-Blackwell, A John Wiley & Sons Ltd. Publications, p. 144-156.
8. Doyle, G. (2013) Understanding Media Economies, Second Edition, London, Sage publication Ltd.
9. Gustafsson, V.; Schwarz, E.J. (2013) „Business Modelling and Convergence“, (eds.) Diehl, S.; Karmasin, M., Media and Convergence Management, Springer, p. 9.-24.
10. Hesmondhalgh, D. (2013) Cultural Industries, 3rd Edition, London, SAGE publications Ltd.
11. Jenkins, H. (2006) Convergence Culture: Where Old and New Media Collide, New York University Press
12. Jenkins, H.; Deuze, M. (2008) „Editorial Convergence Culture“, The International Journal of Research into New Media Technologies, Sage Publications, Vol. 14(1): 5.- 12.
13. Kolodzy, J. (2006) Convergence Journalism – Writing and Reporting Across the News Media, Rowman & Littlefield Publishing Group, Inc.
14. Kranenburg, H.; Ziggers, G.W. (2013) „Dynamic Competition and Ambidexterity“, (eds.) Towse, R.; Handke, C., Handbook of Digital Creative Economy, Edward Elgar Publishing Limited
15. Kreaplin, C.; Batseil, J. (2013) „Web-centric Convergence Replaces Media Partnership“, Newspaper Research Journal, Vol. 34., No. 4, p. 69-82.
16. Kung, L. (2013) Strategic Management in the Media: From Theory to Practice, Sage Publications Ltd.
17. Langner, T.; Brune, P.; Fischer, A. (2013) „Managing Brands in Converging Media Environment“, (eds.) (eds.) Diehl, S.; Karmasin, M., Media and Convergence Management, Springer, p. 135.-162.
18. Latzer, M. (2013) „Media Convergence“, (ur.) Towse, R.; Handke, C., Handbook of the Digital Creative Economy, Edward Elgar
19. Lawson-Borders, G. (2009) Media Organizations and Convergence: Case Studies of Media Convergence Pioneer, Routledge, Taylor & Francis Group
20. Lozić, J. (2016) Hrvatsko novinsko nakladništvo u kontekstu globalnih medijskih trendova, Doktorska disertacija, Sveučilište u Rijeci, Filozofski fakultet u Rijeci

21. Lugmayr, A.; Dal Zotto, C. (2016) „Media Convergence as Evolutionary Process“, (eds.) Lugmayr, A.; Dal Zotto, Media Convergence Handbook: Journalism, Broadcasting and Social Media Aspects of Convergence – Vol.1, Springer – Verlag, p. 3.-16.
22. Lugmayr, A.; Dal Zotto, C. (2016) „Media Convergence is not King: The Triadic Phenomenon of Media „Convergence-Divergence-Coexistence“is King, (eds.) Lugmayr, A.; Dal Zotto, Media Convergence Handbook: Journalism, Broadcasting and Social Media Aspects of Convergence – Vol. 1, Springer – Verlag, p. 387.-414.
23. Montpetit, M.J. (2016) „The 2nd Convergence: A technology Viewpoint“, (eds.) Lugmayr, A.; Dal Zotto, Media Convergence Handbook: Journalism, Broadcasting and Social Media Aspects of Convergence – Vol. 1, Springer – Verlag, p. 29.-58.
24. Straubhaar, J.; LaRose, R.; Davenport, L. (2016) Media Now: Understanding Media, Culture, and Technology, Ninth Edition, Cengage Learning
25. Tapscott, D. (2015) The Digital Economy: Anniversary Edition: rething promiseand peril in the age of networked intelligence, McGraw Hill Education
26. Tilson, D.; Lyytinen, K.; Srrensen, C. (2010) „Digital Infrastructures: The Missing IS Research Agenda“, Information Systems Research, Vol.21, No. 4, pp. 748.-759.
27. Turow, J. (2014) Media Today: Mass Communication in a Converging World, Fifth Edition, Routledge, Taylor & Francis Group
28. Wirtz, B.W. (2011) Media and Internet Management, 1st Edition, Gabler Verlag, Springer Fachmeiden Wiesbaden GmbH

# HISTORICAL EVOLUTION OF THE AXIOMATIC METHOD IN ACCOUNTING: RUSSIAN EXPERIENCE

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## **ABSTRACT**

*This study analyzes the historical evolution of the axiomatic method in Russian accounting during the 19<sup>th</sup> - 21<sup>st</sup> centuries. The basic structural elements of the axiomatic theory are presented. The accounting methodology is considered from the view of the axiomatic theory; the axiomatic systems of I.P. Russiyan, A.A. Kolkotin, A.P. Rudanovskiy and R.S. Rashitov have been investigated. Russian accounting, axiomatic accounting theories have been shown to be at the initial stage of development up to the present.*

**Keywords:** *accounting methodology, accounting theory, axioms of accounting, axiomatic method, axiomatic theory, history of accounting*

## **1. INTRODUCTION**

Being described by Euclid in the "Elements" (Nachala Evklida, (1948).), geometry was historically considered the first scientific discipline built on axiomatic method, the first scientific discipline built on the basis of the axiomatic method was geometry, "Euclid's Elements" contain 23 definitions ("definitions-descriptions"), 5 postulates (or requirements) and 9 axioms, followed by proposals (theorems) based on the accepted definitions, postulates and axioms. Eventually, axiomatic theories had penetrated the other fields of scientific knowledge, such as arithmetic, physics, biology, economics, and particularly accounting. Axiomatic theory includes the following major structural elements:

### **1) Fundamental terminological system**

The introduced conceptual apparatus is intended to describe the fundamental objects of the theory and their properties. The choice of basic concepts tends to be arbitrary, "The implementing of the axiomatization program of intuitive theory allows to choose basic concepts vastly arbitrary and the concepts chosen are often markedly different from each other»(Stoll, (1968), p 143)

### **2) Rules of describing fundamental objects of the theory**

To describe the selected objects of the theory, special symbols are introduced, which can be of two types — special terms of natural language, or intentionally introduced formalized symbolics (depending on the conceptual apparatus used in the theory, there exist non-formalized axiomatic theories and formalized axiomatic theories).

### **3) The system of axioms**

An axiom means the true assertion of the deductive theory, accepted without proof. In Euclid's "Elements" five postulates (or requirements) are accepted (Nachala Evklida,(1948), pp.14-15) and the nine axioms (Nachala Evklida, (1948), pp.15). There are four axioms accepted in the axiomatic system of D. Hilbert-W. Ackermann, and five axioms used in the original axiomatic system of A. Whitehead-B.Russell (A. Whitehead - B. Russell). The accepted axioms should meet the requirements of consistency, completeness and independence.

### **4) Rules of derivation from the accepted system of axioms**

The key element of the axiomatic system which allows to obtain new knowledge within the framework of axiomatic theory. Intuitive logic is the rules of derivation from the accepted system of axioms in non-formalized theories. Compliance made within the framework of

not formal axiomatic theory of deductive conclusion with generally accepted rules of logic, allows judging the truth or falsity of this conclusion.

The rules of the of axioms` derivation are equally accepted with the system adaptation in formal axiomatic theories. The idea of applying the axiomatic accounting method to create scientifically grounded theory was suggested both Russia and the West. Russian scientist Yaroslav Vyacheslavovich Sokolov described accounting in one of the definitions as" ... the language of signs and rules of their use created to replace real objects with their symbols, enabling to describe economic activity and its results" (Sokolov, (2005), pp.13). And as the "language of signs" the author understood, "... a set of specifications conveyed primarily by professional terminology and special codes" (Sokolov, (2005), p.13), and he suggested, "... those restrictions that are introduced into the accounting language and those, establishing information links between signs, provide the necessary communication between the participants of economic processes", as the rules of use (Sokolov, (2005), p.13). As a result, the scholar treated accounting as "...a language created to describe the economic process, and from this point of view the economic process should be divided into three parts: 1) semantics, 2) syntax, 3) pragmatics" (Sokolov, (2005), pp.14). Moreover, Ya. V. Sokolov considered the analysis of methodology and language of presenting economic life facts as the true theory of accounting, "... the true theory of accounting-book-keeping is the analysis of accounting methodology of economic facts life and the language to describe these facts" (Sokolov, (2005), p.13). The authors such as I. Yuji (Ijiri, (1965), (1967), (1971).), R. Mattessich (Balzer, (1991), Mattessich, (1957), (1973)), W. Balzer (Balzer, (1991), (2000).), G. Galassi (Galassi, (1978)) and others like Ávila, (1988), Carlson (1981), Deguchi, (1986), Gutiérrez, (1990)) promoted the accounting axiomatic method in the West. Therewith the Russian experience of applying the accounting axiomatic method during the XIX-XXI centuries remains understudied area.

## **2. AXIOMATIC METHOD IN THE WORKS OF RUSSIAN SCIENTISTS**

### **2.1. The first attempts to use axioms in Russian accounting**

Iosif Petrovich Russiyan was the first to distinguish accounting axioms In Russia. In "The Basics of double-entry bookkeeping" (Russiyan, (1884)) the author stated the following axioms," Two sets of objects – set A and set B, without interaction of one set with another (without mutual interaction between them), equal zero. 2. Each object contains two opposite parties, one party tends to increase, and the other to reduce the objects" (Russiyan, (1884), pp 206).The first axiom of I. P. Russiyan is nothing but an updated statement of Pacioli's first postulate" the sum of debit turnovers is always identical to the sum of credit turnovers of the same account system " (Sokolov, (2005), p.243) .L. Pacioli stated,"... the sum of the debtor balance must equate to the sum of the debtee balance" (Pacioli, (2009), p.49)).Updating of the first Pacioli`s postulate resulted in I. P. Russiyan`s equating the total amount of assets and liabilities to zero. It was stated in the second axiom that things (objects) of accounting are able to increase and decrease (in the most abstract sense).Attention should be drawn to the practical focus of I.P. Russiyan`s axioms and the absence of rules for conclusion from the adopted system of axioms. One can confidently state that the main purpose I. P. Russiyan`s axioms introduction explained the double entry and determined the practical rules for the compilation of accounts correspondence. Axioms introduced by the author logically resulted in setting this objective which was actually the topical issue of accounting methodology of the XIX-XX centuries and determines the subsequent development of accounting. Alexander Alexandrovich Kolkotkin was the next to attempt axiomatizing the accounting methodology. In his small work "Two Axioms in Bookkeeping" (Kolotkin, (1909).) the author divided all accounts into property accounts, "... concerning the property of the given organisation" (Kolotkin, (1909), p.9) and profitable ones, "... concerning the revenue of the given organization" (Kolotkin, (1909), p.9), as a result stating



two axioms of accounting. The first axiom of A.A. Kolkotin said “In all property accounts, everything that increases the property of the enterprise is put to the debit of these accounts, and everything that decreases the property of the enterprise passes to the credit” (Kolotkin, (1909), p.10). The second axiom of A.A. Kolkotin said “In all revenue accounts, everything that increases the income of the enterprise passes to the credit of these accounts, and everything that decreases the income of the enterprise is put to the debit” (Kolotkin, (1909), p.10). Actually, the introduced axioms are nothing more than the historically established rules for cost information disclosure on active and passive accounts. At the same time, the classification of accounts into “property” and “income” ones (according to A.A. Kolkotin these groups of accounts, in fact, are not crucial, as the definition “... concerning the property (income) of the enterprise” cannot be considered in as an adequate definition) fully coincides with properties of active and passive accounts, respectively. Moreover, in the provided classification of accounts into “property” and “income “ones”, one can consider a naive attempt to explain the double-entry accounting methodology in the economic content terms. Thus, all objects of accounting are divided into “property” and “income” ones, and each group of objects has its own axioms of disclosing cost information on the corresponding accounts. Logical inconsistency of the A.A. Kolkotin’s axiomatic system can be seen when considering such accounting objects as “Losses” or “Accounts payable”. The “Losses” account is debited when the business discloses its losses and credited when the loss is written off (first axiom of A.A. Kolkotin), but in this case we must recognize the “Losses” account should be treated as the account showing organization’s property and the losses shown with property. A similar situation developed with accounts payable of the organization. Accounts payable are credited when the organization shows liabilities and debited when they are written off. According to the second axiom of A.A. Kolkotin, disclosure payable accounts should be recognized as revenue accounts and payables themselves as the revenue of the organization. Subsequently, R.S. Rashitov considered the contribution of A.A. Kolkotin to the axiomatization of the accounting methodology “... A.Kolkotin limited himself to the axiomatization of the transactions preparation and this was completed” (Rashitov, (1979b), p. 43). But, despite that the proposed by A.A. Kolkotin axiomatic theory of accounting proved invalid, an attempt to explain the technical rules of accounting using the axiomatic method deserves deliberate attention. Like I.P. Russiyan, A.A. Kolkotin stating the axioms of accounting, pursued one goal of explaining double-entry accounting and the determining of the practical rule for compiling accounts correspondence. A.A. Kolkotin did not have the rules of derivation from the adopted system of axioms, moreover, they were not supposed. The reason why the author considered it necessary to introduce a system of axioms is also of interest. As emphasized above, according to A.A. Kolkotin, the main objective of accounting is to determine the adequate correspondence of accounts in a business transaction, “So to speak, the most important thing in any type of accounting is the quintessence of accounting is the quick, unambiguous identifying a debtor and a creditor in each given transaction, i.e. which account should be debited and which one credited. An easy identifying a debtor and a creditor between individuals is a great difficulty of identifying them between accounts”. (Kolotkin, (1909), pp.7) This objective from the point of view of the author of the work “Two axioms in accounting” The issue of adequate determining the correspondence of accounts in accounting at early stages of accounting methodology development was considered as the crucial one by a great number of scholars. The importance of this issue was emphasized by Nikolai Lunskey, who noted that: “... the most complicated thing in accounting is compilation accounting formulas” (Lunskey, (1913), p.73) Nicholay Semyonovich Pomazkov in the introduction to the work “Accounting theory. The dual aspect concept and the double entry method ” (Pomazkov, (1929)) wrote, “This method of counting registration by simultaneous debiting and crediting of corresponding accounts is characteristic of the whole system of counting records. ... therefore, every student studying accounting should

aspire primarily to memorizing this specific accounting method " (Pomazkov, (1929), p.9) And further, "it becomes quite clear that the main objective of each textbook on general accounting is the proper explaining of the theoretical and practical peculiarities of this method." (Pomazkov, (1929) pp.9). The first attempts to build an accounting theory based on the axiomatic method were limited to compiling the appropriate correspondence of accounts. The accepted system of axioms in the axiomatic theory of accounting was to clearly determine which account was subject to debiting and which one to crediting. There was not used a formal language of the axiomatic theory of accounting systems of . P Russian and A. A. Kolgotin , nor there were the rules for derivation from accepted axioms.

## 2.2. The axiomatic theory of Alexandr Pavlovich Rudanovskiy

The next attempt to introduce the axiomatic method into the accounting methodology was made by Alexander Rudanovsky within the framework of his proposed "theory of balance sheet accounting" (Rudanovskiy, (1925), (1928a), (1928b)). As axioms of the "Balance accounting theory" of A. P. Rudanovskiy three axioms are taken: the axiom of Pacioli, the axiom of Pisani's axiom and the one of Lyautey and Guilbaux. The axiom of Pacioli was stated A. P. Rudanovsky as follows, "the axiom of Pacioli, ie, equation of assets and liabilities through the budget, from the point of view of the accounting coordination, tends to be the only simplest form of possible functional dependence within the balance between assets, liabilities and budget" (Rudanovsky, (1928b), pp.116-117). Pacioli's axiom can be written as follows:

$A + L + B = 0$ , where A – assets, L – liabilities, B – budget.

A.P. Rudanovskiy interpretes the axiom of Pisani : "... in any private balance there is an equation between the dynamic and static parts of the balance or, as it is appropriate to say in counting language, there is equality of the dynamic balance to the static one, notably, the Pisani axiom is applied in each particular balance sheet "(Rudanovsky, (1928a), pp. 56-57). And also in another stating, which makes connection of changes in the asset, liability and budget of the balance sheet with the time factor, "...from the point of view of coordination, the second accounting axiom of Pisani's, is nothing more than the simplest form of dividing the balance into two equal parts, one depends on time, and the other depends only on spatial relations, equation being always feasible if the alterations the time makes to a given state of balance are known "(Rudanovskiy, (1928b), p.118). The symbolic representation of the Pisani axiom is as follows:  $F_1(A, L, B) = F_2[A(t), L(t), B(t)]$  where,  $F_1(A, L, B)$  – assets (A), liabilities (L), budget (B) of the balance sheet independent of time factor or in other words – static part of accounting balance;  $F_2[A(t), L(t), B(t)]$  – assets(A(t)), liabilities (L(t)), budget (B(t)) of the balance sheet dependent of the time factor or in the other words –dynamic part of the accounting balance. Particularly, according to A. p. Rudanovsky, Pisani's axiom can be written as:

$$A - L = B$$

Explaining the reduced formula of a particular case of Pisani's axiom A. P. Rudanovsky wrote" "As in the private case the budget is a dynamic balance, the above formula is a particular case of the balance equation of balance dynamic remainder with that of the static one , i.e being a subexpression of Pisani's axiom " (Rudanovskiy, (1928a), p.92). AP Rudanovskiy related the equation  $A = L$  on condition that  $B = 0$ , and where A is a static part of the balance sheet, and L is the dynamic part of the balance sheet to a particular case or "necessary consequence" (Rudanovsky, (1928a), pp.93) of Pisani's axioms The third axiom of the theory of the balance accounting is an axiom Lyautey and Guilbaeux, treated by A. P. Rudanovsky in two ways. On the one hand, one can state the continuity of change in the balance sheet, "...from the point of

view of coordination, the third Lyautey's axiom of accounting is none other, as the assumption that various changes in balance, , occur uninterruptedly over time " (Rudanovskiy, (1928b), p.119)." As interpreted here the third axiom can be expressed symbolically:

$$F(A', L', B', t') - F(A, L, B, t) = (t' - t) \varphi (A, L, B, t)$$

where,  $F(A', L', B', t') - F(A, L, B, t)$  – growth of balance sheet since  $t_0$  (t), till  $t_1$  (t'). This growth can be shown as  $dB$ , and  $dB \neq 0$ . In this case, A. P. Rudanovsky axiomatized "uninterrupted change of balance currency" (Rudanovskiy, (1928b), p.119).

On the other hand, using the Lyautey and Guilbeaux axiom A. P. Rudanovskiy asserted that it was inappropriate to blend assets and liabilities of the balance sheet, "being inappropriate to blend the various parties i.e. parts of the asset with those of liability can be considered the third axiom of accounting – the one of Lyautey and Guilbeaux, ... , thus further clarifying the heterogeneity of the structure of debit and credit in balance" (Rudanovsky, (1925), pp.12). Moreover, ".....the asset credit should not be blended with a liability credit as the asset credit is payment by belongings, whereas liability credit is payable to any person; similarly, one cannot blend and asset debit with liability debit, for the debit of the asset is received by belongings, and the debit of the liability is owed by any person (Lyautey and Guilbeaux)" (Rudanovsky, (1925), pp.16). Factually, taking the axiom of Lyautey and Guilbeaux, A. P. Rudanovsky refused the second postulate of Pacioli (in its modern interpretation), as if it is not possible to mix (sum) debit asset with debit liability and asset credit with liability credit of total turnover, so the second postulate is not maintained. Considering all three axioms of the theory of balance sheet accounting collectively, it is possible to note that Pacioli's axiom (the first axiom) and the axiom Leotia and Guilbaud (third axiom as in the first and in the second interpretation) result in Pisani axiom (the second axiom). According to A. P. Rudanovsky Pacioli's axiom resulting in the Pisani's axiom could be understood by the wording and a symbolic record of the Pacioli's axioms. The authentic wording of Pacioli's first postulate is as follows, "... all entries in the General Ledger will be related to each other, and you can never debit anything without making a corresponding entry in the credit, put anything on credit without debiting the same amount. this rule resulted in making the balance while closing the General Ledger and the balance amount receivable should equal the balance amount of the creditors" (Pacioli, (2009), p.49). The axiom of Lyautey and Guilbeaux (third axiom) as "the continuous change of balance currency» (Rudanovsky, (1928b), p.119) ( $F(A', L', B', t') - F(A, L, B, t)$ ), appears to be as none other than the first part of Pisani's axiom. In this regard, the third axiom evolved from the second axiom, i.e. the axiom of Lyautey and Guilbeaux (the third axiom) is and not independent of the Pisani axiom (the second axiom). Axiomatizing the continuity of changes in the balance sheet currency it is prudent to take into account financial results. The second interpretation of the axiom of Lyautey and Guilbeaux, as already noted, resulted in negating the second axiom of Pacioli (in its modern interpretation). Thus, it can be stated that the basis of the A. P. Rudanovsky's "Theory of balance sheet accounting" is based on the E. Pisani's axiom about static and dynamic parts of the accounting balance sheet being equidimensional. The author prioritizes the Pisani's axiom "... my theory of accounting is not based on the Pacioli's axiom in equation of the asset and liability in balance sheet, if one follows the Pacioli's axiom, according to the axiom this equation is always feasible, no matter how incorrect evaluation of assets and liabilities can be and how can they be distant from the actual equation , the Pisani axiom requiring to separate static part of the balance from the dynamic one evolved a new method of making a balance sheet, named by me as a rate setting method" (Rudanovsky, (1928b), p.18). In this case, we can agree with I. F. Schär, who claimed that A. P. Rudanovsky, first of all developed dynamic theory of accounting, "In recent years, some

authors, including E. Schmalenbach, Köln, E. Pisani, Rom, A. P. Rudanovskiy from Moscow, introduced in the terminology of accounting two new terminological borrowings from mathematical physics, statics and dynamics, which approximate the balance of assets and liabilities of the company and the revenue balance " (Schär, (1932), p.55).

### **2.3. Axiomatic theories of Radik Sagitzyanovich Rashitov**

At the final stage of the development of the idea of axiomatizing the theory of accounting, Radik Sagitzyanovich Rashitov attempted to apply the axiomatic method in accounting. R. S. Rashitov created three formally axiomatic accounting models. The first formal axiomatic model, according to the author, described the existing accounting system was aimed at increasing the rigor and accuracy of accounting constructions, the second and third ones were aimed at using the capabilities of computers and the automation process of accounting. Since the problem of accounting automation and the one of creating accounting models can be automated by computer, are not of interest for the objectives of our study, the analysis of the second and third axiomatic model of R. S. Rashitov will be omitted. Consider the first formal axiomatic accounting model of R.S. Rashitov. The formal axiomatic model of accounting was described by R.S. Rashitov in several works: "Application of Mathematical Methods and Computers in Accounting in Trade" (Rashitov, (1976)), "Machine Processing of Accounting and Statistical Information" (Rashitov, (1979a)), "Logical and Mathematical Modeling in Accounting" (Rashitov, (1979b)) and in the abstract of the doctoral dissertation "Formal and Structural aspect of the Accounting Methodology" (Rashitov, (1985)). A detailed analysis of these works has showed that it is advisable to distinguish the "early" and "late" formal axiomatic accounting models of R.S. Rashitov. The "early" model was described in the works "Application of Mathematical Methods and Computers in Accounting in Trade" (Rashitov, (1976)) and "Machine Processing of Accounting and Statistical Information" (Rashitov, (1979a)). "Late" in the works: "Logical and Mathematical Modeling in Accounting" (Rashitov, (1979b)) and in the abstract of the doctoral dissertation "Formal and Structural aspect of the Accounting Methodology" (Rashitov, (1985)). We analyze formal axiomatic models of accounting proposed by P.S. Rashitov. The "early" axiomatic accounting model R.S. Rashitova was based on "fundamental principles", the concept of "economic process", "ideas about the economic process", "initial undefined concepts" and "postulates". In the work "The Use of Mathematical Methods and Computers in Accounting in Trade" (Rashitov, (1976)), six "principles" were laid down (Rashitov, (1976), pp. 65-66), one concept of the "economic process" (Rashitov, (1976), pp.66-67), eight "ideas about the economic process" (Rashitov, (1976), pp.67-70), twelve "initial undefined concepts" (Rashitov, (1976), p.73) and fifteen "postulates" (Rashitov, (1976), pp. 74-75). The work "Machine Processing of Accounting and Statistical Information" (Rashitov, (1979a)) presented nine "principles" (Rashitov, (1979a), pp.40-42), one concept of the "business process" (Rashitov, (1979a), pp.42), eight "ideas about the economic process" (Rashitov, (1979a), pp.42-44), twelve "initial undefined notions" (Rashitov, (1979a), p.47) and fourteen "postulates" (Rashitov, (1979a), p. 47-48). The methodological status of "fundamental principles", "ideas about the economic process" is not entirely clear. The number and content of accepted postulates in the work (Rashitov, (1976)) is significantly different from the number and content of the postulates accepted in the work (Rashitov, (1979a)). The accepted system of postulates (the system of axioms) itself does not meet the requirements of consistency, completeness and independence. Despite the different composition and number of postulates (axioms), the absence of formal rules for deriving from the accepted system of postulates (axioms), the conclusions obtained (derived concepts and terms, the system of interconnection of basic concepts and terms, definitions, lemmas and theorems of the first model) in the work (Rashitov, (1976)) and (Rashitov, (1979a)) remain almost identical (see (Rashitov, (1976), pp. 76-95) and (Rashitov, (1979a), pp. 49-57)).

Moreover, the definition of derived concepts and terms is in no way connected with the stated postulates, there is no procedure for drawing concepts and terms from accepted postulates and, as a result, stated concepts and terms cannot be considered a consequence of accepted postulates (axioms) drawn within the framework of the axiomatic accounting theory. The very early formal axiomatic accounting model itself cannot be treated as a formal axiomatic theory to consequently apply the axiomatic method. "Late" formal axiomatic theory of accounting of R.S. Rashitov, like the "early" theory, was based on "starting points" (this concept was replaced by the notion of "fundamental principles"). The concepts of "economic process" and "economic transaction" (new concept), "ideas about the economic transaction", "initial undefined concepts" and "postulates", the initial principles of the theory were listed but not numbered (Rashitov, (1979b), pp. 34-38), the concepts of "economic process" and "economic transaction" were given (Rashitov, (1979b), pp.38), "ideas about the economic process" (which also do not have independent numbering) are stated (Rashitov, (1979b), pp.39-42), thirteen "undefined concepts" are given (Rashitov, (1979b), pp.44) and eleven "postulates" were accepted (Rashitov, (1979b), pp.44-46) in the work "Logical and mathematical Modeling in Accounting" (Rashitov, (1979b)). In the abstract of the doctoral dissertation "Formal and Structural Aspect of the Accounting Methodology" (Rashitov, (1985)) R.S. Rashitov clarified the concepts of "economic process" and "economic transaction" (Rashitov, (1985), pp.17), stated the "logical assumption of a 'single model'" (Rashitov, (1985), pp.17), gave thirteen "undefined concepts" (Rashitov, (1985), pp.19) and accepted ten "postulates" (Rashitov, (1985), pp.19-20). Also, as in the "early" axiomatic theory of accounting, the methodological status of the "starting points", "ideas about the economic transaction", "the logical assumption of the 'single model'" remained unclear. As well as in the "early" formal axiomatic model of accounting, in the "late" model, despite the different composition of the postulates in the models, the drawings of definitions, theorems, lemmas and consequences were almost identical. This showed both the imperfection of the system of postulates (axioms) and the actual absence of the axiomatic (formal-axiomatic) theory of accounting in R.S. Rashitov's works. A change or rejection of any postulate (axioms) necessarily results in reduction of the possible consequences of the adopted system of postulates (axioms). This did not happen neither in the "early" nor in the "late" axiomatic accounting model of R.S. Rashitov. One can draw conclusions from both the "early" and the "late" system of principles (axioms) make the same. In this case, it is enough to recall the consequences to refuse the fifth postulate of Euclid (replacing it with an alternative postulate) in geometry. This refusal resulted in the appearing of non-Euclidean geometries; the first such geometry was proposed by N.I. Lobachevsky then Ya. Boyaya (the so-called hyperbolic geometry). This did not happen in axiomatic systems of R.S. Rashitov. Thus, both "early" and "late" axiomatic accounting systems cannot be recognized as axiomatic accounting theories in which the axiomatic method is consistently applied. Summing up the analysis of formal axiomatic systems of R.S. Rashitov it should be noted that with the help of making these systems, the author first of all tried to solve the problem of accounting automation, the task of improving the accounting methodology by applying the axiomatic method in accounting remained an open challenge. Further concept clarification of the of accounting ("strictly defined") and "evidence" in the form of theorems of well-known equalities in the accounting of R.S. Rashitov did not advance. Moreover, the statements of formal axiomatic systems proposed by R.S. Rashitov remain controversial.

### 3. CONCLUSION

Repeated attempts were undertaken to use the axiomatic method in Russian accounting. Thereby, applying axiomatic method attempts were undertaken to solve the current problems of accounting, and not to build an adequate axiomatic theory of accounting. I. P. Russiyan and A. A. Kolkotin introduced axioms into accounting to solve practical tasks of making the adequate

correspondence of accounts. A. P. Rudanovskiy developed the theory of dynamic balance accounting and to achieve this goal he replaced the Pacioli's axiom as the axiom of static accounting with the Pisani's axiom as the axiom of dynamic balance. Applying the axiomatic method R. S. Rashitov, first of all, tried to solve task of automation accounting, and in development of "accounting methodology" further than making more precise definitions and giving and "proof" in the form of theorems well-known in recording congruencies did not progress. Thus, the axiomatic theory of accounting, which would have a basic terminological system (basic conceptual apparatus or "alphabet" of the formal axiomatic system), rules for describing the fundamental objects of the theory (rules for making statements (formulas) in formalized theories), a valid system of axioms (or initial statements), as well as the rules for deriving from the adopted system of axioms (rules for transforming formulas in formalized theories) has not been created till now. All historical attempts to apply the axiomatic method in Russian accounting were of a private nature and were targeted at solving current accounting problems.

#### LITERATURE:

1. Ávila, H.E., Bravo, G., Scarano, E.R. (1988). *An axiomatic foundation of accounting*, Working Paper, Buenos Aires: Institute of Accounting Research, University of Buenos Aires.
2. Balzer, W., Mattessich, R. (1991). *An axiomatic basis of accounting: a structuralist reconstruction*. *Theory and Decision*, 30(3), (pp.213-243.)
3. Balzer, W. Mattessich, R. (2000). *Formalizing the basis of accounting*, in W. Balzer, J. D. Sneed, and C. U. Moulines, eds., *Structuralist Knowledge Representation – Paradigmatic Examples*. Amsterdam: Rodopi, Atlanta GA (Vol. 75 of the Poznan Studies in the Philosophy of the Sciences and Humanities), (pp.99-126.)
4. Carlson, M. L., Lamb J.W.(1981). *Constructing a theory of accounting – An axiomatic approach*. *The Accounting Review*, 56, July,(pp. 554-573)
5. Deguchi, H., Nakano, B. (1986). *Axiomatic foundations of vector accounting*. *Systems Research*, 3, 1, (pp. 31-39)
6. Galassi, G. (1978). *Sistemi contabili assiomatici e sistemi teorici deduttivi (Axiomatic accounting systems and theoretical deductive systems)*, Bologna: Patron Editore.
7. Gutiérrez, J. M. (1990). An axiomatic approach to inflation accounting, *IMA Journal of Mathematics Applied in Business and Industry*, 2, (pp.197-207)
8. Ijiri, Y. (1965). *Axioms and structures of conventional accounting measurement*. *The Accounting Review*. 40, January, (pp. 36-53)
9. Ijiri, Y. (1967). *The Foundations of Accounting Measures*, Englewood Cliffs, NJ: Prentice-Hall, Inc.
10. Ijiri, Y. (1971). Axioms for Historical cost valuation: A reply. *Journal of Accounting Research*, 9, 1, (pp.181-187).
11. Kolotkin, A.A. (1909). *Dve aksiomy v Bukhgalterii*. Grodno: Tipografiya E.I. Mikhaylovicha.
12. Kolchugin, S.V. (2019) Mathematization of the theory and methodology of accounting in the first half of the twentieth century. Proceedings of the 1<sup>st</sup> international scientific conference modern management trends and the digital economy: from regional development to global economic growth (*MTDE 2019*) T.: 81, (pp.735-739.)
13. Lunskiy, N.S. (1913) *Kratkiy uchebnik kommercheskoy bukhgalterii*. Tipographiya. G. Lissnera i D. Sobko.
14. Mattessich, R. (1957). Towards a General and Axiomatic Foundation of Accountancy-With an Introduction to the Matrix Formulation of Accounting Systems, *Accounting Research* 8, London, October, (pp. 328-355.)

15. Mattessich, R. (1973). *On the axiomatic formulation of accounting: Comment on Professor S. Saito's considerations*, *Sangyo Keiri*, 33, March, in Japanese, (p. 70-77) and April, (p. 71-75.)
16. Nachala Yevklida (1948). Moskva-Leningrad: OGIZ Gosudarstvennoye izdatel'stvo tekhniko-teoreticheskoy literatury.
17. Pacholi, L. (2009) *Traktat o Schetakh i Zapisyakh*. Moskva: Finansy i Statistika, Krasnodar: Prosveshcheniye-Yug
18. Pomazkov, N.S. (1929) *Schetnyye Teorii. Printsip Dvoystvennosti i Metod Dvoynoy zapisi*. Leningrad: Izdatel'stvo "Ekonomicheskoye obrazovaniye".
19. Rashitov, R.S. (1976) *Primeneniye Matematicheskikh Metodov i EVM v Bukhgalterskom Uchete v Torgovle*: Uchebnoye posobiye. M-vo torgovli RSFSR. Leningr. in-t sov. Torgovli im. F. Engelsa. - Leningrad: [LIST].
20. Rashitov, R. S., Mishin, K. F., Bochkov, N. N. (1979a) *Mashinnaya Obrabotka Uchoytno-statisticheskoy Informatsii*. Leningrad. M-vo torgovli RSFSR. Leningr. in-t sov. Torgovli im. F. Engel'sa.[LIST].
21. Rashitov, R. S. (1979b) *Logico-mathematiceskoe modelirovanie vBuhgalterskom Uchyote accounting*. Moscow. Finance.
22. Rashitov, R.S. (1985) *Formal'no-strukturnyy Aspekt MetodologiiBbukhgalterskogo Ucheta: avtoref. Competition for the degree of doctor of Sciences*. Leningr. fin.-ekon. in-t im. N.A. Voznesenskogo.
23. Rudanovskiy, A.P. (1925) *Teoriya Dcheta: Debet i Kredit kak Metod Ucheta Balansa*. Moskva.MAKIZ.
24. Rudanovskiy, A.P. (1928a) *Teoriya Balansovogo Ucheta. Vvedeniye v Teoriyu Balansovogo Ucheta. Balans kak Ob"yekt Ucheta*. Moskva. MAKIZ.
25. Rudanovskiy, A.P. (1928b) *Teoriya Balansovogo Ucheta. Otsenka kak Tsel' Balansovogo Ucheta. Schetnoye Ischisleniye*. Moskva. MAKIZ.
26. Russiyan, I.P. (1884) *Osnovaniya Dvoynoy Bukhgalterii*. Odessa. Typografia L. Nitche.
27. Sokolov, YA.V. (2005) *Osnovy Teorii Bukhgalterskogo Ucheta*. Moskva.Finansy i Statistika.
28. Stoll, R. (1968) *Mnozhestva. Logika. Aksiomaticheskiye Teorii*. Moskva. Prosveshcheniye.
29. Sher, I.F. (1926) *Bukhgalteriya i Balans*. Moskva, Ekonomicheskaya Zhizn'.
30. Schär, J. F. (1932) *Buchhaltung und Bilanz auf wirtschaftlicher, rechtlicher und mathematischer Grundlage für Juristen, Ingenieure, Kaufleute und Studierende der Betriebswirtschaftslehre mit einem Anhang: Buchhaltung und Bilanz bei Geldwertschwankungen*. Springer-Verlag Berlin Heidelberg GmbH.

# **E-PRIVACY REGULATION – NEW EUROPEAN FRAMEWORK FOR REGULATION ON PRIVACY AND ELECTRONIC COMMUNICATIONS DESIGNED TO PROTECT USER PRIVACY IN THE DIGITAL AGE**

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## **ABSTRACT**

*On September 18, 2019, the Presidency of the European Council published its proposed amendments to the Proposal for a Regulation Concerning the Respect for Private Life and the Protection of Personal Data in Electronic Communications (the "Draft ePrivacy Regulation"). The Draft ePrivacy Regulation will replace the existing ePrivacy and Electronic Communications Directive 2002 known as ePrivacy Directive and will complete the EU's framework for data protection and confidentiality of electronic communications. In this paper, the author will present ePrivacy as a new 'regulation' that will be a legal act and enforceable in its entirety across all member states, much like GDPR, bringing the new rules designed to maintain user privacy in the digital age. That's instead of a directive, which allows each member state to introduce its own mechanisms for the law provided they match the content of the original directive.*

**Keywords:** *data protection, digital market, electronic communications, ePrivacy, EU, personal data, privacy*

## **1. INTRODUCTION**

The Digital Single Market Strategy – also known as "DSM Strategy" has as an objective to increase trust in and the security of digital services. (A Digital Single Market Strategy for Europe, COM(2015) 192 final) The reform of the data protection framework, and in particular the adoption of Regulation (EU) 2016/679, the General Data Protection Regulation ("GDPR") (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1–88) was a key action to this end. The DSM Strategy also announced the review of Directive 2002/58/EC ("ePrivacy Directive") in order to provide a high level of privacy protection for users of electronic communications services and a level playing field for all market players. . (Čizmić, Boban and Zlatović, 2016). This proposal reviews the ePrivacy Directive, foreseeing in the DSM Strategy objectives and ensuring consistency with the GDPR. (Dal, 2019, p 21-33) The ePrivacy Directive ensured the protection of fundamental rights and freedoms, in particular the respect for private life, confidentiality of communications and the protection of personal data in the electronic communications sector. (Cabrio, 2018.) It also guaranteed the free movement of electronic communications data, equipment and services in the Union. (Boban, 2019) It implements in the Union's secondary law the fundamental right to the respect for private life, with regard to communications, as enshrined in Article 7 of the Charter of Fundamental Rights of the European Union ("Charter"). In line with the 'Better Regulation' requirements, the Commission carried out an ex post Regulatory Fitness and Performance Programme ("REFIT evaluation") of the ePrivacy Directive. It follows from the evaluation that the objectives and principles of the current framework remain sound. (George, Reutimann, and Tamò-Larrieux, 2019) A However, important technological and economic developments took place in the market since the last revision of the ePrivacy Directive in 2009. Consumers and businesses increasingly rely on new internet-based services enabling inter-personal communications such as Voice over IP, instant messaging and web-based e-mail services, instead of traditional communications services.



These Over-the-Top communications services ("OTTs") are in general not subject to the current Union electronic communications framework, including the ePrivacy Directive. Accordingly, the Directive has not kept pace with technological developments, resulting in a void of protection of communications conveyed through new services. (Proposal for a regulation of the European parliament and of the Council concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications- COM/2017/010 final - 2017/03 (COD) – ePrivacy) The proposal presents *lex specialis* to the GDPR and will particularise and complement it as regards electronic communications data that qualify as personal data. All matters concerning the processing of personal data not specifically addressed by the proposal are covered by the GDPR. The alignment with the GDPR resulted in the repeal of some provisions, such as the security obligations of Article 4 of the ePrivacy Directive. (Art. 4, ePrivacy)

## **2. THE LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY OF THE EPRIVACY AND ITS CONSISTENCY WITH OTHER EUROPEAN UNION POLICIES**

The ePrivacy Directive is part of the regulatory framework for electronic communications. In 2016, the Commission adopted the proposal for a Directive establishing the European Electronic Communications Code ("EECC") (Commission proposal for a Directive of the European Parliament and of the Council establishing the European Electronic Communications Code (Recast) (COM/2016/0590 final - 2016/0288 (COD)), which revises the framework. While the present proposal is not an integral part of the EECC, it partially relies on definitions provided therein, including that of 'electronic communications services'. Like the EECC, this proposal also brings OTT providers in its scope to reflect the market reality. In addition, the EECC complements this proposal by ensuring the security of electronic communications services (Mazur and Patakyová, 2019, p 219-241). The Radio Equipment Directive 2014/53/EU ("RED") (Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (OJ L 153, 22.5.2014, p. 62–106) ensures a single market for radio equipment. In particular, it requires that, before being placed on the market, radio equipment must incorporate safeguards to ensure that the personal data and privacy of the user are protected. Under the RED and the European Standardisation Regulation (EU) 1025/2012 (Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12–33), the Commission is empowered to adopt measures. This proposal does not affect the RED. The proposal does not include any specific provisions in the field of data retention. It maintains the substance of Article 15 of the ePrivacy Directive and aligns it with specific wording of Article 23 of the GDPR, which provides grounds for Member States to restrict the scope of the rights and obligations in specific articles of the ePrivacy Directive. (Art. 15 and Art. 23 GDPR) Therefore, Member States are free to keep or create national data retention frameworks that provide, *inter alia*, for targeted retention measures, in so far as such frameworks comply with Union law, taking into account the case-law of the Court of Justice on the interpretation of the ePrivacy Directive and the Charter of Fundamental Rights (Joined Cases C-293/12 and C-594/12 *Digital Rights Ireland* and *Seitlinger and Others*, ECLI:EU:C:2014:238; Joined Cases C-203/15 and C-698/15 *Tele2 Sverige AB* and *Secretary of State for the Home Department*,

ECLI:EU:C:2016:970.). Finally, the proposal does not apply to activities of Union institutions, bodies and agencies. However, its principles and relevant obligations as to the right to respect for private life and communications in relation to the processing of electronic communications data have been included in the Proposal for a Regulation repealing Regulation (EC) No 45/2001 (Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.1.2001, p. 1–22).

### **2.1. Legal basis**

Article 16 and Article 114 of the Treaty on the Functioning of the European Union ("TFEU") are the relevant legal bases for the proposal. Article 16 TFEU introduces a specific legal basis for the adoption of rules relating to the protection of individuals with regard to the processing of personal data by Union institutions, by Member States when carrying out activities falling within the scope of Union law, and rules relating to the free movement of such data. Since an electronic communication involving a natural person will normally qualify as personal data, the protection of natural persons with regard to the privacy of communications and processing of such data, should be based on Article 16. (Art. 16, TFEU) In addition, the proposal aims at protecting communications and related legitimate interests of legal persons. The meaning and scope of the rights under Article 7 of the Charter shall, in accordance with Article 52(3) of the Charter, be the same as those laid down in Article 8(1) of the European Convention for the Protection of Human Rights and Fundamental Freedoms ("ECHR"). As regards the scope of Article 7 of the Charter, the case-law of the Court of Justice of the European Union ("CJEU") (C-450/06 Varec SA, ECLI:EU:C:2008:91, §48) and of the European Court of Human Rights (ECHR, judgments Niemietz v Germany, judgment of 16 December 1992, Series A n° 251-B, §29; Société Colas Est and Others v France, no 37971/97, §41; ECHR 2002-III; Peck v The United Kingdom no 44647/98, §57, ECHR 2003-I; and also Vinci Construction and GTM Génie Civil et Services v. France, n°s. 63629/10 and 60567/10, § 63, 2 April 2015) confirm that professional activities of legal persons may not be excluded from the protection of the right guaranteed by Article 7 of the Charter and Article 8 of the ECHR. (Art. 7 and Art. 8 ECHR) Since the initiative pursues a twofold purpose and that the component concerning the protection of communications of legal persons and the aim of achieving the internal market for those electronic communications and ensure its functioning in this regard cannot be considered merely incidental, the initiative should, therefore, also be based on Article 114 of the TFEU. (Art. 114 TFEU)

### **2.2. Subsidiarity**

Respect for communications is a fundamental right recognised in the Charter. Content of electronic communications may reveal highly sensitive information about the end-users involved in the communication. Similarly, metadata derived from electronic communications, may also reveal very sensitive and personal information, as expressly recognised by the CJEU (Joined Cases C-293/12 and C-594/12 Digital Rights Ireland and Seitlinger and Others, ECLI:EU:C:2014:238; Joined Cases C-203/15 and C-698/15 Tele2 Sverige AB and Secretary of State for the Home Department, ECLI:EU:C:2016:970). The majority of Member States also recognise the need to protect communications as a distinct constitutional right. Whilst it is possible for Member States to enact policies which ensure that this right is not breached, this would not be achieved in a uniform way in the absence of Union rules and would create restrictions on cross-border flows of personal and non-personal data related to the use of electronic communications services. Finally, to maintain consistency with the GDPR, it is necessary to review the ePrivacy Directive and adopt measures to bring the two instruments in

line. The technological developments and the ambitions of the DSM strategy have strengthened the case for action at the Union level. The success of the EU DSM depends on how effectively the EU brings down national silos and barriers and seize the advantages and economies of a European digital single market. Moreover, as internet and digital technologies know no borders, the dimension of the problem goes beyond the territory of a single Member State. Member States cannot effectively solve the problems in the current situation. A level playing field for economic operators providing substitutable services and equal protection of end-users at Union level are requirements for the DSM to work properly. (ePrivacy proposal, COM/2017/010 final - 2017/03 (COD))

### **2.3. Proportionality**

To ensure the effective legal protection of respect for privacy and communications, an extension of scope to cover OTT providers is necessary. While several popular OTT providers already comply, or partially comply with the principle of confidentiality of communications, the protection of fundamental rights cannot be left to self-regulation by industry. Also, the importance of the effective protection of privacy of terminal equipment is increasing as it has become indispensable in personal and professional life for the storage of sensitive information. The implementation of the ePrivacy Directive has not been effective to empower end-users. Therefore the implementation of the principle by centralising consent in software and prompting users with information about the privacy settings thereof, is necessary to achieve the aim. Regarding the enforcement of this Regulation, it relies on the supervisory authorities and the consistency mechanism of the GDPR. Moreover, the proposal allows Member States to take national derogatory measures for specific legitimate purposes. Thus, the proposal does not go beyond what is necessary to achieve the aims and complies with the principle of proportionality as set out in Article 5 of the Treaty on European Union. The obligations put on affected services are kept to a level as minimum as possible, while not impinging on the fundamental rights concerned. (ePrivacy proposal, COM/2017/010 final - 2017/03 (COD))

### **2.4. Consistency with GDPR**

The Commission puts forward a proposal for a Regulation in order to ensure consistency with the GDPR and legal certainty for users and businesses alike by avoiding divergent interpretation in the Member States. A Regulation can ensure an equal level of protection throughout the Union for users and lower compliance costs for businesses operating across borders. (ePrivacy proposal, COM/2017/010 final - 2017/03 (COD))

## **3. EPRIVACY REGULATION – GENERAL PROVISIONS**

The European Union ePrivacy regulation has been published to broaden the scope of the current ePrivacy Directive and align the various online privacy rules that exist across EU member states. The regulation takes on board all definitions of privacy and data that were introduced within the General Data Protection Regulations, and acts to clarify and enhance it. In particular, the areas of unsolicited marketing, Cookies and Confidentiality are covered in a more specific context. The European union has always undertaken to create wide legal coverage for member country citizens and also to amalgamate the laws in which they operate under whenever commonage is found. In the online world, there have been many aspects that have expanded over time and with that the need to expand the laws which encompass them have been created. Broadly speaking, data privacy in the EU is covered under the General Data Protection Regulation and the ePrivacy Regulation. Understanding the differences between the GDPR and the ePrivacy regulation is important to private sector and business. On the first place is the aim of the regulation to align the online standard of privacy with the level that is covered under the GDPR.

The same authority responsible for the GDPR is also responsible for the ePrivacy regulations.<sup>1</sup> In general, ePrivacy regulation lays down rules regarding the protection of fundamental rights and freedoms of natural and legal persons in the provision and use of electronic communications services, and in particular, the rights to respect for private life and communications and the protection of natural persons with regard to the processing of personal data. Also, the Regulation ensures free movement of electronic communications data and electronic communications services within the Union, which shall be neither restricted nor prohibited for reasons related to the respect for the private life and communications of natural and legal persons and the protection of natural persons with regard to the processing of personal data. (Art. 1, p. 1 and p. 2, ePrivacy) This Regulation applies to the processing of electronic communications data carried out in connection with the provision and the use of electronic communications services and to information related to the terminal equipment of end-users. (Art. 2, p. 1, ePrivacy)

### **3.1. Territorial scope and representative of ePrivacy**

The ePrivacy Regulation applies to the provision of electronic communications services to end-users in the Union, irrespective of whether a payment of the end-user is required; to the use of such services and to the protection of information related to the terminal equipment of end-users located in the Union. (Art. 3, p. 1, ePrivacy) Where the provider of an electronic communications service is not established in the Union it shall designate in writing a representative in the Union. (Art. 3, p. 2, ePrivacy)

### **3.2. Definitions**

The ePrivacy regulation applies to the following definitions:

- a) 'electronic communications data' means electronic communications content and electronic communications metadata;
- b) 'electronic communications content' means the content exchanged by means of electronic communications services, such as text, voice, videos, images, and sound;
- c) 'electronic communications metadata' means data processed in an electronic communications network for the purposes of transmitting, distributing or exchanging electronic communications content; including data used to trace and identify the source and destination of a communication, data on the location of the device generated in the context of providing electronic communications services, and the date, time, duration and the type of communication;
- d) 'publicly available directory' means a directory of end-users of electronic communications services, whether in printed or electronic form, which is published or made available to the public or to a section of the public, including by means of a directory enquiry service;
- e) 'electronic mail' means any electronic message containing information such as text, voice, video, sound or image sent over an electronic communications network which can be stored in the network or in related computing facilities, or in the terminal equipment of its recipient;
- f) 'direct marketing communications' means any form of advertising, whether written or oral, sent to one or more identified or identifiable end-users of electronic communications services, including the use of automated calling and communication systems with or without human interaction, electronic mail, SMS, etc.;
- g) 'direct marketing voice-to-voice calls' means live calls, which do not entail the use of automated calling systems and communication systems;
- h) 'automated calling and communication systems' means systems capable of automatically initiating calls to one or more recipients in accordance with instructions set for that system,

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<sup>1</sup> See Privacy trust, <https://www.privacytrust.com/guidance/gdpr-vs-eprivacy-regulation.html> (23. 09. 2019.)

and transmitting sounds which are not live speech, including calls made using automated calling and communication systems which connect the called person to an individual. (Art. 4, p. 3, ePrivacy)

Besides definitions given above for the purposes of Regulation, following definitions shall also apply:

- a) the definitions in Regulation (EU) 2016/679 (GDPR);
- b) the definitions of ‘electronic communications network’, ‘electronic communications service’, ‘interpersonal communications service’, ‘number-based interpersonal communications service’, ‘number-independent interpersonal communications service’, ‘end-user’ and ‘call’ in points (1), (4), (5), (6), (7), (14) and (21) respectively of Article 2 of [Directive establishing the European Electronic Communications Code];
- c) the definition of ‘terminal equipment’ in point (1) of Article 1 of Commission Directive 2008/63/EC . (Commission Directive 2008/63/EC of 20 June 2008 on competition in the markets in telecommunications terminal equipment (OJ L 162, 21.6.2008, p. 20–26). (Art. 4, p. 1, ePrivacy) For the purposes of point (b) of paragraph 1, the definition of ‘interpersonal communications service’ includes services which enable interpersonal and interactive communication merely as a minor ancillary feature that is intrinsically linked to another service. (Art. 4, p. 2, ePrivacy)

#### **4. PROTECTION OF ELECTRONIC COMMUNICATIONS OF NATURAL AND LEGAL PERSONS AND OF INFORMATION STORED IN THEIR TERMINAL EQUIPMENT**

According to ePrivacy regulation in Chapter II., it has given following provisions:

- Confidentiality of electronic communications data  
Electronic communications data shall be confidential. Any interference with electronic communications data, such as by listening, tapping, storing, monitoring, scanning or other kinds of interception, surveillance or processing of electronic communications data, by persons other than the end-users, shall be prohibited, except when permitted by this Regulation. (Art. 5, ePrivacy)
- Permitted processing of electronic communications data  
Providers of electronic communications networks and services may process electronic communications data if: it is necessary to achieve the transmission of the communication, for the duration necessary for that purpose; or it is necessary to maintain or restore the security of electronic communications networks and services, or detect technical faults and/or errors in the transmission of electronic communications, for the duration necessary for that purpose. (Art. 6, p. 1, ePrivacy) Providers of electronic communications services may process electronic communications metadata if: it is necessary to meet mandatory quality of service requirements pursuant to [Directive establishing the European Electronic Communications Code] or Regulation (EU) 2015/2120<sup>2</sup> for the duration necessary for that purpose; or it is necessary for billing, calculating interconnection payments, detecting or stopping fraudulent, or abusive use of, or subscription to, electronic communications services; or the end-user concerned has given his or her consent to the processing of his or her communications metadata for one or more specified purposes, including for the provision of specific services to such end-users, provided that the purpose or purposes

<sup>2</sup> Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users’ rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (OJ L 310, 26.11.2015, p. 1–18).

concerned could not be fulfilled by processing information that is made anonymous. (Art. 6, p. 2, ePrivacy) Providers of the electronic communications services may process electronic communications content only: for the sole purpose of the provision of a specific service to an end-user, if the end-user or end-users concerned have given their consent to the processing of his or her electronic communications content and the provision of that service cannot be fulfilled without the processing of such content; or if all end-users concerned have given their consent to the processing of their electronic communications content for one or more specified purposes that cannot be fulfilled by processing information that is made anonymous, and the provider has consulted the supervisory authority. Points (2) and (3) of Article 36 of Regulation (EU) 2016/679 shall apply to the consultation of the supervisory authority. (Art. 6, p. 3, ePrivacy)

- **Storage and erasure of electronic communications data**  
Without prejudice to point (b) of Article 6(1) and points (a) and (b) of Article 6(3), the provider of the electronic communications service shall erase electronic communications content or make that data anonymous after receipt of electronic communication content by the intended recipient or recipients. Such data may be recorded or stored by the end-users or by a third party entrusted by them to record, store or otherwise process such data, in accordance with Regulation (EU) 2016/679. (Art. 7. p. 1, ePrivacy) Without prejudice to point (b) of Article 6(1) and points (a) and (c) of Article 6(2), the provider of the electronic communications service shall erase electronic communications metadata or make that data anonymous when it is no longer needed for the purpose of the transmission of a communication. (Art. 7. p. 2, ePrivacy) Where the processing of electronic communications metadata takes place for the purpose of billing in accordance with point (b) of Article 6(2), the relevant metadata may be kept until the end of the period during which a bill may lawfully be challenged or a payment may be pursued in accordance with national law. (Art. 7. p. 3, ePrivacy)
- **Protection of information stored in and related to end-users' terminal equipment**  
The use of processing and storage capabilities of terminal equipment and the collection of information from end-users' terminal equipment, including about its software and hardware, other than by the end-user concerned shall be prohibited, except on the following grounds: it is necessary for the sole purpose of carrying out the transmission of an electronic communication over an electronic communications network; or the end-user has given his or her consent; or it is necessary for providing an information society service requested by the end-user; or if it is necessary for web audience measuring, provided that such measurement is carried out by the provider of the information society service requested by the end-user (Art. 8. p. 1, ePrivacy). The collection of information emitted by terminal equipment to enable it to connect to another device and, or to network equipment shall be prohibited, except if: it is done exclusively in order to, for the time necessary for, and for the purpose of establishing a connection; or a clear and prominent notice is displayed informing of, at least, the modalities of the collection, its purpose, the person responsible for it and the other information required under Article 13 of Regulation (EU) 2016/679 where personal data are collected, as well as any measure the end-user of the terminal equipment can take to stop or minimise the collection. The collection of such information shall be conditional on the application of appropriate technical and organisational measures to ensure a level of security appropriate to the risks, as set out in Article 32 of Regulation (EU) 2016/679, have been applied. (Art. 8. p. 2, ePrivacy) The information to be provided pursuant to point (b) of paragraph 2 may be provided in combination with standardized icons in order to give a meaningful overview of the collection in an easily visible,

intelligible and clearly legible manner. (Art. 8. p. 3, ePrivacy) The Commission shall be empowered to adopt delegated acts in accordance with Article 27 determining the information to be presented by the standardized icon and the procedures for providing standardized icons. (Art. 8. p. 1, ePrivacy)

- Consent

The definition of and conditions for consent provided for under Articles 4(11) and 7 of Regulation (EU) 2016/679/EU shall apply. (Art. 9. p. 1, ePrivacy) Without prejudice to paragraph 1, where technically possible and feasible, for the purposes of point (b) of Article 8(1), consent may be expressed by using the appropriate technical settings of a software application enabling access to the internet. (Art. 9. p. 2, ePrivacy) End-users who have consented to the processing of electronic communications data as set out in point (c) of Article 6(2) and points (a) and (b) of Article 6(3) shall be given the possibility to withdraw their consent at any time as set forth under Article 7(3) of Regulation (EU) 2016/679 and be reminded of this possibility at periodic intervals of 6 months, as long as the processing continues. (Art. 9. p. 3, ePrivacy)

- Information and options for privacy settings to be provided

Software placed on the market permitting electronic communications, including the retrieval and presentation of information on the internet, shall offer the option to prevent third parties from storing information on the terminal equipment of an end-user or processing information already stored on that equipment. (Art. 10. p. 1, ePrivacy) Upon installation, the software shall inform the end-user about the privacy settings options and, to continue with the installation, require the end-user to consent to a setting. (Art. 10. p. 2, ePrivacy) In the case of software which has already been installed on 25 May 2018, the requirements under paragraphs 1 and 2 shall be complied with at the time of the first update of the software, but no later than 25 August 2018. (Art. 10. p. 3, ePrivacy)

- Restrictions

Union or Member State law may restrict by way of a legislative measure the scope of the obligations and rights provided for in Articles 5 to 8 where such a restriction respects the essence of the fundamental rights and freedoms and is a necessary, appropriate and proportionate measure in a democratic society to safeguard one or more of the general public interests referred to in Article 23(1)(a) to (e) of Regulation (EU) 2016/679 or a monitoring, inspection or regulatory function connected to the exercise of official authority for such interests. (Art. 11. p. 1, ePrivacy) Providers of electronic communications services shall establish internal procedures for responding to requests for access to end-users' electronic communications data based on a legislative measure adopted pursuant to paragraph 1. They shall provide the competent supervisory authority, on demand, with information about those procedures, the number of requests received, the legal justification invoked and their response. (Art. 11. p. 2, ePrivacy)

## **5. PROTECTION OF NATURAL AND LEGAL PERSONS' RIGHTS TO CONTROL ELECTRONIC COMMUNICATIONS**

Natural and legal persons' rights to control electronic communications are given under following provisions:

- Presentation and restriction of calling and connected line identification

Where presentation of the calling and connected line identification is offered in accordance with Article [107] of the [Directive establishing the European Electronic Communication Code], the providers of publicly available number-based interpersonal communications

services shall provide the following: the calling end-user with the possibility of preventing the presentation of the calling line identification on a per call, per connection or permanent basis; the called end-user with the possibility of preventing the presentation of the calling line identification of incoming calls; the called end-user with the possibility of rejecting incoming calls where the presentation of the calling line identification has been prevented by the calling end-user; the called end-user with the possibility of preventing the presentation of the connected line identification to the calling end-user. 2. The possibilities referred to in points (a), (b), (c) and (d) of paragraph 1 shall be provided to end-users by simple means and free of charge. (Art. 12. p. 1, ePrivacy)

- **Exceptions to presentation and restriction of calling and connected line identification**  
Regardless of whether the calling end-user has prevented the presentation of the calling line identification, where a call is made to emergency services, providers of publicly available number-based interpersonal communications services shall override the elimination of the presentation of the calling line identification and the denial or absence of consent of an end-user for the processing of metadata, on a per-line basis for organisations dealing with emergency communications, including public safety answering points, for the purpose of responding to such communications. (Art. 13. p. 1, ePrivacy) Member States shall establish more specific provisions with regard to the establishment of procedures and the circumstances where providers of publicly available number-based interpersonal communication services shall override the elimination of the presentation of the calling line identification on a temporary basis, where end-users request the tracing of malicious or nuisance calls. (Art. 13. p. 1, ePrivacy)
- **Incoming call blocking**  
Providers of publicly available number-based interpersonal communications services shall deploy state of the art measures to limit the reception of unwanted calls by end-users and shall also provide the called end-user with the following possibilities, free of charge: to block incoming calls from specific numbers or from anonymous sources and to stop automatic call forwarding by a third party to the end-user's terminal equipment. (Art. 14. p. 1, ePrivacy)
- **Publicly available directories**  
The providers of publicly available directories shall obtain the consent of end-users who are natural persons to include their personal data in the directory and, consequently, shall obtain consent from these end-users for inclusion of data per category of personal data, to the extent that such data are relevant for the purpose of the directory as determined by the provider of the directory. Providers shall give end-users who are natural persons the means to verify, correct and delete such data. (Art. 15. p. 1, ePrivacy) Also, the providers of a publicly available directory shall inform end-users who are natural persons whose personal data are in the directory of the available search functions of the directory and obtain end-users' consent before enabling such search functions related to their own data. (Art. 15. p. 2, ePrivacy) It is also written that the providers of publicly available directories shall provide end-users that are legal persons with the possibility to object to data related to them being included in the directory. Providers shall give such end-users that are legal persons the means to verify, correct and delete such data. (Art. 15. p. 3, ePrivacy) The possibility for end-users not to be included in a publicly available directory, or to verify, correct and delete any data related to them shall be provided free of charge. (Art. 15. p. 4, ePrivacy)



- Unsolicited communications

Natural or legal persons may use electronic communications services for the purposes of sending direct marketing communications to end-users who are natural persons that have given their consent. (Art. 16. p. 1, ePrivacy) Where a natural or legal person obtains electronic contact details for electronic mail from its customer, in the context of the sale of a product or a service, in accordance with Regulation (EU) 2016/679, that natural or legal person may use these electronic contact details for direct marketing of its own similar products or services only if customers are clearly and distinctly given the opportunity to object, free of charge and in an easy manner, to such use. The right to object shall be given at the time of collection and each time a message is sent. (Art. 16. p. 2, ePrivacy) Without prejudice to paragraphs 1 and 2, natural or legal persons using electronic communications services for the purposes of placing direct marketing calls shall: present the identity of a line on which they can be contacted; or present a specific code/or prefix identifying the fact that the call is a marketing call. (Art. 16. p. 3, ePrivacy)

- Information about detected security risks

In the case of a particular risk that may compromise the security of networks and electronic communications services, the provider of an electronic communications service shall inform end-users concerning such risk and, where the risk lies outside the scope of the measures to be taken by the service provider, inform end-users of any possible remedies, including an indication of the likely costs involved. (Art. 16, p. 1, ePrivacy)

## **6. INDEPENDENT SUPERVISORY AUTHORITIES AND ENFORCEMENT (PEANALITES)**

The European Data Protection Board, established under Article 68 of Regulation (EU) 2016/679, shall have competence to ensure the consistent application of this Regulation. To that end, the European Data Protection Board shall exercise the tasks laid down in Article 70 of Regulation (EU) 2016/679. The Board shall also advise the Commission on any proposed amendment of this Regulation and examine, on its own initiative, on request of one of its members or on request of the Commission, any question covering the application of this Regulation and issue guidelines, recommendations and best practices in order to encourage consistent application of this Regulation (Art. 19, ePrivacy). For the purpose of this Article, Chapter VII of Regulation (EU) 2016/679 shall apply to infringements of this Regulation. (Art. 23, p. 1, ePrivacy) Infringements of the following provisions of this Regulation shall, in accordance with paragraph 1, be subject to administrative fines up to EUR 10 000 000, or in the case of an undertaking, up to 2 % of the total worldwide annual turnover of the preceding financial year, whichever is higher – like given by GDPR. (Art. 23, p. 2, ePrivacy)

## **7. MAIN DIFFERENCES BETWEEN ePRIVACY REGULATION AND GDPR**

The General Data Protection Regulation (GDPR) was created to align the data privacy laws across all EU countries. It came into effect and replaced the Data Protection Directive 95/46/EC. with major update that the processing of any EU citizens' information is now protected, regardless of whether the information processing is done within the EU or not, and regardless of where the retailer originates from. Any business owner of firm from public sector around the globe that is processing personal data of EU citizens is bound by law to protect their personal data. The idea of traffic data has been expanded in the GDPR to include all metadata that derives as a result of the communications. The GDPR also strengthens the area of consent to how a user's personal information can be used or whether it can be shared. It also makes it easy for users to access their personal data and a requirement for all businesses and websites that take any information from any user to maintain the information and make it available to the user if

requested. An important ‘right to be forgotten’ is regulated for under the GDPR and a right to data portability (Boban, 2019, p 50). Each regulation was drawn up to reflect a different segment of EU law. The GDPR was created to enshrine Article 8 of the European Charter of Human Rights in terms of protecting personal data, while the ePrivacy regulation was created to enshrine Article 7 of the charter in respect to a person’s private life. The private sphere of the end user is covered under the ePrivacy regulations, making it a requirement for a user’s privacy to be protected at every stage of every online interaction. It is important to remember that the ePrivacy regulation was created to complement and particularize the GDPR, so the rules of the GDPR are always relevant and an overall part of the legislative aspects of the ePrivacy. The ePrivacy directive takes the broad online retail sector into account in terms of how personal information might be used and in this sense is what it adds to the overall regulations that make up the GDPR (Sharma, A., et al, 2018.). The ePR regulations now include any type of communications, including emails and text messages, to be consented to before being used. Marketers will not be able to send emails or text without prior permission from each email or mobile account holder (unsolicited marketing). According to new regulations cookies will now be tracked within software and the user’s browser within settings that each user can change to their needs as well as it will be published in cookie policies published on websites. This changes previous regulations which made each website request the ability to use cookies from each user. Also, since the ePrivacy regulations are an add on to the existing ePrivacy directive, one aim was to broaden the scope to include online communications providers under the same requirements as traditional telecommunications providers. Providers of any electronic communication service are required to secure all communications through the best available techniques. This creates a need for websites to stay technologically up to date equipped with the best safety features available on the market. The new provisions create the necessity for metadata to be treated the same as the actual content of the communication that it is facilitating being sent. It prohibits the interception of any such communication except where authorized by an EU member state specifically under law (such as within a criminal investigation process).

## 8. CONCLUSION

The ePrivacy regulations are on track to expand the GDPR in terms of applicability in electronic communications. When we compare GDPR and ePR regulations the main scope is to amalgamate both regulations in one set which covers both Article 7 and 8 of the European Charter of Human Rights. By defining each particular situation that a user could enter into, both laws harmonized to ensure that internet users have control over their data and that providers at all websites maintain all user data in a way that guarantees safety of the information. Also, the definition of information is extended within the acts to include the metadata that derives from it and creates an ownership over an IP address and all other online identifiers that help to strengthen rights of internet users across the EU.

## LITERATURE:

1. Boban, M., *Zaštita podataka i pravo na privatnost u informacijskom društvu*, Veleučilište „Nikola Tesla“ u Gospiću, 2019.
2. Cabrio, A., *GDPR & Substantial Compliance*, Qordata ebook, 2018
3. Commission Directive 2008/63/EC of 20 June 2008 on competition in the markets in telecommunications terminal equipment (OJ L 162, 21.6.2008, p. 20–26).
4. Commission proposal for a Directive of the European Parliament and of the Council establishing the European Electronic Communications Code (Recast) (COM/2016/0590 final - 2016/0288 (COD))

5. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A Digital Single Market Strategy for Europe, COM(2015) 192 final
6. Čizmić, J., Boban, M. Zlatović, D., Nove tehnologije, intelektualno vlasništvo i informacijska sigurnost, Split: Sveučilište u Splitu Pravni fakultet, 2016
7. Dal, U., The extraterritorial scope of General Data Protection Regulation and its legitimacy in international law. *Kişisel Verileri Koruma Dergisi*, pp 21-33, 2019
8. Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) (OJ L 201, 31.7.2002, p.37)
9. Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (OJ L 153, 22.5.2014, p. 62–106)
10. ECHR, judgments *Niemietz v Germany*, judgment of 16 December 1992, Series A n° 251-B, §29; *Société Colas Est and Others v France*, no 37971/97, §41; ECHR 2002-III; *Peck v The United Kingdom* no 44647/98, §57, ECHR 2003-I; and also *Vinci Construction and GTM Génie Civil et Services v. France*, n°s. 63629/10 and 60567/10, § 63, 2 April 2015
11. George, D., Reutimann, K., Tamò-Larrieux, A., GDPR bypass by design? Transient processing of data under the GDPR, *International Data Privacy Law*, ipz017, 2019
12. InfoCuria, Case-law of the Court of Justice C-450/06 *Varec SA*, ECLI:EU:C:2008:91, §48
13. Joined Cases C-293/12 and C-594/12 *Digital Rights Ireland and Seitlinger and Others*, ECLI:EU:C:2014:238; Joined Cases C-203/15 and C-698/15 *Tele2 Sverige AB and Secretary of State for the Home Department*, ECLI:EU:C:2016:970.
14. Mazur, J., Patakyová, M., Regulatory approaches to Facebook and other social media platforms: towards platforms design accountability, *Masaryk University Journal of Law and Technology*, pp219-241, 2019
15. Padi, J., Big data analytics, consent and the European Union (EU) General Data Protection Regulation 2016 (GDPR) - The fallacy of consent and control, *Keele university*, 2018
16. Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications- ePrivacy COM/2017/010 final - 2017/03 (COD)
17. Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.1.2001, p. 1–22)
18. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1–88)
19. Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12–33)
20. Sharma, A., Deshkar, N., Wadhawan, K., Kearns-Manolatos, D., Nangla, A., Seolikar, A., Yeung, S., Das, S., Patil, R., Privacy & GDPR for Digital Platforms, *Synechron Inc*, 2018

## THE ROLE AND THE IMPORTANCE OF LIBRARIES' LOCAL HISTORY COLLECTIONS IN THE DEVELOPMENT OF CULTURAL TOURISM IN A DESTINATION

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### ABSTRACT

*Libraries are a cultural space where the library system converges with sources of knowledge about tradition, uniqueness and credibility of a nation. They collect, process and keep materials representing the cultural identity of a community. Through their programmes, events and cooperation with other organisations and heritage institutions, they bring culture closer to all age groups. Modern libraries provide the basis for the development of cultural and creative programmes supporting the content and function of the individual library space. They interact with the community and provide services that make them proactive and interdisciplinary. Libraries keep local history collections as important promoters of cultural heritage that safeguard the identity of local communities and raise the sense of belonging in its members. The development of local collections started in late 1960s and early 1970s. They have a documental, historical, cultural, artistic and practical value that makes them – and libraries as their keepers – important stakeholders in the development of cultural tourism. Ever-developing cultural tourism plays a big role in social and economic development, increasing the number of overnights and contributions to the state budget. Cultural tourists are more educated and driven by the desire to get to know the local culture and take part in it. The government participates in the development of cultural tourism by providing funding and development strategies. The more attractive the offer, and the more carefully the programmes are adapted to various age or interest groups, the sooner the tourists will choose a destination. Libraries contribute by adapting their local history collections to the cultural tourism offer. Croatia's abundant tangible and intangible cultural heritage is very well incorporated into cultural tourism that attract tourists from across the world. This paper showcases and proves on practical examples the role and the importance of libraries' local history collections in the development of cultural tourism and their economic influences on the economy of the region where they operate.*

**Keywords:** *cultural tourism, destination, economic influences, library local history collection, proactivity*

### 1. INTRODUCTION

In recent decades, culture has been understood as the way of life specific to a certain region, and tourism has largely become a comprehensive cultural experience (Koncul, 2004, p.209).

Many local communities possessed of an extensive cultural heritage have thus become the object of interest for many tourists and the destination of their visits. Croatian cultural (heritage) institutions have joined Croatia's many international tourist attractions in recent years, in particular libraries and their local history collections, testimonies to everything that constitutes the identity of a locality (people, customs, history, culture). This trend necessitates the inclusion of local history collections in the creation of the local tourism offer and the formation of local history collections as a sustainable tourism product. The 1997 Libraries Act lists the maintenance of local history collections as one of the principal tasks of Croatian public libraries. Many libraries are still not complying with this legal requirement but still want to show their local history material to their users, researchers and tourists. Libraries therefore actively collect and keep local history collections, ensuring their availability, and making a substantial contribution to the preservation of cultural heritage. Research, digitalisation and complementation of local history collections leads to better understanding of the past and the present of the culture of a certain region and is a guarantee of its future survival. Public libraries are the principal founders of local history collections. Their task is to ensure the acquisition, processing, accommodation, protection and conservation of the local history collection material as an extensive and obligatory source of information about a destination. Batur and Barbarić explain that a public library, in the broadest definition of the term, is a place of access to knowledge and all other information, and a source of information about the locality it belongs to (Batur, Barbarić, 2016, p.4). Public libraries are established and organised locally, meaning that their principal role is to collect, promote and protect the local culture and its diversity, which is achieved by maintaining local history collections, among other ways (IFLA, 2011). By the end of 2008, Croatia had 210 public libraries and a total of 147 local history collections (Tošić Grlač, 2010, p.307).

## **2. LIBRARIES AS A COMMUNICATION, CULTURAL AND TOURIST DESTINATION IN THE PROMOTION OF LOCAL HISTORY COLLECTIONS**

Libraries are defined as cultural institutions collecting, classifying, storing, organising and processing library material, and making it available to their users. Efficient communication between the library and its users is considered the central role in the library's mission. Libraries cannot accomplish everything on their own and work with other organisations, institutions and associations. One of the libraries' tasks is also to popularize and raise awareness of cultural heritage. The globalisation trend has affected libraries too. As organisations serving the society, libraries can only survive if they speak the language of their environment, which requires efficacy and effectiveness, leadership, quality, communication and interaction with the society. This makes libraries "physical and virtual communications centres that provide access to local and global knowledge and culture. They are the treasure of the local communities, presenting their wealth and bringing it closer to the general public in cooperation with their partners, and adding value to the local community with the events they organise" (Leščić, 2012, p.33). Libraries are very important and valuable cultural and multicultural centres, organising a variety of public lectures and discussions, exhibitions and programmes. Technological developments of the 21<sup>st</sup> century have made libraries more than mere communication centres acting as mediators between the reader and the book. Libraries gained a new role, transforming into information and communication centres ideal for promoting the development of cultural tourism. According to Leščić (2012), some of the fundamental tasks of a library with a modern organisation are: to provide access to various materials and all types of information as a broad diversity of knowledge, as well as access to global and national cultural heritage, and various forms of cultural entertainment as foundations for life-long learning; to develop cultural diversity with their comprehensive programmes, including language, ethnical and religious diversity (cultivation of distinctive traditions), but also to nurture the local identity in

cooperation with other cultural institutions (schools, museums, galleries, tourist organisations); and to become actively involved with their programmes and projects in the promotion of cultural heritage and local history collections to the local population as well as to tourists visiting a certain destination. The Encyclopaedia of the Miroslav Krleža Institute of Lexicography defines the local history collection as a collection of books and other materials whose contents are relevant to a certain geographical, political, ethical, historical, cultural and economic locality, usually the town and/or region where the library that is establishing and building the collection is based. The Encyclopaedia furthermore states that such a collection includes materials on all media, created or published in the territory defined as their locality, as well as materials created anywhere in the world that relate to their locality (Enciklopedija. hr, n.p., n.d.). If the local history collection relates to a single town or village, it is called local. If it covers a certain town and its broader surroundings, it is called subregional, and if it covers an entire region, it is called regional. The development of local history collections began in the late 1960s and early 1970. They have a documental, historical, cultural, artistic and practical value. Their proactivity and interdisciplinarity makes libraries and their local history collections important stakeholders in the development of cultural tourism in a destination. In 2002, the International Federation of Library Associations and Institutions (IFLA) established the Local History and Genealogy Section as a platform for the promotion of libraries, local culture and history, and collections. In 2009, the Croatian Library Association's Commission for Local History Collections prepared the Recommendations on the Organisation of Local History Collections in Public Libraries and Other Libraries (Institutions) Collecting Local History Materials. The Recommendations require public libraries to collect and keep local history materials in the form of the heritage of local entities by buying and accepting donations from private library collections, bequests and donations of local importance. The Recommendations build on Article 37 of the 1998 Libraries Act on the development of local history collections and on Article 6 of the Standards for Public Libraries in the Republic of Croatia, which states: "Every public library maintains a local history collection and therefore researches, collects, processes, stores and provides access to library materials related to topography and the historical, economic and cultural development of the area it operates in, as well as makes a local history bibliography and central catalogue..." (Leščić, 2014, p.1). In the Recommendations, Jelica Leščić analysed a statistical questionnaire examining the activities of public libraries relating to local history collections, and uncovered some interesting information: out of 203 libraries that provided data on their activities and services, 30 libraries or 14.7% had no local history collections, and the Local History Collection Fund comprised a total of 135,333 books (Leščić, 2014, p.3). The materials comprising a local history collection are divided into three main groups in terms of content: materials related to the locality and its inhabitants, published anywhere in the world, publications by inhabitants of the locality, published anywhere in the world, materials created, published and printed in the locality before 1945 (materials created before World War II are considered national treasure, since the commercialization of printing started after 1945, and the existence of printing shops stopped being a sign of cultural development (Tošić Grlač, Hebrang Grgić, 2011, p.53). The local history collection comprises: 1. Printed publications (monographs about the locality, monographs whose content is not related to the locality, serial publications: magazines, newspapers, yearbooks, fine print); 2. Manuscripts; 3. Publications printed in a limited number of copies; 4. Cartographic materials; 5. Notes; 6. Audio, visual and audio-visual materials; 7. Electronic materials; 8. Preformatted materials (the Commission for Local History Collections of the Croatian Library Association, 2009). Digitalisation is considered an added value of the local history collection. The main criteria for the selection of the local history materials for digitalisation should be: the value of the material's content, how rare or unique it is, its cultural significance for the local community, and how physically endangered the material is.

### 3. CULTURAL TOURISM AND HERITAGE

Cultural tourism is “a phenomenon that, by definition, allows places where tourism is not the only industry and there is no year-round tourist traffic to create a tourism offer based on their potentials in culture and arts. The basic objective of cultural tourism is to motivate people to travel and learn about local cultural values in order to better understand and respect them” (Đukić Dojčinović, 2005, p.10). People and culture come together in tourism. The notion of cultural tourism “combines the notions of culture and tourism. Cultural tourism is the type of tourism where museums, exhibitions, or concerts are the targets of tourist visits, or it is related to the material, so-called ‘architectural’ heritage – including large religious monuments and secular architecture” (What is cultural tourism, n.d., n.p). The cultural tourism market grows and modernises continually, helping protect the cultural heritage. Cultural attractions, buildings, museums, historical localities, traditional fairs, folklore concerts etc become the main motive for travel. The World Tourism Organisation defines cultural tourism as “a culture-motivated activity, such as study, theatre and culture tours, trips to festivals and similar events, visits to historical localities and monuments, trips whose purpose is to study nature, folklore or arts, and pilgrimages” (Čolak and Mikačić, 2006). The notion of cultural heritage is associated with the notion of culture. Cultural heritage is the expression of a people’s identity. It can be tangible or intangible. Tangible cultural heritage includes monuments, buildings, historical localities, archaeological sites etc. Intangible cultural heritage includes oral tradition, traditional crafts, the social practice, skills and objects, performances etc. Culture is not characterised just by “museum or concert visits, meaning culture in its institutionalized form; it can also be intangible” (Jelinčić, 2009.p.42). According to Jelinčić (2009), the motivation of tourists to take a culture-related trip can be divided into three levels: primary, casual and accidental. In case of primary motivation, the tourist visits a country with the sole intent of participating in its cultural life. If getting to know the cultural life of a community is the secondary motive, we refer to it as casual motivation. Accidental motivation is when a tourist comes into contact with culture and learns about the cultural life of the community they are visiting accidentally and without any pre-existing intent. Cultural tourism is a global phenomenon. As “the cultural tourism market grows, its focus quickly shifts from interest in monuments and localities to a much broader phenomenon, covering all aspects of ‘high’ and ‘popular’ culture” (Jelinčić, 2009, p.45). The ICOMOS (International Council on Monuments and Sites) maintains that the exploration of monuments and localities is the purpose of cultural tourism and that cultural tourism has a positive effect because it contributes to their maintenance and conservation. Cultural tourism has also proved to play an educational role. Through cultural tourism, tourists learn about the various aspects of art, history and architecture, and get new information about the destination they have visited. Libraries, as the centres of cultural heritage conservation, can help as proactive cultural tourism stakeholders through educations, exhibitions and projects that could be offered to tourists, but could also involve tourists as active participants. Cultural tourism involves not only motivation, but also experience. Coming in contact with culture, tourists get a sort of an education and are able to say that they have participated in creating the culture of the area in question. Tourism contains a number of cultural aspects, most importantly nostalgia, collective or cultural identity, and authenticity. The conclusion is that cultural tourism is “a comprehensive category encompassing a wide range of similar activities including many types of tourism, such as historical, heritage, ethnical, art, museum and festival tourism” (Marić, 2015, p.10).

#### 3.1. Cultural Tourism Strategy of the Republic of Croatia

Croatia has an extensive tangible and intangible cultural heritage, which provides the basis for the development of cultural tourism. Cultural tourism attracts an increasing number of tourists with its extensive and diverse offer, motivating them to extend their stay with the quality of its

programme and the diversity of its offer, and increasing their spending. This makes cultural tourism one of the most important industries in Croatia. In spite of its importance, the work on the National Cultural Tourism Development Strategy only began in 2012. The Strategy was adopted by the Croatian Government in 2013 and its implementation began in 2014. The document put in motion a number of activities that increased the tourists' level of satisfaction, creating the prerequisites for systematic development of tourism. Then came the establishment of the Cultural Tourism Office with the Croatian Tourism Board and the Cultural Tourism Association with the Croatian Chamber of Economy, aiming to bring together the public and the private sector. National Cultural Tourism Days were launched for the affirmation of cultural tourism. The event was held in Rijeka (2007), Split (2008), Varaždin (2009), Dubrovnik (2011) and Poreč (2012). An educational programme (seminars, regional forums) was designed and implemented, and more than 1500 participants attended it between 2005 and 2012. Almost 600 cultural tourism products were co-financed with a total of HRK 10 million" (Tomljenović and Boranić Živoder, 2015, p.11). The Cultural Tourism Office was supposed to present cultural heritage to tourists in an entertaining and adequate way and develop as many cultural tourism products as possible. Of course, the objective was also to increase the number of tourists satisfied with the tourism offer, increase spending, extend the tourist season, and encourage domestic spending. The Cultural Tourism Office did not make full use of its potentials and was closed in 2013. According to Demonja (2014, p.119), the Cultural Tourism Development Strategy clearly defines the role of the government in cultural tourism in order to better organise cultural tourism in accordance with the World Tourism Organization's guidelines. The Strategy also underlined the necessity to legally regulate certain aspects of tourism. Croatia has "a number of compact urban and rural historical units, UNESCO localities, potential international tourist attractions, great cultural institutions (museums, theatres, cinemas, libraries, state archives etc), and a multitude of intangible cultural resources, legends, myths, and art events that can be 'incorporated' in almost any locality and thus become a tourism story" (Jelinčić, 2009, p.264). Cultural institutions are favourably located, which is very important for tourists: the more easily accessible a location is, the more tourists want to visit a cultural institution. This is the case with libraries. There are libraries and their branches in almost every town, often in very popular locations, to make them as accessible as possible. Local history collections maintained by libraries are the original communicators of culture, knowledge and historical heritage of an area and should be made accessible to a wide audience through a variety of events, projects, exhibitions etc.

#### **4. THE ROLE AND IMPORTANCE OF LIBRARIES IN SUSTAINABLE DEVELOPMENT OF CULTURAL TOURISM**

Tourism in Croatia is developing continually, and the tourism offer is growing and diversifying daily. Libraries participate in the development of cultural tourism with various cultural events, such as organisation of exhibitions, concerts, meetings with authors and scientists, public discussions and lectures, development of local history collections, and similar activities. In addition to museums and galleries, libraries are "important guardians of heritage and local culture. What is more, since library funds are on the one hand composed of works of international literature and scientific or popular heritage, and on the other of works belonging to local heritage, libraries act as a bridge between the international and the local culture" (Tokić. K., Tokić, I., 2017, p.128). In addition to exhibitions and concerts, libraries can also offer tourists local history collections. Interestingly, some of the buildings that the libraries are based in impart a historical and artistic significance even before the visitor enters the library, making the building a tourist attraction in itself. The City and University Library in Osijek (GISKO) is one such example. It is based in the "Gillming-Hengl House, a representative secession villa from the turn of the 20<sup>th</sup> century.



The wealth of GISKO's collections mirrors the cultural heritage of the City of Osijek from this era. A part of the original furniture and the private library of the Gillming-Hengl family is still a part of GISKO's local history collection" (Kretić, Benić Nađ, 2016, p.17). Similarly, the Alexandria Library is a tourism symbol of Egypt and a cultural and tourism attraction in the true sense of the word, generating an income of around EUR 1.4 million a year from admission fees, with foreign tourists accounting for 40-60% of it. Its influence is evident from the occupancy rate of the city's tourism capacities as well (Jelinčić, 2009). When tourists visit libraries, librarians become tourist guides, whose task is to show and present the building and its various sections to the tourists. Librarians often have programmes specifically designed for tourists, related to local history collections, which give tourists the chance to explore and learn about the history of the city and the library they visit, and thus satisfy the needs of the cultural tourists, including learning about other cultures and exploring them. Cultural and monument collections of Croatia's noble families and manors that the libraries have collected and conserved add value to the cultural heritage of Croatia today and thus also add value to the cultural tourism offer. One of such collections is the collection of the Prandau-Normann Manor in Valpovo, one of the most extensive and most valuable libraries, which attests to the situation in Slavonija after the Turkish rule and the way of life and the interests of the Prandau-Normann family. Libraries have to promote themselves in the public as much as possible to attract as many tourists as possible. Libraries are the ideal "local cultural programme centres, among other things, promoting cultural tourism because they fulfil their mission, have a certain space, and have valuable materials. The following activities make librarians the promoters of local cultural heritage and stakeholders of cultural tourism by extension: creation of new areas and attractive cultural heritage locations, education, protection and promotion of the local area, promotion of the image of the local community, digitalisation and presentation of the materials" (Kretić, Benić Nađ, 2016, p.124). The libraries' cultural programmes can be occasional or permanent and are developed based on the interests of their users or tourists. Lack of funding is a problem these programmes often face, but luckily this is where the librarians come in with their management skills, enthusiasm and resourcefulness, finding a solution to the problems. It is very important for libraries to be active on social media as well, because this is another one of the libraries' potentials in cultural tourism. Advertising and communication with users and tourists on social media are almost of crucial importance in the modern times. This results in new forms of library services, for instance, library catalogues that allow tourists to search the library's materials. This communication method allows information to reach a wider audience quickly and effectively, and if changes occur, quick and timely amendment of information is possible. In accordance with the Cultural Tourism Development Strategy, developed within the project Croatia in the 21<sup>st</sup> century, where libraries are identified as "the centres of availability of the widest variety of information, we recognise digitalisation as a valuable resource in cultural tourism and a way to conserve and present the cultural heritage" (Jelinčić, 2010, p.39). One of the public libraries' biggest problems is that most libraries have no network servers. Also, the libraries' websites are available only in Croatian, limiting their number of visitors. Libraries also do not expend much effort promoting their programmes and their local history collections, which is one of the crucial problems in establishing international culture communications, and it does not help the development of the cultural tourism market. Online services, such as online catalogues and magazines, online availability checks for the library's materials, and digitalised local history materials, are important for the promotion of cultural tourism, because the library thus demonstrates its desire to be involved in the promotion of cultural heritage of its city, region and country to foreign users/visitors.

## 5. THE ROLE OF THE LOCAL HISTORY COLLECTION IN CULTURAL TOURISM

Local history collections play a very important role in cultural tourism and contribute to the cultural tourism offer of the local community with their diverse and valuable heritage records. Grković defines cultural tourists as a specific group of people characterised by environmental awareness, a high level of education, appreciation of quality, and a responsible approach to the heritage culture. Grković considers such tourists the best, the most serious, and the most competent promoters of cultural “attraction” (image) of a tourist destination (Grković, 2000, p.6). We must keep in mind that culture attracts users. Activation and revival of the cultural potentials such as libraries’ local history collections is therefore crucial in cultural tourism. Collecting all original materials about a specific area, “local history collections offer a versatile view of the locality, its past and its present, and have a scientific, documentary, historical, artistic and practical value” (Vuković Mottl et al, n.d., p.3). D. A. Jelinčić identified the problems related to the revitalisation of libraries’ local history collections in cultural tourism: (1) insufficiently developed cultural statistics system; (2) insufficient knowledge of cultural management among project coordinators; (3) centralisation and bureaucratisation of procedures; (4) lack of a recognisable cultural tourism product as one of the biggest problems; (5) superficial knowledge of their own heritage in the local population – the awareness of heritage is still insufficient in Croatia, and it is not seen as a tourism resource; (6) insufficient or poorly organised promotion; (7) insufficient cooperation between culture and tourism sectors; (8) nonexistence of an advisory institution for the organisers of cultural tourism initiatives (Jelinčić, 2008, p.267). It is therefore important to involve the local population in the development of the tourism offer, because neglecting them would result in losing the connection with the past (Rudan, 2011, 112, 114). Bišćan (2011) underlines that the popularization of the local history collection, and the protection and promotion of the local culture, are ways to raise awareness of the value of one’s own cultural heritage, promoting the understanding and respect of other cultures at the same time. Local history funds are therefore seen as the basis for the affirmation of cultural heritage within intercultural dialogue (Juraga, 2017). Local history collection managers therefore have to present and promote the materials of local heritage collections in their own local communities first, on their own or in cooperation with other institutions, organising exhibitions with topics related to anniversaries of different events, persons, associations and organisations important for the locality. Exhibitions are a great way to popularise local history material, because they can provide users with important information about the library or about the material they do not know enough about” (Radetić BeriĆ, 2016, p.17). Exhibitions can be set up in other spaces as well, such as public locations, museums and schools rather than just at libraries. This can only be accomplished if the librarians have a good communication with the media. Use of new technologies, such as online catalogues of local history collections and online library presentations, make cultural heritage directly accessible and more attractive to a wider audience (Benić, Kretić, Nađ, 2016). Cultural heritage and current events are thus made available to everyone and become a link between the tourists and the cultural heritage. The local history collection has a marketing aspect as well. The Recommendations for the Organisation of Local History Collections in Public Libraries state that local history collections contribute significantly to the publication of monographs, photography monographs, art monographs, testimonials, and cultural-historical and historical-tourist guides dealing with various local topics in cooperation with other related institutions (Vuković Mottl et al, 2009, n.p.) or they contribute with reprints of old postcards, maps or calendars, adding value to the library’s souvenir offer. Tourism boards can use the reprints too for their promotional materials and tourist brochures. Digital materials available in the digital repository are also a marketing activity usable by all cultural institutions and the tourism board. Dunja Seiter Šverko recognised this too, emphasising that the various materials in an online repository would offer the possibility of presenting the locality in all its segments (Seiter

Šverko, 2006, p.27), promoting the development of cultural tourism of a destination. Šverko concludes that the digital collection, as a tourism product, should be regarded as a story, which is the main goal of tourism offer and promotion, but also as the means of nurturing the cultural identity of the community it belongs to. Libraries' websites can thus promote themselves and the local community by publishing the digitalized local history collection materials on their websites. The many interactive contents can be designed for tourists in terms of their themes: virtual tours, videos and audios about cultural institutions, interactive city maps etc (Jelinčić, Zović, 2012, p.45). The Osijek City and University Library is an excellent example of a library participating in cultural tourism with its local history collection. The Library has started digitalizing and promoting its local history collection (Local History Collection of the Osijek City and University Library, n.d., n.p.). In 2006, the Library started the project "Local Stories" ("Zavičajne priče") to promote the local history collection and draw attention and encourage interest in our fellow citizens whom we often know very little about, but we all owe them a debt of gratitude for their work and for putting Osijek on the Croatian culture map. The Library also launched a series of literary meetings for children and youths in the library space called "Local Storytelling Programme at GISKO" ("Zavičajna pričaonica u GISKO-u"). The objective of this project is to promote reading, build an appreciation of literature, and form a habit of library visits. Getting to know local authors through the presentation of their literary work raises awareness of nurturing the cultural heritage of the city and the locality among children and youths. A series of local history exhibitions was also started at the Library to promote the local history collection. The Library is taking significant steps to digitalise its materials and has so far digitalised: (1) local history periodicals; (2) local history monographs; (3) postcards of Osijek, a part of the graphic collection and also a part of the Library's local history fund. The authentic collection is a valuable source of information about Osijek's visual identity, a testimony to its urban development, and a reminder about its cultural identity; (4) catalogues, graphics, photographs, maps and the literary heritage of R. F. Magjer as a contribution to Croatian Cultural Heritage, the national project of digitalisation of archival, library and museum materials under the auspices of the Croatian Ministry of Culture. Some of the first editions of the works by the following local authors were collected for the local history collection of the Slavonski Brod City Library: Ivan Velikanović, Luka Ilić-Oriovčanin, Stjepan Ilijašević, Stjepan Marijanović and others, along with many editions of the works by Ivana Brlić-Mažuranić and Dragutin Tadijanović. This collection also includes some 50 postcards of Slavonski Brod, whose picturesque motives are testaments to the architectural heritage of this city. The Library has also published the Lexicon of Slavonski Brod Authors and Brod's Sports Stories of Old, promoting local history (Local History Collection of Slavonski Brod City Library, n.d., n.p.). The collection "Bjelovariana" was established in 1975. It covers the Bjelovar-Bilogora County, with a special emphasis on the City of Bjelovar and the nearby villages and municipalities. Its historical materials cover a wider area, because the cities of Križevci, Đurđevac, Koprivnica and Virovitica had associations with Bjelovar in the past. Special emphasis is on books printed in 1875, including works by Ivan Vitez Trnski, Petar Preradović, Franjo Marković and Ivan Nepomuk Jemeršić, natives of the area, who lived in this area for a part of their lives and were active in its cultural life. The collection includes 40 postcards of Bjelovar and its surroundings, with the most valuable postcards dating back to the 19<sup>th</sup> century. It also includes 80 graphics. All materials have been processed and inventoried. The collection includes 230 exhibition catalogues, a testament to considerable exhibition activity in the locality. Among ephemeral materials, there are around 700 posters, which makes this collection the most valuable part of this local history collection (Local History Collection of the Petar Preradović Public Library in Bjelovar, n.d., n.p.). The above local history sections gain recognisability as a brand of the library and the local community, contributing to the popularisation of cultural tourism, with the objective of arousing the tourists' curiosity and

adding quality and value to the community's cultural tourism offer. In addition, the objective is to discover and present local history funds at different types of libraries and heritage institutions and to find links, persons and events that could constitute the backbone of cooperation on joint projects, contributing to the development of cultural tourism in a destination. The local history section is therefore expected to research, collect, process, and make available the local history materials, to nurture local history, and to promote the local values, always providing users with new information, and motivating the local authors for continual research, as well as to interest users outside of the local community in the local history and to make it available (Benić, Kretić, Nađ, 2016, p.126).

## 6. CONCLUSION

At the time of globalisation, cultural tourism helps raise awareness of the importance of nurturing one's own cultural distinctions, which is reflected in particular in local history collections as the guardians of local heritage. Organisation of anniversary celebrations and exhibitions, cooperation with the tourism board, associations and the media, as well as digitalisation afford opportunities for tourist promotion of the collections. Digitalised materials are an important source of information about life in the local community through history, and an invaluable resource for educational, scientific, professional and informational needs of users in their local community and beyond. Pejić believes that every local history collection manager should be able to organise exhibitions and the creation of newsletters on new acquisitions and guides, contact with the media, and cooperate with the other organisations in the locality (Pejić, 1996, p.111). The digital local history collection is an important step in the creation of the digital repository of the locality. All cultural institutions participate in the establishment of an open-access repository, in cooperation with the tourism board, because tourists are increasingly interested in the pursuit of authentic traditional life, as reflected in the local history collections of the heritage institutions. The locality is thus promoted in all its segments, cultural, tourism, educational, informational and more. The various local history collection materials are published online in digital form and the general public is able to use and access them. The best-known standardised set of elements (metadata) in the digital environment, the Dublin Core, which communicates with a number of similar systems, such as the Europeana – the online collection of digitalised European cultural heritage – is used in the processing of such digital materials. A collection organised using this method plays a very important role in the promotion of the local area, but also has an added European value. The process of building and organising the digital repository and the strategy for its conservation should lean on the policy of the local community, which would partially finance the project (Pejić, 1996, p.112). The main role of the local history collections' portals should be to present the digital collections of the project by providing direct access to the digitalised content, which can be divided into two collections: the book collection and the graphic collection, including postcards. The local history collection collects information about the local history collection fund kept at the library, and about news, promotional activities, events organised by the library, and other interesting and useful content that has one thing in common: it all belongs to the locality. Cultural tourism is based on a mosaic of localities, traditions, art forms, celebrations and experiences portraying a nation and its people, and reflecting their diversity and character. Cultural tourism is a journey focused on experiencing art, heritage and the distinctive features of a destination (Cros, 2002, p.134). Local history collections are a part of the special interest tourism, with culture and heritage as the bases that attract the visitors. Culture as a process is thus transformed into culture as a product via tourism (Vreg, 2002, p.4).

**LITERATURE:**

1. Batur, M.; Barbarić, A. (2016). Audiograđa kao dio zavičajne zbirke u narodnoj knjižnici; studija slučaja radijskih emisija Ivana Hermana. // *Libellarium: journal for the research of writing, books, and cultural heritage institutions*, 2016, (No.9., Vol. 1) pp. 1-30. Retrieved 25 September 2019 from: [http://hrcak.srce.hr/index.php?show=clanak&id\\_clanak\\_jezik=259043](http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=259043).
2. BeniĆ, R., Kretić Nađ, M. ed.(2016) zbornik radova / 1. stručni skup s međunarodnim sudjelovanjem, Beli Manastir, 11. studenoga 2016. Beli Manastir: Gradska knjižnica Beli Manastir
3. Cros, H. (2002). *Cultural tourism: the partnership between tourism and cultural heritage management*. New York: Haworth Press.
4. Đukić Dojčinović, V. (2005). *Kulturni turizam: menadžment i razvojne strategije*. Beograd: Clio.
5. Enciklopedija.hr., Enciklopedija Leksikografskog zavoda Miroslav Krleža. Retrieved 25 September 2019 from: <http://www.enciklopedija.hr/Natuknica.aspx?ID=66968>.
6. Grković, S. (2000). Turizam i kultura: Što je to „kulturni turizam“?!. // *Turistička medicina i zdravstveni turizam* 5, 2000, (No. 17). p.6
7. IFLA-ine smjernice za narodne knjižnice. (2011). 2. hrvatsko izd. (prema drugom izmijenjenom izdanju izvornika). Zagreb: Hrvatsko knjižničarsko društvo
8. Jelinčić, D. A. (2009). *Abeceda kulturnog turizma*. Zagreb: Biblioteka Intermedia,
9. Jelinčić, D. A.(2008). *Abeceda kulturnog turizma*. Zagreb: Meandar:Meandarmedia
10. Jelinčić, D. A., Zović, I. (2012).“Knjižnice u turizmu: Shhhh, Quiet please! Nein, herzlich willkommen! Si accomodi”. // *Liburna: međunarodni znanstveni časopis za kulturu, turizam i komuniciranje* 1,2012 (No.1)., pp. 37-47. Retrieved 25 September 2019 from: <http://hrcak.srce.hr/118643>.
11. Juraga, M.(2017). *Uloga zavičajnih zbirki narodnih knjižnica u lokalnoj turističkoj ponudi*. Diplomski rad. Zagreb:Sveučilište u Zagrebu, Filozofski fakultet u Zagrebu, Odjel za informacijske i komunikacijske znanosti
12. Kalčić, M.(2009). Istarska kulturna strategija. Pula-Poreč: Kerchoffset. Retrieved 24 Septemeber 2019 from: [https://www.istra-istria.hr/uploads/media/Istarska\\_kulturna\\_strategija.pdf](https://www.istra-istria.hr/uploads/media/Istarska_kulturna_strategija.pdf).
13. Kišiček, M. (2017). *Zavičajna zbirka u narodnoj knjižnici na primjeru Warasdiniensie, zavičajne zbirke Gradske knjižnice i čitaonice „Metel Ožegović“ Varaždin*. (final thesis). Zagreb: [M. Kišiček]
14. Komisija za zavičajne zbirke Hrvatskog knjižničarskog društva, (2009), *Preporuke za ustroj zavičajne zbirke u narodnim knjižnicama i drugim knjižnicama (ustanovama) koje prikupljaju knjižničnu zavičajnu građu*, Retrieved 25 September 2019 from: <http://www.hkdrustvo.hr/clanovi/Preporuke.pdf>.
15. Komisija za zavičajne zbirke Hrvatskog knjižničarskog društva: *Preporuke za ustroj zavičajne zbirke u narodnim knjižnicama i drugim knjižnicama (ustanovama) koje prikupljaju knjižničnu zavičajnu građu*, (2009), Retrieved 25 Septemeber 2019 from: <http://www.hkdrustvo.hr/clanovi/Preporuke.pdf>
16. Koncul, N. (2004). Položaj turizma u globalnim i europskim integracijskim procesima. *Naše more*, 2004, (No. 51, Vol. 5/6.), pp. 209.
17. Lešić, J. (2014.). *Zavičajne zbirke u narodnim knjižnicama 2013*. Retrieved 25 September 2019 from: <http://www.nsk.hr/wp-content/uploads/2012/01/Narodne-knji%C5%BEnice.-Posebne-zbirke-1-Zavi%C4%8Dajne-zbirke.pdf>.
18. Lešić, J.ur. (2012). *Knjižnica: komunikacijsko i multikulturalno središte lokalne zajednice: zbornik radova/8. savjetovanje za narodne knjižnice u Republici Hrvatskoj*. Zagreb:Nacionalna i sveučilišna knjižnica

19. Marić, T. (2015). *Kulturni turizam. Završni rad*. Pula: Sveučilište Jurja Dobrile u Puli, Fakultet ekonomije i turizma „Dr. Mijo Mirković“
20. Pejić, I. (1996). Zavičajna zbirka kao jedan od oblika djelovanja knjižničara u društvenoj zajednici. // *Vjesnik bibliotekara Hrvatske* 39, 1996, (No.1/2), pp. 111-117.
21. Pejić, I. (1998). *Zavičajna zbirka narodne knjižnice „Petar Preradović“ Bjelovar*. Bjelovar: Prosvjeta
22. Radetić BeriĆ, G. (2016). *Uloga zavičajne zbirke u očuvanju kulturne baštine*. Diplomski rad. Rijeka: Sveučilište u Rijeci, Filozofski fakultet, Odsjek za kroatistiku
23. Rudan, E. (2011). *Menadžment u funkciji razvoja kulturnog turizma destinacije* (doctoral dissertation). Opatija: Fakultet za menadžment u turizmu i ugostiteljstvu: [E. Rudan]
24. Seiter-Šverko, D. (2006). Digitalizacija kulturne baštine: mogućnosti promocije. // *Knjižnice u turističkoj ponudi: zbornik radova / 2. međunarodni stručni skup Knjižnica: središte znanja i zabave*, Karlovac, 14. i 15. rujna 2006. / editor Nada Eleta. Karlova : Gradska knjižnica "Ivan Goran Kovačić".
25. *Što je kulturni turizam (no year of publication)*, Retrieved 25 September 2019 from: <https://www.culturenet.hr/default.aspx?id=23209&>.
26. Tokić, I., Tokić, K. (2017). *Informacijska funkcija knjižnica u turizmu: studija slučaja Hrvatske*. *Vjesnik bibliotekara Hrvatske*, Vol.60 No.4, pp. 125-146
27. Tomljenović R., Boranić Živoder, S. (2015). *Akcijski plan razvoja kulturnog turizma*. Zagreb: Institut za turizam Zagreb, Retrieved 25 September 2019 from: [https://mint.gov.hr/UserDocsImages/arhiva/001\\_160128-AP\\_kulturni.pdf](https://mint.gov.hr/UserDocsImages/arhiva/001_160128-AP_kulturni.pdf)
28. Tošić Grlač, S. (2010). Uloga zavičajne zbirke u promociji lokalne zajednice. // *Hrvatski znanstveno stručni skup o menadžmentu u turizmu i sportu*, 2010., (No 1.) pp. 307. Retrieved 25 September 2019 from: <http://hrcak.srce.hr/55005>.
29. Tošić Grlač, S., Hebrang Grgić, I. (2011). Zavičajne zbirke u hrvatskim narodnim knjižnicama. // *Zavičajne zbirke u narodnim knjižnicama: zbornik radova / 7. savjetovanje za narodne knjižnice u Republici Hrvatskoj*; editor Jelica Leščić. Zagreb: Nacionalna i sveučilišna knjižnica u Zagrebu
30. Vreg, F. (2002). Europska kultura i turističko komuniciranje. *Media, culture and public relations*. 2002, (No.1)
31. Vuković Mottl et al. *Preporuke za ustroj zavičajne zbirke u narodnim knjižnicama i drugim knjižnicama (ustanovama) koje prikupljaju knjižničnu zavičajnu građu*. No date. Retrieved 25 September 2019 from: <http://www.hkdrustvo.hr/clanovi/Preporuke.pdf>.
32. Zavičajna zbirka Gradske i sveučilišne knjižnice u Osijeku. Retrieved 25 September 2019 from: <https://www.gskos.unios.hr/index.php/studijska-citaonica/#>.
33. Zavičajna zbirka Gradske knjižnice Slavonski Brod. Retrieved 25 September 2019 from: <https://www.gksb.hr/index.php/odjeli/zavicajna-zbirka-sa-studijskom-citaonicom>.
34. Zavičajna zbirka Narodne knjižnice „Petar Preradović“ Bjelovar. Retrieved 25 September 2019 from: [https://www.knjiznica-bjelovar.hr/index.php/zbirke/zavicajna\\_zbirka/](https://www.knjiznica-bjelovar.hr/index.php/zbirke/zavicajna_zbirka/).

# ASSESSING MALAYSIA MARINE FISHERIES SUSTAINABILITY UNDER CLIMATE CHANGE PRESSURE: A QUINTUPLE HELIX APPROACH

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## ABSTRACT

*Marine fisheries are a major industry in Malaysia fisheries sector, which contributes significant growth in the economy and national food security. Unfortunately, this industry is vulnerable to the threats of climate change in relation to the marine environment such as the rising sea level, water acidity, and sea surface temperature. This study aims to assess the impact of climate change on the sustainability of marine fisheries in Malaysia. This study uses Quintuple Helix model approach which is the expansion of the established Triple Helix sustainability model that includes climate change as one of the important indicators. It involves a time-series analysis from 1989 to 2018 using Auto-Regressive Distribution Lag (ARDL). A long and short-run impact from rising in temperature and sea level on marine fisheries sustainability will help to impose a better adaptation and mitigation strategy for this industry. Consequently, the sustainability of marine fisheries will secure national economic prosperity and healthy protein supply.*

**Keywords:** ARDL, Climate Change, Marine Fisheries, Quintuple Helix, Sustainability

## 1. INTRODUCTION

Marine fisheries are a major industry in Malaysia fisheries sector, followed by aquaculture and inland fisheries (Department of Fisheries Malaysia [DOF], 2019). In 2017, a sum of 1.46 million metric tonnes of fish landed which contributed to 8.8 percent of the total landing of marine fisheries in South-East Asia (Southeast Asian Fisheries Development Center [SEAFDEC], 2017). The marine resources are important in providing a healthy source of animal protein, minerals, and various essential nutrients (Avadí & Fréon, 2015; Tran et al., 2018). However, this marine resources are vulnerable to many threats such as natural death of fish and overfishing (Diop et al., 2018). It has resulted in unstable marine landing in Malaysia since 1990 (DOF, 2019). This situation is consistent with the world's marine fisheries landing that has been reported to be static since 1980 (Food and Agriculture Organization of The United Nations [FAO], 2018). The situation is getting critical with the existence of climate change. According to Tang (2019), marine resources, ocean and coastal resources are among seven sectors in Malaysia that are vulnerable to climate change. In 2016, Malaysia recorded the highest temperature (39.3 degree Celsius) and experienced Super El Nino phenomenon that caused drought throughout country (Malaysian Meteorological Department [MET], 2016). This has resulted in the rise in sea surface temperature and acidity as well as changes in the ecosystem and biology (Badjeck, Allison, Halls, & Dulvy, 2010; Pörtner & Peck, 2010).

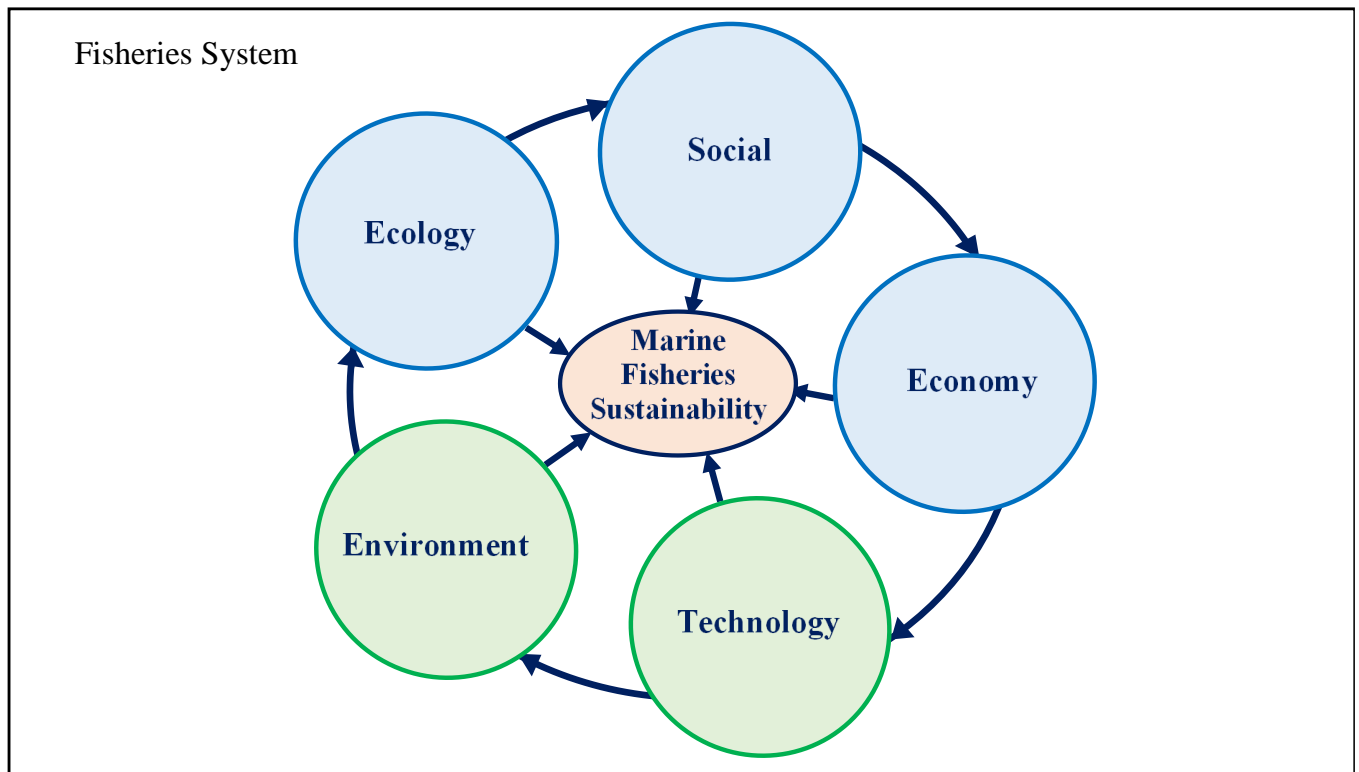
As a result, there are changes in the pattern of fisheries distribution (Merino et al., 2012) that put more pressure on marine fisheries sustainability. Therefore, it is vital to identify the critical factors that influence the national marine fisheries landing. The effect of climate change in Malaysia between 1971 to 2018 can be observed from the increase in mean daily temperature, sea level, and extreme weather phenomena (Tang, 2019). Besides that, according to the special report by the Intergovernmental Panel on Climate Change (IPCC), Malaysia will also receive the impact of the increase in global temperature by 1.5 degree Celsius (Pereira, 2018). If the climate change effect continues, the fishing effort will be affected and there will be a reduction in fisheries stock (Belhabib, Lam, & Cheung, 2016). This poses a threat to the sustainability of marine fisheries industry and consequently threatens national food security. Thus, this study aims to assess the impact of climate change on the sustainability of marine fisheries in Malaysia by using Quintuple Helix approach. The following section will discuss the development of Quintuple Helix of Marine Fisheries Sustainability, methodology, result and discussion, as well as conclusion.

## 2. QUINTUPLE HELIX OF MARINE FISHERIES SUSTAINABILITY

According to Brundtland Commission in 1987, sustainable development is defined as “the development that fulfils the current requirements without compromising future generation’s ability” (International Institute for Sustainable Development, n.d.). Classical fishery science stated that fisheries sustainability refers to a sustainable level of captures while ecological economists opined that sustainability is ensuring that the natural capital stock is at the exact or lower level than the current one. There are three dimensions for sustainable development which are generally agreed by researchers - ecology, social, and economy (Aguado, Segado, & Pitcher, 2016). Based on the knowledge or innovation model, the dimensions form a non-linear Triple Helix model which consists of a three-way network and hybrid organization from a university-industry-government relationship. The core of this model is the knowledge-based economy (Carayannis, Barth, & Campbell, 2012). Next, this innovation model is further developed into Quadruple Helix which is a Triple Helix innovation on the relationship with public community through media or culture. At this stage, Quadruple Helix focuses on the community core and knowledge-based ruling (Carayannis & Campbell, 2010). The innovation of Quadruple Helix of the natural environments forms the Quintuple Helix with a cross-sectional framework and interdisciplinarity towards sustainable development and social ecology. The combination of these five complex helixes consists of science, social science, and humanity field focuses on the socioecological core transition (Carayannis et al., 2012). The natural environment as the fifth helix makes Quintuple Helix a holistic measurement towards sustainable development. Since climate change is an issue in natural environment, Quintuple Helix will affect all helixes through knowledge as well as the latest and the most advanced innovation to achieve sustainable development (Carayannis et al., 2012). Thus, this study has adopted the Quintuple Helix Innovation Model as the basis of model formation and variables selection. The addition of technology and the environment to the Triple Helix of sustainable development in this study is identified as Quintuple Helix of Marine Fisheries Sustainability. Figure 1 shows the Quintuple Helix of Marine Fisheries Sustainability adapted from Charles, (2001) and Carayannis et al., (2012). The original sustainability dimensions were constructed from Natural Ecosystem and Human System components while the additional dimensions were components of the Management System that interact dynamically with each other.

*Figure following on the next page*



*Figure 1: Quintuple Helix of Marine Fisheries Sustainability*

*Source: Adapted from Carayannis et al. (2012).*

### 3. METHODOLOGY

This study utilised the Auto Regressive Distribution Lag (ARDL) on 30 years' dataset between 1989 to 2018. Six variables are identified as proxies to Quintuple Helix of Marine Fisheries Sustainability as shown in Table 1. These variables are also used by other researches and can be observed in studies conducted by Anneboina & Kavi Kumar, (2017); Bhuiyan et al., (2018); Ding, Wang, Chen, & Chen, (2017a); Parker et al., (2018); Sugiawan, Islam, & Managi, (2017). The data for marine fisheries landing and the number of vessels were acquired from DOF's annual report. Next, real GDP data were obtained from the World Bank database, population growth from Department of Statistics Malaysia, mean daily temperature from Malaysian Meteorological Department and mean sea level from University of Hawaii Sea Level Center.

*Table 1: Quintuple Helix Variables for Marine Fisheries Sustainability*

Helix	Variables
Ecology	Marine Fisheries Landing (MFL)
Economy	Real GDP (RGDP)
Social	Population Growth Rate (PPG)
Technology	Number of Vessel (NOV)
Environment	Mean Daily Temperature (MDT)
	Mean Sea Level (MSL)

This study began with unit root test to acquire the stationarity for each variable. Using E-Views software, two tests namely Augmented Dickey-Fueller (ADF) and Phillips-Perron (PP) were conducted. The stationary level is vital in avoiding spurious estimator as a result of non-stationary variables. ARDL analyses relationships for data with different stationary levels whether it is at level or first difference.

The next step was to conduct Bounds Test to obtain long-run and short-run estimators for ARDL model, as follows:

$$\begin{aligned} \Delta \ln MFL_t = & \beta_0 + \sum_{j=1}^{k1} \beta_1 \ln MFL_t + \sum_{j=0}^{k2} \beta_2 \ln RGDP_t + \sum_{j=0}^{k3} \beta_3 \ln PPG_t + \sum_{j=0}^{k4} \beta_4 \ln NOV_t + \\ & \sum_{j=0}^{k5} \beta_5 \ln MDT_t + \sum_{j=0}^{k6} \beta_6 \ln MSL_t + \beta_7 \ln MFL_{t-1} + \beta_8 \ln RGDP_{t-1} + \beta_9 \ln PPG_{t-1} + \\ & \beta_{10} \ln NOV_{t-1} + \beta_{11} \ln MDT_{t-1} + \beta_{12} \ln MSL_{t-1} + \varepsilon_{t-1} \end{aligned}$$

Finally, in order to assess the long-run and short-run relationships stability, Cumulative Sum of Residual Recursive (CUSUM) and Cumulative Sum of Square of Residual Recursive (CUSUMSQ) were conducted.

#### 4. RESULTS AND DISCUSSION

The unit root tests result for each variable is shown in Table 2. All variables are stationary at first difference with various significant levels. Only MSL was consistently stationary for both categories at level. MFL, RGDP, and MDT achieved stationary level at multiple Intercept and Trend and Intercept categories. All variables for the constructed ARDL model cointegrate at maximum lag two at one percent of significance level. This model also passed all diagnostic checking i.e. free from normality, serial correlation, and heteroscedasticity, as shown in Table 3. Long-run and short-run coefficients show that there are significant relationships for all variables as shown in Table 4. For the long-run coefficient, RGDP, PPG, MDT, and MSL demonstrate positive relationship. An increase of one percent on RGDP, PPG, MDT, and MSL shows an increase of 0.36, 0.07, 1.74, and 1.46 percent to MFL. On the other hand, NOV is negatively correlated as an increase of one percent NOV results in a 0.12 percent decrease for MFL. For the short-run coefficient, it is found that PPG and MSL are positively correlated i.e. an increase of one percent PPG and MSL causes an increase of 0.10 and 2.00 percent increase on MFL, respectively. Meanwhile, RGDP and NOV are negatively correlated whereby an increase of RGDP and NOV by one percent causes a drop of MFL by 0.32 and 0.17 percent, respectively. Distinctive from other variables, MDT has short-run relationships at different lags and signs.

*Table following on the next page*

Table 2: Result of ADF and PP unit root tests

	Variable	ADF unit root test		PP unit root test	
		Intercept	Trend and intercept	Intercept	Trend and intercept
Level	<b>MFL</b>	-2.235(1)	-3.755(0)**	-2.545(9)	-3.707(2)**
	<b>RGDP</b>	-2.108(0)	-5.778(6)*	-2.111(1)	-3.084(3)
	<b>PPG</b>	0.660(1)	-3.062(0)	-0.257(0)	-3.062(0)
	<b>NOV</b>	-0.428(0)	-2.598(0)	-0.651(3)	-2.592(2)
	<b>MDT</b>	-2.943(1)***	-2.381(1)	-6.316(3)*	-6.281(2)*
	<b>MSL</b>	-3.578(0)**	-7.970(0)*	-3.980(4)*	-7.082(2)*
First difference	<b>MFL</b>	-10.032(0)*	-10.472(0)*	-10.275(1)*	-13.562(4)*
	<b>RGDP</b>	-3.890(6)*	-3.351(6)***	-4.645(2)*	-4.940(1)*
	<b>PPG</b>	-7.398(0)*	-7.787(0)*	-7.398(0)*	-8.494(3)*
	<b>NOV</b>	-4.546(0)*	-4.640(0)*	-4.560(2)*	-4.681(2)*
	<b>MDT</b>	-10.352(0)*	-10.559(0)*	-10.742(2)*	-11.249(3)*
	<b>MSL</b>	-10.418(0)*	-9.927(0)*	-11.146(1)*	-10.579(1)*

Notes: 1. \*, \*\* and \*\*\* represent 1%, 5% and 10% significance levels, respectively. 2. The optimal lag has been selected using the Schwarz information criterion (SIC) for ADF tests and the bandwidth has been selected using the Newey-West method for the PP test.

Table 3: Result of ARDL cointegration and Diagnostic Checking

Maximum lag	SIC	F Statistic	
2	(1, 2, 0, 0, 2, 0)	8.618*	
Critical Values for F-statistics <sup>#</sup>		Lower I(0)	Upper I(1)
1%		3.41	4.68
5%		2.62	3.79
10%		2.26	3.35
Normality	Serial correlation	Heteroscedasticity	
2.541	0.804	1.584	
[0.281]	[0.258]	[0.197]	

Note: 1. The critical values are obtained from Pesaran et al. (2001) based on case III: unrestricted intercept and no trend

2. \*, \*\*, and \*\*\* represent 10%, 5% and 1% level of significance, respectively.

3. The numbers in brackets [ ] are p-values.

The error correction model ( $ecm_{t-1}$ ) for this study is negative and significant at one percent level which subsequently validates the long-run relationship between the variables. The estimator measures the speed of adjustment of a dynamic model at 137 percent. The long-run and short-run coefficients are also stable when there is no line crossing the Bounds line at five percent level. Table 5 shows the stability of mean in CUSUM and variance in CUSUMSQ.

Table following on the next page

Table 4: Long-run and Shot Run Estimation

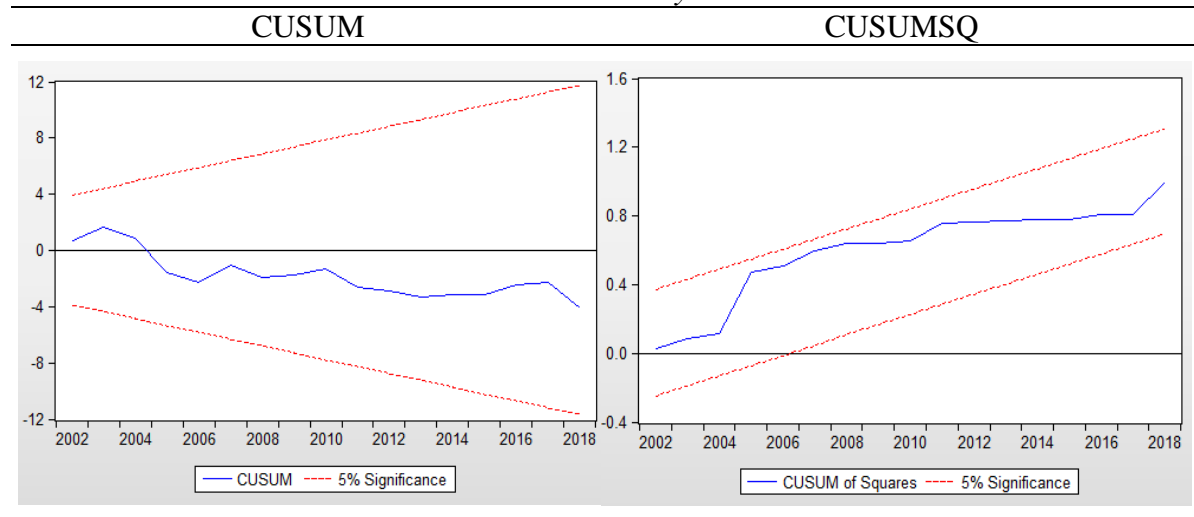
ARDL (1, 2, 0, 0, 2, 0)

Criteria: SIC

Estimation of Long-Run Elasticities		Estimation of Short-run Restricted Error Correction Model (ECM)	
Variables	Coefficient	Variables	Coefficient
LNRGDP	0.358* (0.029)	dLNRGDP	0.077 (0.150)
LNPPG	0.072** (0.034)	dLNRGDP (-1)	-0.321** (0.141)
LNNOV	-0.121* (0.039)	dLNPPG	0.099** (0.047)
LNMDT	1.740* (0.594)	dLNNOV	-0.165** (0.060)
LNMSL	1.460** (0.521)	dLNMDT	0.332** (0.133)
C	3.270 (1.955)	dLNMDT (-1)	-1.798** (0.670)
		dLNMSL	2.001** (0.772)
		$ecm_{t-1}$	-1.370* (0.159)

Note: Dependent variables. (\*), (\*\*), (\*\*\*) indicate significant at 10%, 5% and 1% significance level respectively. Number in brackets represent standard error.

Table 5: Stability test



The analysis found that all variables have significant relationships in the long and short-run. However, this study could not prove that the climate change variable will negatively affect marine fisheries resources. The increase of mean daily temperature only negatively affects in the short-run. In contrast, the increase of mean daily temperature and mean sea level do not negatively affect marine fisheries resources in the long-run. This might be due to the dependency level on marine fisheries resources and other fishery products such as aquaculture (Ding, Chen, Hilborn, & Chen, 2017b). Technological advancement is found to negatively affect marine fisheries resources in the long-run and short-run consistently. In 2017, there were 52,648 registered boats with various fishing gears according to tonnage class. From that figure,

29 percent were inboard-powered vessels, 66 percent were outboard-powered, and 5 percent were non-powered. The diversity of fishing gear and tonnage class is a threat to marine fisheries resources if these technologies are not managed wisely. Further, the number of vessels has significantly degraded the environment through CO<sub>2</sub> pollution from the fuels used (Parker et al., 2018). In addition, economic growth will positively affect marine fisheries resources in the long-run as opposed to the effects in the short-run. This finding corroborates the study by Ding et al., (2017a) and Sugiawan et al., (2017) who stated that economic growth, in the long-run, positively affects marine fisheries resources through conservation actions. Population growth does not affect marine fisheries resources in the long-run and short-run. However, the finding has not confirmed previous research by Ding et al., (2017a) and Sugiawan et al., (2017) who found that population growth will increase demands on seafood thus putting stress on marine fisheries resources. Moreover, the government's awareness in participating in global efforts such as Sustainable Development Goals – SDG contributes to the development of national marine fisheries sustainability. SDG is a universal agenda to end poverty, achieve community prosperity and wellbeing as well as to protect the environment by 2030 (United Nations Development Program [UNDP], 2016a). Among the important SDGs that are directly related to this study are SDG 13 and SDG 14. SDG 13 focuses on the immediate actions to combat climate change and its effect (UNDP, 2016b) while SDG 14 focuses on the governance of the sea to conserve and use the world's oceans and marine resources sustainably (Singh et al., 2018; United Nations, 2018).

## 5. CONCLUSION

The findings show that population and economic growth, technological advancement, and climate change does have relationships with marine fisheries resources in the long-run. The study used only 30 years of the dataset. Longer terms of data and additional variable on marine climate such sea surface temperature are necessary in to obtain a more accurate relationship between the variables. From the findings, policymakers can consider factors that could be possible threats to marine fisheries resources such as the number of vessels. As a result, the sustainability of marine fisheries will secure national economic prosperity and healthy protein supply.

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## LITERATURE:

1. Aguado, S. H., Segado, I. S., & Pitcher, T. J. (2016). Towards sustainable fisheries: A multi-criteria participatory approach to assessing indicators of sustainable fishing communities: A case study from Cartagena ( Spain ). *Marine Policy*, 65, 97–106. <https://doi.org/10.1016/j.marpol.2015.12.024>
2. Anneboina, L. R., & Kavi Kumar, K. S. (2017). Economic analysis of mangrove and marine fishery linkages in India. *Ecosystem Services*, 24, 114–123. <https://doi.org/10.1016/j.ecoser.2017.02.004>
3. Avadí, A., & Fréon, P. (2015). A set of sustainability performance indicators for seafood: Direct human consumption products from Peruvian anchoveta fisheries and freshwater aquaculture. *Ecological Indicators*, 48, 518–532. <https://doi.org/10.1016/j.ecolind.2014.09.006>

4. Badjeck, M. C., Allison, E. H., Halls, A. S., & Dulvy, N. K. (2010). Impacts of climate variability and change on fishery-based livelihoods. *Marine Policy*, 34, 375–383. <https://doi.org/10.1016/j.marpol.2009.08.007>
5. Belhabib, D., Lam, V. W. Y., & Cheung, W. W. L. (2016). Overview of West African fisheries under climate change: Impacts, vulnerabilities and adaptive responses of the artisanal and industrial sectors. *Marine Policy*, 71, 15–28. <https://doi.org/10.1016/j.marpol.2016.05.009>
6. Bhuiyan, M. A., Jabeen, M., Zaman, K., Khan, A., Ahmad, J., & Hishan, S. S. (2018). The impact of climate change and energy resources on biodiversity loss: Evidence from a panel of selected Asian countries. *Renewable Energy*, 117, 324–340. <https://doi.org/10.1016/j.renene.2017.10.054>
7. Carayannis, E. G., Barth, T. D., & Campbell, D. F. J. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, 72–73.
8. Carayannis, E. G., & Campbell, D. F. J. (2010). Triple helix, Quadruple helix and Quintuple helix and how do Knowledge, Innovation and the Environment relate To Each other? a Proposed Framework for a Trans-disciplinary analysis of Sustainable development and Social Ecology. *International Journal of Social Ecology and Sustainable*, 1(January-March). <https://doi.org/10.4018/jsesd.2010010105>
9. Charles, A. T. (2001). *Sustainable Fishery Systems*. Great Britain: Blackwell Science Ltd.
10. Ding, Q., Chen, X., Hilborn, R., & Chen, Y. (2017). Vulnerability to impacts of climate change on marine fisheries and food security. *Marine Policy*, 83(May), 55–61. <https://doi.org/10.1016/j.marpol.2017.05.011>
11. Ding, Q., Wang, Y., Chen, X., & Chen, Y. (2017). Effects of economics and demographics on global fisheries sustainability. *Conservation Biology*, 31(4), 799–808. <https://doi.org/10.1111/cobi.12873>
12. Diop, B., Sanz, N., Jamont, Y., Duplan, J., Hadji, E., Guene, M., ... Doyen, L. (2018). Maximum Economic Yield Fishery Management in the Face of Global Warming. *Ecological Economics*, 154, 52–61. <https://doi.org/10.1016/j.ecolecon.2018.07.027>
13. DOF. (2019). Annual Fisheries Statistic 2017. Retrieved from <https://www.dof.gov.my/index.php/pages/view/3343>
14. FAO. (2018). *The State of World Fisheries and Aquaculture. Meeting The Sustainable Development Goals*. FAO. Rome.
15. International Institute for Sustainable Development. (n.d.). Sustainable development. Retrieved October 9, 2018, from <https://www.iisd.org/topic/sustainable-development>
16. Merino, G., Barange, M., Blanchard, J. L., Harle, J., Holmes, R., Allen, I., ... Rodwell, L. D. (2012). Can marine fisheries and aquaculture meet fish demand from a growing human population in a changing climate? *Global Environmental Change*, 22(4), 795–806. <https://doi.org/10.1016/j.gloenvcha.2012.03.003>
17. MET. (2016). *MET Malaysia Annual Report 2016*. Retrieved from <http://www.met.gov.my/penerbitan/laporantahunan>
18. Parker, R. W. R., Blanchard, J. L., Gardner, C., Green, B. S., Hartmann, K., Tyedmers, P. H., & Watson, R. A. (2018). Fuel use and greenhouse gas emissions of world fisheries. *Nature Climate Change*, 8(April). <https://doi.org/10.1038/s41558-018-0117-x>
19. Pereira, J. J. (2018, December 23). We should be an example. *The Star Online*. Retrieved from <https://www.thestar.com.my/news/nation/2018/12/23/we-should-be-an-example-according-to-the-latest-report-on-climate-change-tropical-southeast-asia-is>
20. Pörtner, H. O., & Peck, M. A. (2010). Climate change effects on fishes and fisheries: Towards a cause-and-effect understanding. *Journal of Fish Biology*, 77(8), 1745–1779. <https://doi.org/10.1111/j.1095-8649.2010.02783.x>

21. SEAFDEC. (2017). *Southeast Asian State of Fisheries and Aquaculture 2017*. Southeast Asian Fisheries Development Center. Retrieved from <http://www.seafdec.org/download/southeast-asian-state-fisheries-aquaculture-2017/>
22. Sugiawan, Y., Islam, M., & Managi, S. (2017). Global marine fisheries with economic growth. *Economic Analysis and Policy*, 55, 158–168. <https://doi.org/10.1016/j.eap.2017.08.004>
23. Tang, K. H. D. (2019). Climate change in Malaysia: Trends, contributors, impacts, mitigation and adaptations. *International Journal of Research in Environmental Studies*, 650, 1858–1871. <https://doi.org/10.1016/j.scitotenv.2018.09.316>
24. Tran, N., Chu, L., Yee, C., Genschick, S., Phillips, M. J., & Kefi, A. S. (2018). Fish supply and demand for food security in Sub-Saharan Africa : An analysis of the Zambian fish sector. *Marine Policy*, (November), 1–8. <https://doi.org/10.1016/j.marpol.2018.11.009>
25. UNDP. (2016a). Goal 13 targets. Retrieved January 6, 2019, from <https://sustainabledevelopment.un.org/sdg13>
26. UNDP. (2016b). *Goal 14: Life below water*. Sustainable Development Goals. <https://doi.org/10.1017/CBO9781107415324.004>

## THE LEGAL ENVIRONMENT OF BUSINESS – THE ACCELERATED ARRANGEMENT PROCEEDINGS IN CASE OF INSOLVENCY OF THE ENTERPRISE IN POLAND (SELECTED ISSUES)

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### **ABSTRACT**

*The aim of the study is to discuss the accelerated arrangement proceedings as a way to avoid declaring bankruptcy and ensure further activity of the enterprise which is insolvent or threatened with insolvency in Polish legal system. The analysis reflects the comparison between the accelerated arrangement proceedings and other restructuring procedures established under Polish regulations. The paper concentrates on the characteristics of the subsequent stages of the accelerated arrangement procedure and the possibilities of using different legal measures to safeguard the interests of the insolvent enterprise at each stage of the procedure. In particular, the restructuring plan, the restructuring measures and the inventory of receivable debts are in focus. The article not only pays attention to legal regulation of the abovementioned procedure but also to practical consequences and possible threats to the wellbeing of the enterprise after issuing an application for the opening of accelerated arrangement proceedings. Subject to analysis is also the right time to initiate the accelerated arrangement proceedings and possible consequences of not initiating it in the right time. Last part of the text concentrates on the process of concluding the agreement by the debtor with his creditors. Description of the procedures of establishing the inventory of receivable debts and convening the meeting of creditors in order to hold a vote on the arrangement is limited with the stress being put on the possibility to continue the proceedings even in case of passive attitude of some creditors.*

**Keywords:** *bankruptcy, insolvency, accelerated arrangement procedure, restructuring procedure, restructuring plan*

### **1. INTRODUCTION**

Since 1 January 2016 the procedure in case of financial problems or insolvency of the enterprise in Poland has been regulated mainly by the texts of two acts - the Bankruptcy Law of 28 February 2003 (until 1 January 2016 known as the Bankruptcy and Reorganisation Law) and the Restructuring Law of 15 May 2015 (which is an entirely new legal act). These two acts regulate the situation of enterprises that are struggling with severe financial problems – both at an early stage (the threat of liquidity loss) and at its very advanced stage (bankruptcy). The aims of procedures regulated by the Bankruptcy Law and the Restructuring Law are different – in case of bankruptcy the aim is to enable the claims of the creditors to be satisfied to the greatest extent and, where the practical conditions allow, the existing enterprise of a debtor to be preserved. In case of restructuring procedures the aim is to avoid declaration of bankruptcy of a debtor through enabling him to undergo restructuring by making an arrangement with creditors and, in the case of remedial proceedings, also through conducting remedial actions, while securing legitimate rights of creditors. The Restructuring Law distinguishes four different restructuring procedures that can be initiated in the Restructuring Court. These are the arrangement approval proceedings; the accelerated arrangement proceedings; the arrangement proceedings and the remedial proceedings. The essence of three arrangement proceedings is in fact the same. Their purpose is to conclude the arrangement between the debtor and the creditors under the supervision of the Restructuring Court without any measures which are to be taken before the arrangement.



The premises differentiating various types of arrangement proceedings are the procedure of voting and the total sum of disputed receivable debts. Separate to the arrangement proceedings is the remedial proceedings both because of the premises of initiating and because of the scope of possible measures that can be taken in the course of the procedure. (Witosz, 2015, p. 11-12). The accelerated arrangement proceedings enables the debtor to make an arrangement with creditors after the preparation and approval of the list of receivable debts. The list is prepared in a simplified procedure. The proceedings may be conducted if the sum total of disputed receivable debts giving the right to vote on arrangement does not exceed 15 per cent of the sum total of receivable debts giving the right to vote on an arrangement. The accelerated arrangement proceedings is the restructuring procedure that is the fastest, the least costly – as it comes to the costs of the sole proceedings and one of the least complex.

## **2. PROCEEDINGS FOR THE OPENING OF THE ACCELERATED ARRANGEMENT PROCEDURE**

### **2.1. Locus standi and formal requirements of the application**

Accelerated arrangement proceedings – as all restructuring procedures – consists of two main parts: proceedings for the opening of accelerated arrangement proceedings and proceedings after the opening of accelerated arrangement proceedings (the proper/pure accelerated arrangement proceedings). Procedure for the opening of accelerated arrangement proceedings is initiated by an application. None of the provisions of the Restructuring Law (or any other act) stipulates initiation of the proceedings ex officio, which reflects the basic principle that the parties delimit the subject matter of the proceedings. Introducing this principle into accelerated arrangement proceedings relates to the belief that successful restructuring cannot take place without the clear intention of the stakeholders of the procedure. Since the priority aim of the proceedings is to avoid declaration of bankruptcy and to preserve the enterprise in the market, pursuing this aim without the will of the stakeholders may impinge on their civil and constitutional rights. The person who is legitimate to initiate the accelerated arrangement proceedings is only the debtor himself and the persons representing the debtor being a legal person or an unincorporated entity in which a separate law vests legal capacity. Application issued by entities other than the debtor will be rejected. Accordingly, the accelerated arrangement proceedings – contrary to the bankruptcy procedure and the remedial proceedings – cannot be initiated by any of the creditors (neither the personal one nor the one with a mortgage or pledge). Such restriction must be generally assessed positively. The accelerated arrangement proceedings is thought to be the fastest and the least complex of all restructuring procedures taking place with the active participation of the court (apart from the arrangement approval proceedings, in which the participation of the court is highly limited) so it is possible only with the highest motivation of the debtor. The debtor must be properly represented in the accelerated arrangements proceedings. The Restructuring Law does not include the equivalent for article 20 par. 2.2 of the Bankruptcy Law, pursuant to which a petition for bankruptcy in case of legal persons or organisational units without legal personality that are granted legal capacity by a separate act of law – may also be filed by whoever has the right to represent the debtor and manage their affairs on the basis of act, company deed or its articles of association, either individually or jointly with other persons. Where the authority to represent the entity is conferred on two or more persons single Executive Board member is not entitled to apply for the opening of accelerated arrangement proceedings. Such regulation is connected with the lack of obligation of the debtor to issue the restructuring application and what is connected with this, the lack of responsibility for not issuing it resting on the members of the Executive Board. In case of partners of a civil partnership each of them can apply for accelerated arrangements proceedings on his own behalf. The procedure, after accepting the application, will be conducted only towards the partner that was the applicant.

Issuing the application by one of the partners of a civil partnership will not result in opening the accelerated arrangement proceedings towards the other partners. Even in case the majority of partners decide in the form of the resolution that the application for opening of the restructuring proceedings is to be issued, the application signed by one of the partners will cause opening of the procedure towards this partner only. The reason for such interpretation is that opening of the accelerated arrangement proceedings, in contrast to issuing a ruling by a Civil Court relating to payment obligations of the partners, is enforceable against all of the debtors property and not only against the common property of the partners. In such circumstances the resolution of partners may not enable one partner to apply for the restructuring of the others (similarly Filipiak, 2016, Lex, par. 10). The prosecutor lacks the capacity to apply in the accelerated arrangement proceedings. Pursuant to article 7 par. 1 of the Restructuring Law, unless the Act provides otherwise, the restructuring proceedings shall be instituted on the basis of the restructuring application filed by the debtor. The term 'The Act' must be interpreted strictly as covering only the Restructuring Law act (similarly SC, III CZP 58/05; Adamus, 2016, Legalis, par I.4; Filipiak, 2016, Lex, par. 12). The application for the opening of accelerated arrangements must comply with the formal requirements laid down in both – the general regulations of the civil procedure code (further also as CCP) and the specific regulations of the Restructuring Law (further also as RestLaw). This means the application must comply with the requirements for the procedural document (article 126 par. 1 CCP), the requirements for the first procedural document in the case (article 126 par. 2 CCP) and the requirements from articles 227 and 228 of The Restructuring Law. The lastly mentioned provisions are *lex specialis* towards the provisions of the CCP. When it comes to specific formal requirements of the application for the opening of accelerated arrangements proceedings they are set out mostly in article 227 RestLaw. Application covers, *inter alia*, precise indentifying data of the debtor, arrangement proposals with the initial restructuring plan, the amount and list of disputed claims, the total sum of receivable debts and the list of creditors. Along with the application for the opening of the accelerated arrangement proceedings, the debtor shall submit a written statement that the information contained in the application and attachments is true and complete. If the statement referred to above is not true, the debtor shall be liable for any harm caused by misrepresentation. The fee for application for the opening of the accelerated arrangement proceedings is 1.000 PLN (around 230 Euro, the fee is the same for all restructuring proceedings). The debtor shall also pay an advance on expenses relating to the accelerated arrangement proceedings in the amount of an average monthly salary in the enterprises sector, excluding payments of benefits from the profit in the third quarter of the previous year, as announced by the president of the Central Statistical Office (in 2018 it was 4.821,80 PLN, which is around 1.420 Euro). The proof of payment shall be submitted together with the application. In case of failure to pay the advance, the chairman shall call for settling the advance payment within a week, otherwise the application shall be returned (article 230 RestLaw).

## **2.2. The premises of opening of the accelerated arrangement proceedings**

Restructuring proceedings – including the accelerated arrangement proceedings - may be conducted against a debtor who is insolvent or threatened with insolvency (art. 6 RestLaw). As the Restructuring Law is designed for both insolvent debtors and debtors threatened with insolvency, it is absolutely unnecessary for the Restructuring Court to determine if the debtor is insolvent or threatened with insolvency in case of an application for opening of the accelerated arrangement proceedings. The only exception is considering these premises in case of an application to open remedial proceedings issued by a creditor (art. 283 par. 2 RestLaw). The state of insolvency of a debtor is defined in art. 11 of the Bankruptcy Law of 28 February 2003, to which the Restructuring Law refers. Under the definition included in this act a debtor is considered insolvent, if one is no longer able to pay his debts as they fall due.

The Bankruptcy Law makes a legal presumption of insolvency in case of the delay in the payment of debts exceeding three months. A debtor who is a legal person or an organisational unit without legal personality that is granted legal capacity, is also considered insolvent when their debts exceed the value of their assets and this state of affairs persists for a period longer than twenty four months. The state of threat of insolvency happens when the economic situation of a debtor suggests that he may shortly become insolvent. Another premises of opening the accelerated arrangement proceedings are defined in art. 8 par. 1 and art. 3 par. 3.2 of the Restructuring Law and are negative which means they must not occur for the accelerated arrangement proceedings to be opened. These premises are: detrimental effect of accelerated arrangement proceedings to the creditors (art. 8 par. 1 RestLaw) and exceedance of the total disputed claims which give the right to vote on the arrangement of the level of 15% of the total claims giving the right to vote on the arrangement (art. 3 par. 3.2 RestLaw). The term "effect of proceedings that would be detrimental to creditors" is a typical general clause, which is filled with content by the court while deciding on opening of the accelerated arrangement proceedings or dismissing the application. Detrimental effect of the proceedings may be determined for example when the activity of the debtor and the way in which the debtor is managing the enterprise or the way in which the debtor is negotiating with creditors indicate that the true aim of the debtor is to avoid the enforcement proceedings or to go through the arrangement with the use of the creditors concluding apparent contracts with the debtor (Gurgul, 2018, Legalis). The percentage of the total disputed claims which give the right to vote on the arrangement and its relation to the level of 15% of the total claims giving the right to vote on the arrangement is established by the Restructuring Court analyzing the application for the opening of the accelerated arrangement proceedings only on the basis of the debtor's declaration. (similarly Hrycaj, 2017, Lex, par. 9, Gajdzińska-Sudomir, 2016, p. 4 - 21) Pursuant to article 232 par. 1 - 2 RestLaw, the court shall examine the application for opening the accelerated arrangement proceedings in closed session solely on the basis of the documents attached to the application within a week of its filing. Both the evidence limitations and short indicative time limits to examine the application introduced in accelerated arrangement proceedings (art. 232 par. 1-2 RestLaw) make the verification of the proportion impossible at the stage of recognition of the application for the opening of the proceedings. The ability of the debtor to pay current costs of proceedings and to perform any obligations arisen after their opening is not analyzed by the Restructuring Court dealing with the application for the opening of the accelerated arrangement proceedings and its lack, contrary to the remedial and arrangement proceedings, is not the negative premise of the discussed procedure.

### **2.3. The ruling on the opening of accelerated arrangement proceedings**

An application for the opening of the accelerated arrangement proceedings shall be examined by the court – as a rule - at a closed session within one week of the day when it was filed solely on the basis of the documents attached to the application. While granting the application for the opening of accelerated arrangement proceedings the court shall issue a decision to open accelerated arrangement proceedings. The decision shall be announced in the Register. In the decision the court shall: list the name and surname of the debtor or his full legal name, place of residence or registered office, address and PESEL number or a number in the National Court Register, and in their absence - other data which allow his unambiguous identification; designate a judge-commissioner and a court supervisor and indicate the time of issuing the decision if the debtor is a participant under Polish law and/or the law of another EU Member State of the payment system and/or securities settlement system, and/or a non-participant entity operating the interoperating system. Pursuant to article 233 par. 2 RestLaw, the decision on opening accelerated arrangement proceedings shall also indicate the basis for the jurisdiction of Polish courts.

If Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on bankruptcy proceedings applies, the decision shall also specify whether the proceedings are of primary or secondary character. A decision on refusal to open accelerated arrangement proceedings may be complained against only by the debtor. A pronouncement on the opening of proceedings by a second-instance court is inadmissible. A creditor within a week from the date of the announcement of the decision to open accelerated arrangement proceedings in the Register may lodge an appeal against this decision exclusively in the part concerning the jurisdiction of Polish courts. The term for a creditor who, on the day when the proceedings were opened, had his seat or ordinary place of stay abroad, is thirty days. The decision to open accelerated arrangement proceedings is effective and enforceable as of the date of its issuing. The effectiveness and enforceability of the decision to open the accelerated arrangement proceedings is not limited. In particular the possibility of questioning by a creditor the basis for the jurisdiction of Polish court does not have any influence on the course of the procedure. Subsequent stages of the proceedings should be taken in accordance with the Restructuring Law. The list of creditors should be established and approved by the court, restructuring plan should be submitted, approved and implemented, even the meeting of the creditors should be called, voting ordered and the arrangement agreed and approved without awaiting for the result of the appeal concerning the jurisdiction. The result of the appeal decides only if the proceedings is main/primary or secondary one.

### **3. PROCEEDINGS AFTER THE OPENING OF THE ACCELERATED ARRANGEMENT PROCEDURE (THE PROPER / PURE ACCELERATED ARRANGEMENT PROCEEDINGS)**

#### **3.1. The arrangement estate and administration of properties**

Pursuant to art. 240 RestLaw, as of the day of the opening of accelerated arrangement proceedings the property serving to run the enterprise and the debtor's property becomes the arrangement estate. The arrangement estate is a property conglomerate of debtor's assets including tangible and intangible assets. It occurs under the law at the day of the opening of accelerated arrangements procedure. It is not possible to avoid this effect in the course of a civil law activity. During the course of accelerated arrangements procedure the property of a debtor is not sold – which is a difference in relation to the bankruptcy procedure. The arrangement estate consists of different elements than the bankruptcy estate and serves different purpose. The arrangements estate includes only the assets and does not include the liabilities. Transferable right to use an assets is included in the arrangement estate (SC, V CSK 405/11). After opening of accelerated arrangement proceedings, the debtor shall provide the judge-commissioner and the court supervisor with all the necessary explanations, documents concerning his undertaking and property and enable the court supervisor to become familiar with the debtor's undertaking, in particular with the debtor's accounting records. During the accelerated arrangement proceedings it is the debtor himself who administrates the properties. The court may ex officio revoke the self-administration of the debtor and appoint an administrator if the debtor, even unintentionally, has breached the law in the area of exercising the administration, which has resulted in detriment to creditors and/or the possibility of such detriment in the future or if it is clear that the manner of exercising the administration does not guarantee the performance of the arrangement and/or a custodian has been appointed for the debtor. The court may ex officio revoke the self-administration of the debtor and appoint an administrator also if the debtor does not perform the directions of the judge-commissioner or the court supervisor, in particular, if the debtor has failed to file lawful arrangement proposals within the period prescribed by the judge-commissioner. The decision to revoke the self-administration of the debtor and the appointment of an administrator is effective and enforceable as of the date of its issuing. It may only be appealed by the debtor.

### **3.2. Asserting claims of receivable debts to be included in the inventory of receivable debts**

The opening of accelerated arrangement proceedings shall not preclude initiation by the creditor of judicial or administrative proceedings, as well as proceedings before administrative and conciliatory courts with a view to seeking the recovery of receivable debts to be included in the inventory of receivable debts (art. 257 RestLaw). It also does not preclude the possibility to continue the proceedings concerning such claims initiated before the opening of the procedure. The debtor shall forthwith inform the court supervisor about judicial or administrative proceedings, or proceedings before administrative and conciliatory courts concerning the arrangement estate conducted for the benefit or against the debtor. In these cases the debtor's recognition of a claim, waiver of a claim, conclusion of a settlement or ascertainment of circumstances important for the case without the consent of the court supervisor shall not give rise to legal effects. The costs of the proceedings initiated beyond the Restructuring Court fall on the parties, including the debtor, according to standard rules, even if there was no obstacles to include the receivable debts in the inventory of receivable debts. Execution proceedings concerning a receivable debt covered by the arrangement by operation of law, initiated prior to the day when the accelerated arrangement proceedings were opened, are suspended by operation of law on the day when the proceedings are opened. Upon the request of the debtor or court supervisor, the judge-commissioner shall state in the decision the suspension of the enforcement proceedings. The enforcement authority shall also be served with the decision (Article 257 par. 1 RestLaw). Suspension of the execution proceedings does not confer an automatic cancellation of effected seizure, e.g. of receivable debts from bank accounts or other business entities. Upon the motion of the debtor or the court supervisor, the judge-commissioner may set aside the seizure effected prior to the day when the accelerated arrangement proceedings were opened in execution proceedings or in securing proceedings concerning a receivable debt covered by the arrangement by operation of law if it is necessary for further running of the enterprise. The decision is also delivered to the enforcement authority. The initiation of execution proceedings and the enforcement of a ruling on securing a claim or ordering securing a claim resulting from a receivable debt covered by the arrangement by operation of law is inadmissible after the day when the accelerated arrangement proceedings were opened. Pursuant to the amendment of The Restructuring Law that is to be enforceable since 24 March 2020, as to the claims for which initiation of the execution proceedings and the enforcement of a ruling on securing a claim or ordering securing a claim is not admissible, from the day of opening of the accelerated arrangement proceedings, the limitation period does not commence and the commenced become suspended for the time of the whole accelerated arrangement proceedings. A creditor having a receivable debt secured on the debtor's property by a mortgage, pledge, registered pledge, Treasury pledge or a ship's mortgage may, in the course of accelerated arrangement proceedings, carry out execution out of the object of security only. Upon the motion of the debtor or the court supervisor, the judge-commissioner may suspend the execution proceedings concerning receivable debts which are not covered by the arrangement by operation of law, if the execution was levied against the object of security necessary for the running of the enterprise. The total period of the said suspension shall not exceed three months. The seized object may be released from seizure in accordance with the provisions of the Code of Civil Procedure.

### **3.3. The arrangement**

The proceedings after the opening of the accelerated arrangement procedure should be fast and simple. Its main stage deciding if the restructuring process will be successful is concluding the arrangement between the debtor and the creditors. The step that is prior to concluding the arrangement is submission and noticing of a restructuring plan, which is one of the main documents prepared during the restructuring process.

The plan is the evidence base for the whole restructuring proceedings. The purpose of the restructuring plan is to provide the court, the judge-commissioner, the court supervisor and the creditors with the knowledge about the enterprise enabling them to analyse the propositions of restructuring measures in the context of their enforceability, the level of risk and their compliance with the condition of the enterprise. Preparation of the restructuring plan is obligatory. Its content is defined in art. 10 RestLaw. Preparing and submitting the plan in the accelerated arrangement procedure is the duty of the court supervisor, also the supervisor is obliged to take into account the restructuring proposals presented by the debtor. The term for submission of the restructuring plan is two weeks of the date of opening of the accelerated arrangement proceedings. The term is very short, as the procedure is accelerated. In comparison e.g. in remedial proceedings the term to submit the restructuring plan is thirty days, which in duly justified cases may be extended by the judge-commissioner up to three months. Hence, both in all restructuring procedures, including the accelerated arrangement one, the deadline for preparing the restructuring plan is non-binding, violating the term may only render the administrator liable to disciplinary action. The restructuring plan shall be filed in electronic form and entered into the Register. For the time being, as the Register has not been launched yet, the plan is written and is announced in the Official Court and Commercial Gazette (called 'Monitor Sądowy i Gospodarczy'). This way it becomes available to all interested – especially to the creditors who can assess the probability of its performance and basing on this assessment they can make decision concerning the acceptance of the restructuring proposals. The plan replaces separate justification of the restructuring proposals and the creditors are able to verify the advances in its performance during implementation of the arrangement. (Justification, 2015, p. 17). The Restructuring Law indicates obligatory, minimum components of the restructuring plan. The level of details depends on many factors such as e.g. the size of the enterprise or the scope of restructuring. The content of the plan may not consist only with general wording and should be clear enough to consider if the plan provides real possibility of restructuring. The plan should include as much information as possible for the creditors to establish their opinion considering the reality of performing the underlying assumptions. In practice it is not rare that some parts of the plan are more complex than the others (Adamus, 2015, Legalis). Among others the restructuring plan should also contain a full description and review of planned restructuring measures and related costs; a schedule of implementation of restructuring measures and the final time limit for the restructuring plan implementation (art. 10 par. 1 p. 4 – 5 RestLaw). Unlike in another restructuring proceedings, in accelerated arrangement procedure the restructuring plan is not approved by the judge-commissioner, it is only announced, as the process of approving would make the proceedings much longer. Together with submission of the restructuring plan – within the same deadline of two weeks - the court supervisor submits to the judge-commissioner the inventory of receivable debts and the inventory of disputed receivable debts. Those inventories are announced in the Register too (for the time being in the Official Court and Commercial Gazette, as the Register has not been launched yet). Immediately after the submission of those three documents, the judge-commissioner schedules the time limit of the meeting of creditors in order to vote on the arrangement. The judge-commissioner notifies the creditors entered into the inventory of receivable debts of the date of the meeting, while serving on them the arrangement proposals, the information about the division of creditors entered in the inventory of receivable debts due to categories of interests, information about the manner of voting at the meeting of creditors and an instruction about the contents of suitable articles of the Restructuring Law. The same rules apply to creditors entered into the inventory of disputed receivable debts. When giving notice to a creditor entered into the inventory of disputed receivable debts, the judge-commissioner indicates that he may admit one to participate in the meeting of creditors if one credibly establishes the existence of the receivable debt.

In practice, it is rare to meet the deadline of immediate scheduling of the meeting of creditors. Opposite, it is very often that the judge-commissioner waits for some discussions of the debtor and his creditors to be completed. Practice shows that usually debtors initiate the proceedings for the opening of the accelerated arrangement procedure at an early stage, when they do not have the acceptance for their proposals from the creditors yet. Discussions usually take place before the meeting in the court and during the meeting it is only voting that is to be conducted. The terms of agreement are agreed beforehand. Such practice allows more space and flexibility in discussions and gives more chances to work out the arrangement. The arrangement is concluded during the meeting of creditors that take place in the court. Under art. 150 of the Restructuring Law, the arrangement shall cover personal receivable debts arisen prior to the day of opening of restructuring proceedings unless otherwise provided in the act, interest for the period from the day of opening of restructuring proceedings and receivable debts contingent upon a condition if the condition was fulfilled during the performance of the arrangement. Receivable debts in respect of a debtor under a mutual contract which was not performed in full or in part before the day of opening of restructuring proceedings shall be covered by an arrangement only in the case where the performance of the other party is a divisible performance and only to the extent in which the other party fulfilled the performance before the day of opening of restructuring proceedings and has not received mutual performance. The arrangement shall not cover: maintenance and alimony receivable debts and pensions constituting compensation for causing diseases, incapacity to work, disability or death and resulting from conversion of the rights covered by the substance of the right to annuity into pension for life; claims for release of the assets and abstention from infringement of rights; receivable debts for which the debtor is liable in connection with acquisition of inheritance after the day of opening of restructuring proceedings, after the inheritance was included in the arrangement estate or remedial estate and receivable debts resulting from social insurance premiums in the part financed by the insured, the remitter of which is the debtor. It shall also not cover receivable debts under an employment relationship and receivable debts secured on the debtor's property by a mortgage, pledge, registered pledge, Treasury pledge or ship's mortgage, to the extent covered by the value of the object of security, unless the creditor expressed consent for covering the receivable debt by the arrangement. The consent shall be expressed in an unconditional and irrevocable manner, no later than before commencement of voting on the arrangement. It may be expressed verbally during the meeting of creditors and recorded in its minutes. Covering by the arrangement of a receivable debt which is covered by another arrangement is inadmissible, unless said agreement has been revoked. Pursuant to article 150 par. 1 of the Restructuring Law the arrangement covers personal receivable debts arisen prior to the day of opening of restructuring proceedings. Personal receivable debts are receivable debts from the contractual relationship between the debtor and the creditor. The source of relationship is usually the contract, the tort or unjust enrichment. Non-personal receivable debts are not covered by the arrangement. Non-personal receivable debts are receivable debts of a creditor whose claim that can be directed at the debtor is the claim of drifting the execution from particular asset of the debtor. The example can be the liability of the mortgagor, which restricts only to the subject of the mortgage. If the owner of the immovable property is not personal debtor in case of the awarding from him to the creditor the mortgage sum of money the court should of its own motion reserve the debtor the right to claim limited liability in the course of execution (CA, I ACa 761/13). Taking into consideration the date of the obligation the receivable debts may be divided into two groups – the debts which arose before the date of the opening of the accelerated arrangement procedure and those which arose after that date. The arrangement covers all receivable debts which arose up to the end of the day before the opening of the accelerated arrangement procedure. The receivable debts which arose in the day of opening of the accelerated arrangement proceedings and later are not

covered by the arrangement and should be met on an ongoing basis in the course of the proceedings and after its finishing with the exception of interest for the period from the day of opening of the restructuring proceedings which are covered by the arrangement also within the sum which arises after the date of opening of the accelerated arrangement proceedings. The date of arising of the receivable debt is the decisive moment. According to the judgement of The Supreme Court, concluding and approving of the arrangement does not influence on the sole existence of the receivable debts but determines the limits of its execution or other ways of satisfying, being binding so long as the approved arrangement is binding and under the condition that it is performed. (SC, V CSK 416/12)

#### 4. CONCLUSIONS

Accelerated arrangement proceedings is a restructuring procedure that enables the debtor to continue the activity of an enterprise even in severe financial trouble. The main purpose of the proceedings is to avoid declaration of bankruptcy through enabling the debtor to undergo restructuring by making an arrangement with creditors. Accelerated arrangement proceedings is dedicated to entrepreneurs who have clear financial situation, do not dispute their receivable debts and are able to conclude arrangement with creditors in their current situation, without conducting any restructuring activities prior to the arrangement. It may be conducted if the sum total of disputed receivable debts giving the right to vote on arrangement does not exceed 15 per cent of the sum total of receivable debts giving the right to vote on an arrangement. The main advantages of the accelerated arrangement proceedings are its short time, clear rules and simple stages. In this procedure the space for court decisions has been limited to the lowest level. The court only checks if the formal requirements of the application were met by the applicant and if so it opens the proceedings. After the opening there is mainly one step to be taken by the judge-commissioner which is announcing the restructuring plan and inventory of debts and after this step there comes the scheduling of the meeting of creditors. The positive aspect is also the way of counting the required majority of votes, which makes passive creditors and creditors unwilling to vote unable to sabotaging the arrangement. Possible threat is the risk of the extension of the procedure due to unexpected occurrences.

#### LITERATURE:

1. Adamus R. (2016) Commentary on art. 7 of the Restructuring Law. C. H. Beck/Legalis.
2. Filipiak P. (2016) Commentary on art. 9 of the Restructuring Law. Wolters Kluwer/Lex.
3. Gajdzińska-Sudomir M. (2016), Wierzytelności sporne uprawniające do głosowania nad układem – wierzytelności uprawniające do głosowania nad układem. Doradca Restrukturyzacyjny Nr. 4/2016.
4. Gurgul S. (2018) Commentary on art. 8 of the Restructuring Law. C. H. Beck/Legalis.
5. Hrycaj A. (2017) Commentary on art. 3 of the Restructuring Law. Wolters Kluwer/Lex.
6. The Court of Appeal in Białystok, judgement I ACa 761/13, 14.05.2014. Legalis. The Supreme Court, judgement III CZP 58/05, 14.09.2005. Legalis.
7. The Supreme Court, judgment V CSK 405/11, 18.10.2012. Legalis.
8. The Supreme Court, judgement V CSK 416/12, 15.03.2013. Legalis
9. Justification to the project of the Restructuring Law, 2015, available at: [www.gov.pl](http://www.gov.pl).
10. Witosz A. (2015) The administration in possession of the debtor in the Restructuring Law. Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach.



## NATURAL RESOURCE ENDOWMENT AND SUSTAINABLE DEVELOPMENT LINKAGE IN ETHIOPIA

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### ABSTRACT

*Natural resource endowment in many economies of the world became a curse rather than blessing. The purpose of this study is to examine the link between natural resource endowment and sustainable development in Ethiopia over the period 1981 to 2016 using an Autoregressive distributed lag (ARDL) modeling approach. The findings suggest that natural resources endowment has no significant effect on sustainable development (measured by adjusted net national income) in Ethiopia in the long run but it has a statistical significant negative effect in the short run, supporting the hypothesis in the resource curse literature. Among the other variables included in the model of sustainable development, investment (gross capital formation) and human capital are found to have a significant positive effect while debt servicing is found to affect sustainable development in Ethiopia negatively in the long run. On the other hand, population growth and trade openness are found to have a statistically significant negative effect on sustainable development in Ethiopia both in the long run and short run. Policies towards increasing the human capital stock in the country, among others, are the policy options that the government could work on so as to tackle the possible problems of natural resource curse and achieve sustainable development goals in the country.*

**Keywords:** *Natural Resources Endowment, Sustainable Development, Resource Curse, Ethiopia*

### 1. INTRODUCTION

There is a growing awareness of the increasingly sharp demands that human societies place on their economies and their natural environment, and of the corrosion of many social and political institutions. The sustainability movement calls for a more sophisticated and inclusive view of development and well-being that explicitly takes into account ecological health, natural resource stocks, vibrant and just communities, and democratic processes (Hackett, 2006). In more detail, Kahn (1995) clearly shows the three imperatives of sustainable development: economic sustainability, social sustainability and environmental sustainability. Economic sustainability, can be observed from point of view of, growth, productivity and trickle down whereas, social sustainability, can be observed from point of view of, equity, empowerment, accessibility, participation, sharing, institutional stability and environmental sustainability, can be observed from point of view of, eco-system integrity, carrying capacity and biodiversity. Therefore, the extraction and consumption of resources should be in line with these objectives. Ethiopia's economy experienced strong, broad-based growth averaging 10.3 percent a year from 2006/07 to 2016/17. Agriculture, construction and services accounted for most of the growth, with modest contribution from the manufacturing sector. The top ten exports of the country mostly comprises of primary commodities. Although the country has geological potential for the discovery of new, sizeable oil, gas and mineral deposits, most of its extractive industries are infant.

Currently, there is one large scale gold mine in operation, ‘Lege Dembi open pit mine’, while a growing number of large mining projects are under development and exploitations for oil and natural gas is intensifying after significant discoveries in neighboring countries (WBG, 2018). The question is what kind of relationship do exists between natural resources endowment and sustainable development? Can resource endowment matters for sustainable development? Mahatma Gandhi, rightly pointed out that, “The earth provides enough to satisfy everyone’s need, but not everyone’s greed” (Singh, 2006). Earliest growth theories indicates that significant revenues from natural resources should generate wealth, improves economic growth and reduces poverty. However, existing studies end up with mixed results, viewing natural resources as both a curse and blessing. In particular, after Sachs and Warner (1995,1997,2001), assert that resource rich countries grow slower while Ross(2001,2004), states that oil hinder democracy and fuels civil wars, the resource curse given too much attention. There are, however, a few countries that have managed to avoid this paradox which referred as exceptions of resource curse (Gylfason, 2010). In the resource led-growth literature natural resource endowment leads to development. Conceptual frameworks such as the staples theory and the vent for surplus theory consider the presence of excess resources that are insufficiently exploited in economies usually small and closed and trade allows to foster exports and growth because natural resources are used productively (Barbier, 2007), mining promoted the establishment of prestigious educational centers and diffused knowledge to other activities (David et al., 1997; Wright, 2001). However, in the resource curse literature natural resource endowment leads to underdevelopment. The allocation of resources between productive sectors with different spillover effects on aggregate growth emphasizes the role of specialization in economic development. Economies in which production is based on natural resource abundance, where manufacturing and services account for only a small share of the productive structure, will grow more slowly (Philip, 2007; Jalloh, 2013 and Nezhad, 2014), in addition, the so-called Dutch disease is an important concept in the literature on the natural resource curse hypothesis. Economies with abundant natural resources are subject to periodic rises and falls in their performance because commodity prices on world markets are variable and from time to time new exploitable natural resources are discovered. This process generates volatility in export and fiscal earnings and a real appreciation in the value of the country’s currency, hurting other export industries (Willebald et.al, 2015). Further, in a society with rampant corruption, more natural resources may hinder growth. In such countries more natural resources may stimulate predation, rent-seeking, and other destructive and/or non-productive activities, in turn creating negative externalities for the rest of the economy (Torvik, 2009), institutional quality can help reduce the curse or may even turn it into a blessing, but it is not obvious what type of institutional qualities is most beneficial in reaping the benefits of natural resources (Moshiri, 2017). Why this study? prior works that examines the link between natural resource endowment and economic growth or development, didn’t purely consider the issue of sustainable development, as far as the concept and measures of economic growth and economic development are different from sustainable development this consideration is vital. Furthermore, as far as our literature covers no previous empirical works exist in Ethiopia on this area. Therefore, this study tries to fill this gap. There are wide range of ambitious development visions in Ethiopia, in order to achieve those goals a systematic examination of the link between natural resource endowment and sustainable development is crucial. Specifically, the study seeks; (1) To identify whether there is any co-integrating relationship between natural resource endowment and sustainable development in Ethiopia; and (2) To investigate empirically the short run and long run relationship between natural resource endowment and sustainable development in Ethiopia.

## 2. METHODOLOGY

### 2.1. Theoretical Framework

In specifying the model of sustainable development to be estimated, the theoretical framework for this study closely follows the specification given in Ding et al. (2016). Following the resource curse literature, the empirical specification in Ding et al. (2016) captures the effects of natural resource endowment on development based on a variant of endogenous growth model specified as:

$$y_t = \beta_0 + \beta_1 Z_t + \beta_2 TNRR_t + \varepsilon_t \dots \dots \dots (1)$$

where  $y_t$  represents adjusted net national income,  $Z$  denotes a vector of control variables for sustainable development,  $(TNRR)$  represents total natural resources rents (% of GDP) which is a proxy for natural resource endowment, and  $\varepsilon_t$  is the error term that is assumed to be white noise.

### 2.2. The Econometric Approach

#### 2.2.1. The Empirical Model in ARDL Framework

In the literature, a number of co-integration approaches such as the Engle-Granger (1987), Johansen (1988), and Pesaran et al (2001) ARDL approach, among others, are used. This study employs ARDL bounds testing approach to co integration advanced by Pesaran et al. (2001). The Pesaran et al (2001) ARDL approach has a number of advantages over other traditional co integration approaches (Yimer, 2017). Specially, it is comparatively more robust and efficient in small and finite samples consisting of 30 to 80 observations (Pesaran *et al.*, 2001). The above advantages of the ARDL technique over other standard co-integration techniques justify the application of ARDL approach in the present study. The methodological procedure in the ARDL framework involves first, it requires the checking of none of the variables have an integration order of 2 or higher. In order to do that, the augmented Dickey–Fuller (ADF) test for checking the order of integration among the series is used. At the second step, the ARDL bounds testing approach to co integration developed by Pesaran et al. (2001) is applied. In order to do the bound test, the ARDL model used in this study is specified as

$$\Delta y_t = \alpha_0 + \beta_1 y_{t-1} + \beta_2 PGR_{t-1} + \beta_3 I_{t-1} + \beta_4 HCI_{t-1} + \beta_5 OP_{t-1} + \beta_6 DSR_{t-1} + \beta_7 TNRR_{t-1} + \sum_{i=1}^p \delta_1 \Delta y_{t-i} + \sum_{i=1}^p \delta_2 \Delta PGR_{t-i} + \sum_{i=1}^p \delta_3 \Delta I_{t-i} + \sum_{i=1}^p \delta_4 \Delta HCI_{t-i} + \sum_{i=1}^p \delta_5 \Delta OP_{t-i} + \sum_{i=1}^p \delta_6 \Delta DSR_{t-i} + \sum_{i=1}^p \delta_7 \Delta TNRR_{t-i} + \varepsilon_t \dots (2)$$

Where,  $y_t$  represents adjusted net national income which is a measure of sustainable development,  $PGR$  is population growth rate,  $I$  is investment,  $HCI$  is human capital index,  $OP$  is trade liberalization,  $DSR$  is debt servicing ratio,  $TNRR$  is total natural resource rent,  $\alpha_0$  is the deterministic drift parameter and  $\Delta$  denotes the first difference of the respective variables.  $\varepsilon_t$  is the white noise error term.  $p$  is the maximum lag length which is determined by the user.

In order to test co-integration among the variables, Pesaran *et al.* (2001) suggests the F-test for joint significance of the coefficients of the lagged level of variables in Eq (2). The F-statistics for testing the joint null hypotheses ( $H_0$ ) has to be compared with the critical values as tabulated by Pesaran et al. (2001). The  $H_0$  to be tested on equation (2) is

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = \beta_{13} = 0 \dots (3)$$

The alternative hypothesis against the null is given as

$$H_1: \beta_i \neq 0 \quad (4)$$

If  $H_0$  hypothesis can be rejected then co-integration can be confirmed. Pesaran et al. (2001) provided two sets of critical values - lower and upper bound critical - for a given level of significance. Therefore, decision was made based on those values. If the null hypothesis of no co integration is rejected, following the procedure in Pesaran et al. (2001), the error-correction model (ECM) will be estimated in the second step. The ECM is specified as follows:

$$\Delta y_t = \alpha_0 + \theta ec_{t-1} + \sum_{i=1}^p \delta_1 \Delta y_{t-i} + \sum_{i=1}^p \delta_2 \Delta PGR_{t-i} + \sum_{i=1}^p \delta_3 \Delta I_{t-1,t-i} + \sum_{i=1}^p \delta_4 \Delta HCI_{t-i} + \sum_{i=1}^p \delta_5 \Delta OP_{t-i} + \sum_{i=1}^p \delta_6 \Delta DSR_{t-i} + \sum_{i=1}^p \delta_7 \Delta TNRR_{t-i} + v_t \dots (5)$$

Where,  $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6, \delta_7$  are the short-run dynamic coefficients of the model's convergence to equilibrium,  $\theta$  is the speed of adjustment from the short-run to the long-run equilibrium among the variables, and  $ec_{t-1}$  is the error-correction term.

## 2.3. Description of Variables and Source of Data

### 2.3.1. Dependant Variable

Sustainable development: According to Hanley et al. (2007) the best measure of sustainable economic development is green net national product or adjusted net national income which takes in to account consumption of fixed capital and natural resources depletion. In this study the proxy of sustainable development is adjusted net national income measured by GNI minus consumption of fixed capital and natural resources depletion. This data is extracted from world bank data base.

### 2.3.2. Explanatory Variables

Table 1: Summery of explanatory variables included in the study

Variables	Measurement	Expected sign	Source of data
<b>Total Natural Resource Rents % of GDP (TNRR)</b>	Sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents	?	World Bank
<b>Population Growth Rate (PGR)</b>	Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage	Negative	World Bank
<b>Investment (I)</b>	Total investment measured in millions of birr represents gross capital formation	Positive	National Bank of Ethiopia
<b>Human Capital Index (HCI)</b>	Based on years of schooling and returns to education	Positive	Penn world table/pwt9
<b>Trade Openness (OP)</b>	Ratio of the sum of exports and imports to GDP ratio.	Negative	United Nations Conference on Trade and Development
<b>Total debt service (% of exports of goods, services and primary income) (DSR)</b>	Sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments (repurchases and charges) to the IMF.	Negative	World Bank

Note: Explanatory variables are selected based on theory and empirical studies

### 3. RESULTS AND DISCUSSION

#### 3.1. Introduction

In this chapter, the study analyzed the collected data using STATA 14 software and present the result and discussions accordingly. All the data series that are obtained are transformed into logarithms to tackle possible heteroscedasticity and autocorrelation problems.

#### 3.2. Pre-estimation tests

##### 3.2.1. Test for Unit Root

Even though, the bounds test approach to co-integration does not need pre-testing for stationary of the variables included in the model, but still it is important to carry out stationary tests on all the series. This is because the ARDL bounds test to co-integration is not applicable if the order of integration is above I(1). It was therefore, necessary to test for stationary of the variables before regression analysis was done. It is notable that stationary properties of time series are investigated by testing for unit roots and there are several methods for testing for stationary. Thus, this study used the commonly used Augmented Dickey Fuller (ADF) (1981) unit root tests. The unit root tests results are presented in Table below.

*Table 2: Augmented Dickey-Fuller test statistic (ADF Test)*

Variables	At level		At first differences		Critical Values			Remark
	with trend	Without trend	With trend	Without trend	1%	5%	10%	
LANNI			-4.054***	-3.740***	-3.689	-2.975	-2.619	I(1)
LTNRR			-6.879***	-6.969***	-3.689	-2.975	-2.619	I(1)
LPGR			-5.515***	-6.703***	-3.689	-2.975	-2.619	I(1)
LHC			-3.575 **	-3.006**	-3.689	-2.975	-2.619	I(1)
LDTSR			-6.335***	-6.421***	-3.689	-2.975	-2.619	I(1)
LIT			-5.465***	-5.555***	-3.689	-2.975	-2.619	I(1)
LOP			-6.199***	-6.280***	-3.689	-2.975	-2.619	I(1)

*Note: \*\*\*, \*\* denotes stationarity at 1 percent and 5 percent level of significance respectively.*

The above table shows unit root results of the series at level and first differences. The results ADF test suggest that all variables considered in the study are integrated of order one, I(1).

#### 3.3. Co-integrating Results

In order to evaluate the ARDL bounds it is necessary to test for the existence of long-run relationship among the variables. The model was estimated by ARDL and the optimal lag was selected by Akaike Information criterion (AIC). After estimation we conducted an F-test on joint significance of the variables using ADRL bound Test the F-stat indicate there is a long run relationship at 1 percent, 2.5 percent, 5 percent and 10 percent between variables included in the model of sustainable development.

*Table following on the next page*

Table 3: ARDL Bounds test

ARDL Bounds Test		
Sample (adjusted): 1983 2016		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	5.0497	6
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10 percent	2.03	3.13
5 percent	2.32	3.5
2.5 percent	2.6	3.84
1 percent	2.96	4.26

Note: The F-statistic tests the null hypothesis of no co integration.

### 3.4. The Long Run and Short Run Model

ARDL co integration technique proposed by (Pesaran, 2001) is the most appropriate method for estimation or to check the long run relationship among the variables.

Table 4: Estimated Results of Sustainable Development in ARDL Model

ARDL Co integrating And Long Run Form			
Dependent Variable: $\Delta(\log$ of Adjusted Net National Income)			
Selected Model: ARDL(1, 2, 2 1, 1, 2, 0)			
Sample (adjusted) : 1983 to 2016			
Short Run Coefficients			
Variable	Coefficient	t-Statistic	Prob.
$\Delta(\log$ of Total Natural Resource Rent)	-0.430***	-3.89	0.001
$\Delta(\log$ of Population Growth Rate)	-4.185**	-2.36	0.030
$\Delta(\log$ of Debt Servicing Ratio)	-0.075	-1.38	0.184
$\Delta(\log$ of Investment)	0.077	1.89	0.074
$\Delta(\log$ of Openness)	-1.242***	-4.77	0.000
Error-correction Term	-0.423***	-4.664	0.000
Long Run Coefficients			
Variable	Coefficient	t-Statistic	Prob.
log of Total Natural Resource Rent	-0.277	-1.19	0.250
log of Population Growth Rate	-5.016***	-3.04	0.007
log of Debt Servicing Ratio	-0.245**	-2.37	0.029
log of Investment	0.304**	2.75	0.013
log of Openness	-3.179***	-4.61	0.000
log of Human Capital	6.419***	3.19	0.005
Constant	-10.070***	-2.76	0.013

Note: \*\*\*, \*\* and \* indicates 1 percent, 5 percent and 10 percent level of significance respectively

Almost all variables included in the model has the expected sign in line with theory. The empirical ARDL model in our study shows that natural resource endowment measured by total natural resource rent as percentage of GDP has a negative impact on sustainable development of Ethiopia in the short run supporting the hypothesis in the resource curse literature, holding other things constant increase in total natural resource rent by 1 percent decreases adjusted net national income by 0.430 percent in the short run and highly statically significant at 1 percent

level of significance. Our findings are consistent with previous empirical works (Philip, 2007; Hussain et al., 2009; Jalloh, 2013; Godfrey et al., 2016 ) among others that justifies the cause of resource curse are inefficient control of the government on the economy and mismanagement of natural resource rents through rent seeking, high rate of corruption in the public sector and frequent civil conflicts. However, in the long run a negative but statistically insignificant relationship observed, this may be due to the possibility to rule out the impact of natural resource dependence on sustainable development in the long run. Among other explanatory variables included in the model of sustainable development, holding other things constant increase in 1 percent of investment measured as gross capital formation increases adjusted net national income by 0.304 percent in the long run and 0.077 in the short run and statistically significant at 5 percent and 10 percent respectively. This indicates a positive short run and long run relationship between investment (gross capital formation) and sustainable development in Ethiopia. More importantly, an increase in human capital by 1 percent increases adjusted net national income by 6.419 percent in the long run and highly statistically significant at 1 percent level of significance. Therefore, improvement in human capital has a positive and significant impact on sustainable development of Ethiopia in the long run. This may be due to the fact that human capital enables further innovation in all sectors of the economy and leads to increasing returns. An increase in population growth rate by 1 percent decreases adjusted net national income by 5.016 percent in the long run and 4.185 percent in the short run and statistically significant at 1 percent and 5 percent respectively. Population growth rate adversely affects sustainable development of Ethiopia both in the long run and short run and the negative impact is highly significant in the long run. An increase in debt servicing ratio by 1 percent decreases adjusted net national income by 0.245 percent in the long run and statistically significant at 5 percent level of significance but not significant in the short run. This indicates a negative relationship between debt servicing ratio and sustainable development in Ethiopia in the long run. An increase in trade openness by 1 percent decreases adjusted net national income by 3.179 percent in the long run and 1.242 percent in the short run and highly statistically significant at 1 percent level of significance both in the short run and long run. Trade openness negatively affects sustainable development in Ethiopia both in the short run and long run. This may be due to the fact that the gains from trade for natural resource exporting countries is insignificant due to deterioration of their terms of trade. The ECT is statistically significant at 1 percent and negative (-0.423) as expected showing that the deviation of adjusted net national income from equilibrium values is corrected by 42.3 percent in the following year.

### 3.5. Diagnostic and Model Stability Tests

The estimated model has a good fit as can be seen from R-squared and adjusted R-squared. R-squared is the square of the correlation coefficient between the values of the dependent variable and the corresponding fitted values from the model.

*Table following on the next page*

Table 5: Model Diagnostic Tests

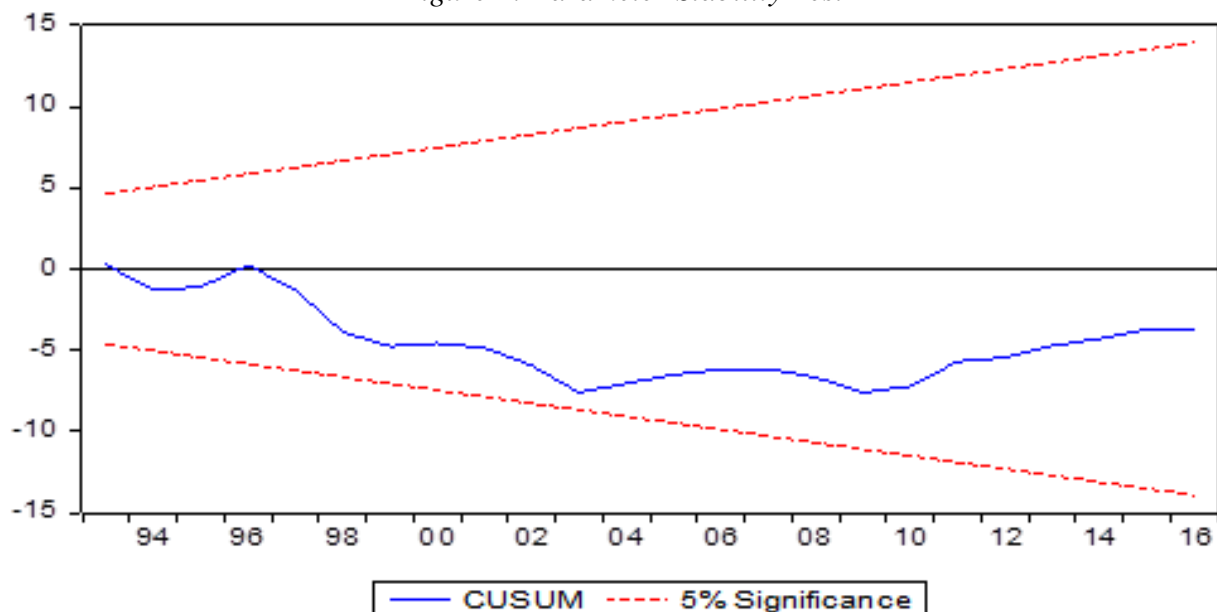
Problems	Applicable Tests	Probabilities
<b>Goodness of fit</b>	R-squared	0.853
	Adjusted R-squared	0.733
<b>Serial correlation</b>	Breusch-Godfrey Serial Correlation LM Test	0.260
<b>Functional form</b>	Ramsey RESET Test	0.180
<b>Normality</b>	Skewness and Kurtosis of residuals	0.162
<b>Heteroscedasticity</b>	White's test	0.258

*Note: The null hypothesis for Skewness and Kurtosis test is that errors are multivariate normal. The null hypothesis for Breusch-Godfrey Serial Correlation LM test is that there is no problem of serial correlation. The null hypothesis for White's heteroscedasticity test is that there is no problem of heteroscedasticity. The null hypothesis for Ramsey RESET test is that the model is correctly specified. Thus such tests indicate the acceptance of the null as their respective value is greater than 10 percent level of significance. Thus there is no problem of non-normality, autocorrelation, and heteroscedasticity in the errors. In addition, the model is correctly specified.*

### 3.5.1. Test of Model Stability

The stability of long run estimates has been tested by applying the cumulative sum of recursive residuals (CUSUM) such tests are recommended by Pesaran (2001). CUSUM test indicate the model is significant at 5 percent critical value.

Figure 1: Parameter Stability Test



## 4. CONCLUSION AND POLICY RECOMMENDATION

### 4.1. Conclusion

This paper investigates the empirical relationship between natural resource endowment and sustainable development in Ethiopia during the period 1981–2016 by examining the long-run and short-run relationship between natural resource endowment and sustainable development in Ethiopia. The study used the Autoregressive distributed lag (ARDL) bounds testing procedure to examine the presence of long-run and short-run relationship among the variables and to investigate the association between natural resource endowment and sustainable development.



The relationship between natural resources and economic growth can be expected to be complicated and controversial. Our results are not different from previous work done by different authors on this subject. The results of the study show that there is a significant negative short-run relationship between natural resource endowment and sustainable development in Ethiopia during the sample period which supports the hypothesis in the resource curse literature, however, there is no significant relationship in the long run. Moreover, previous empirical findings also support our results that the countries that are relatively abundant in natural resources unsuccessfully performed to sustain their development paths. Robustness of estimates has been checked for reliability of results. Among the other variables included in the model of sustainable development, investment (gross capital formation) and human capital are found to have a significant positive effect while debt servicing is found to affect sustainable development in Ethiopia negatively in the long run. On the other hand, population growth and trade openness are found to have a statistically significant negative effect on sustainable development in Ethiopia both in the long run and short run.

#### 4.2. Policy Recommendations

The findings of this study are hopefully important to design effective and critical policies in the resource sector. Based on the empirical analysis it is observed that in the short run natural resource endowment has a negative link with sustainable development implying the existence of resource curse in Ethiopia. Based on this finding we recommend that:-

- Policies towards increasing the human capital stock in the country is the best policy options that the government could work on so as to tackle the possible problems of natural resource curse and achieve sustainable development goals in the country.
- There is a need to establish an independent institutions in the natural recourse sector that are free from government authorities influence so as to improve the management of natural resources.
- The government better improve the way and method of collecting natural resource rents and rents from natural resources should be directed in to more productive investments to achieve sustainable development goals but rather than concentrating on the natural resource rents it is better to diversify the economy by improving other sectors.
- Strengthening of the gross capital formation (investment) process is highly vital to achieve long run sustainable development goals of Ethiopia.
- The study finally calls for interested researches on the resource curse to further strength or disprove the case in Ethiopia. Since we have used total natural resources rents (% of GDP) as a proxy for resource endowment, it would be possible for other researchers to employ other proxies such as agricultural commodity export as a percentage of GDP.

#### LITERATURE:

1. Akanni, O. P. (2007). Oil Wealth and Economic Growth in Oil Exporting African Countries, A, September. Nairobi: AERC Research Paper .
2. Alpha, B. B., & Ding, Y. (2016). Impact of Natural Resources Endowment on Economic Growth: Empirical Evidence from Mali. *Journal of Economics and Development Studies*, IV(4), 81-103.
3. Altman, M. (2003, November). Staple Theory And Export-Led Growth: Constructing Differential Growth. *Australian Economic History Review*, ISSN 0004-8992(3).
4. Bagheri, N. N. (2014, August). The Effect of Natural Resource Abundance on Economic Growth: A Case Study of Iran and Natural Resource Curse . University of Ottawa, Department of Economics.

5. Bah, C. M. (2016, May). Economic Growth, Institutions, and the Natural Resource Curse in Sierra Leone: an Empirical Investigation. *International Journal of Business and Social Science*, VII(3).
6. Barbier, E. B. (2007). *The role of natural resources in economic development*. WY 82071-3985, USA: University of Wyoming, .
7. Brundtland, G. (1987 ). Our Common Future: The World Commission on Environment and Development. . Oxford: Oxford University Press.
8. Chambers, E.J. and D.F. Gordon. 1966. Primary Products and Economic Growth: An Empirical Measurement. *Journal of Political Economy* 74(4): 315-332.
9. Chigeto, A. D. (2017). External Debt-Economic Growth Nexus in Developing Countries: Evidence from Ethiopia. *International Journal of African and Asian Studies*, XXXX. Retrieved from [www.iiste.org](http://www.iiste.org)
10. David, P. A., & Wright, G. (1997). Increasing Returns and the Genesis of American Resource Abundance. *Industrial and Corporate Change*(6), 203–45.
11. Demissie, M. Z. (2014). The Natural Resource Curse in Sub-Saharan Africa: Transparency and International Initiatives. Dissertations. Paper 6.
12. Di Tella, G. 1982. The Economics of the Frontier. In C.P. Kindleberger and G. di Tella, eds. *Economics in the Long View*. Macmillan, London, pp. 210-227.
13. Ding, N., & Field, B. C. (2004). *Natural Resource Abundance and Economic Growth*. Working Paper No., University of Massachusetts , Department of Resource Economics, Amherst.
14. Engle, R., & Granger, W. (1987). Co-integration and Error Correction: Representation, Estimation and testing. *Econometrica*(55), 251-276.
15. Findlay, R. 1995. Factor Proportions, Trade, and Growth. MIT Press, Cambridge, Mass.
16. Gelb, A.H. (1988). Growth and Efficiency: Policy Planning and Research. *Working Paper, No. 202, World Bank, Washington DC- USA*.
17. Gylfason, T. (2010). Natural Resource Endowment: A Mixed Blessing?, , 3,. *Macroeconomic Dynamics*(3), 204–25.
18. Gylfason, T., & Zoega, G. (2002). Inequality and Economic Growth: Do Natural Resources Matter?
19. Hackett, S. C. (2009). *Environmental and Natural Resources Economics*. Armonk, New York: Theory Policy, and the Sustainable Society Business Park Drive.
20. Humphreys, M. (2005). Natural Resources, Conflict, and Conflict Resolution: Uncovering the Mechanisms. *Journal of Conflict Resolution*, Vol. 49, No.2 pp.508-537.
21. Hanley, N., Shogren, F.J., & White, B. (2007). *Environmental Economics in Theory and Practice*. Macmillan Ltd.
22. Hansen, B. 1979. Colonial Economic Development with Unlimited Supply of Land: A Ricardian Case. *Economic Development and Cultural Change* 27:611-627.
23. Hussain, S., Chaudhry, I. S., & Malik, S. (2009). Natural Resource Abundance and Economic Growth in Pakistan. *European Journal of Economics, Finance and Administrative Sciences*(15).
24. Jalloh, M. (2013). Natural resources endowment and economic growth: The West African Experience. *Journal of Natural Resources and Developmen*, III, 66-84.
25. Johansen, S. (1988). Statistical analysis of Co integration Vectors. . *Journal of Economic Dynamics and Control*(12), 231–254.
26. Johansen, S. (1995). *Likelihood-based Inference in Cointegrated Vector Autoregressive models*. Oxford: Oxford University Press.
27. Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and inference on Cointegration with applications to the Demand for money. *Oxford Bulletin of Economics and Statistics*(52), 169–210.

28. Kassu, T., Mishra, D., & Asfaw, M. (2014). Public External Debt, Capital formation and Economic growth in Ethiopia. *Journal of Economics and Sustainable Development*, V(15). Retrieved from [www.iiste.org](http://www.iiste.org).
29. Khan. (1995 ). Sustainable development\_ The key concepts, issues and implications. *Keynote paper given at the international sustainable development research conference*. Manchester.
30. Malefane, M. R., & Odhiambo, N. M. (2018). *Impact Of Trade Openness On Economic Growth: Empirical Evidence From South Africa*. Working Paper, UNISA Economic Research Working Paper Series.
31. Moshiri, S., & Hayati, S. (2017). Natural Resources, Institutions Quality, and Economic Growth; A Cross-Country Analysis, Iran. *Economic Review*, XXI(3), 661-693.
32. Myint, H. 1958. The Classical Theory of International Trade and the Underdeveloped Countries. *Economic Journal* 68:315-337.
33. Njimanted, Forgha, G., Wujung, V. A., & Aquilas, N. A. (2014, November). Natural Resources Abundance and Economic Growth: The Cameroon Experience. Retrieved from <https://www.researchgate.net/publication/305394943>
34. Oyinlola, M. A., Adeniyi, O. A., & Ibrahim D. Raheem. (2015). Natural resource abundance, institutions and economic growth in Africa. *African Journal of Economic and Sustainable Development*, IV(1).
35. Oyinlola, M., Adeniyi, O., & Raheem, I. (2015). Natural resource abundance, institutions and economic growth in Africa'. *African Journal of Economic and Sustainable Development*, IV(I), 34–48.
36. Pesaran, M. H., & Shin., Y. (1999). An Autoregressive Distributed-lag Modeling Approach to Co-integration Analysis. *Econometric Society Monographs*(31), 371–13.
37. Pesaran, M., Shin, Y., & Smith., R. J. (2001). 'Bounds Testing Approaches to The Analysis of Level Relationship. *Journal of Applied Econometrics*(16), 289–326.
38. Robinson, J. A., Ragnar T and Verdier T (2006), Political Foundations of the Resource Curse, *Journal of Development Economics Vol.79, No.3, pp. 447-468*.
39. Rohner, D. (2006), Beach Holiday in Bali or East Timor? Why Conflict Can Lead to Under- and Overexploitation of Natural Resources. *Economics Letters* 92: pp.113-17.
40. Ross, M. L. (1999). 'The Political Economy of the Resource Curse'. *World Politics*, 297–322.
41. Sachs, J. D., & Warner, A. M. (1997). *Natural resource abundance and economic growth*. Harvard University Cambridge MA: Center for International Development and Harvard Institute for International Development .
42. Sachs, J., & Warner, A. (1995). *Natural Resource Abundance and Economic Growth*. NBER Working Paper No. 5398.
43. Singh, Y. K. (2006). *Environmental Science*. New Age International (P) Ltd.
44. Smith, S. 1976. An Extension of the Vent-for-Surplus Model in Relation to Long-Run Structural Change in Nigeria. *Oxford Economic Papers* 28(3):426-446.
45. Southey, C. 1978. The Staples Thesis, Common Property and Homesteading. *Canadian Journal of Economics* 11(3):547-559.
46. Watkins, M.H. 1963. A Staple Theory of Economic Growth. *The Canadian Journal of Economics and Political Science*. 29(2):141-158.
47. Willebald, H., Badia-Miró, M., & Pinilla, V. (2015). *Natural Resources and Economic Development. Some Lessons From History*. Working Paper. Retrieved from <https://www.researchgate.net/publication/273382704>
48. Wright, G. (2001). Resource-Based Growth Then and Now: Patterns of Integration in the Global Economy. Stanford University.

49. Wright, G., & Jesse Czelusta. (2003). *Mineral Resources and Economic Development, Sector Reform in Latin America* . Stanford : Center for International Development.
50. Yimer, A. (2017). Macroeconomic, Political and Institutional Determinants of FDI inflows to Ethiopia: an ARDL approach' in A. Heshmati (ed.), Studies on Economic Development and Growth in Selected African Countries. *Springer*, 123-151.
51. Zagozina, M. (2014). The Resource Curse Paradox: natural resources and economic development in the former Soviet countries. University of Helsinki , Department of Forest Sciences.

## FORMATION OF ENTREPRENEURIAL UNIVERSITIES IN RUSSIA: FOCUS ON INTELLECTUAL CAPITAL

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### **ABSTRACT**

*The article discusses key approaches to development of entrepreneurial thinking and modelling entrepreneurial type of universities in Russia. The authors outline classifications and features of Russian universities and consider competitiveness factors of entrepreneurial universities. The article highlights the importance of intellectual capital in the process of university development and identifies core directions of its assessment. The authors analyze both existing tools for university performance evaluation and alternative tools that focus on evaluation of intellectual capital value of entrepreneurial universities. The new approach is based on the concept of value management and aims to justify the possibility of forming entrepreneurial universities that are able to maximize the value of its intellectual capital.*

**Keywords:** *competitiveness of the university, entrepreneurial thinking, entrepreneurial university, intellectual capital, value appraisal*

### **1. INTRODUCTION**

As elsewhere in the world, the education system in Russia is changing dynamically. On the one hand, these changes are connected with formal division of the subjects of the higher education market into certain types: national research universities, federal universities, so-called “flagship” universities, and others. On the other hand, universities that have not received a “special” status, attempt to determine their own status based on understanding of their place and role in the country as a whole and in some particular region. National higher education systems are currently undergoing reforms in many countries of the world. The main reasons for the changes include:

- The competitiveness of economy is increasingly determined by the quality of human capital. More and more companies perceive new knowledge, technologies, and innovations as the basis for increased efficiency. As a result, innovative companies supersede traditional ones from the list of the greatest companies in the world;
- The need for continuous learning is becoming widespread due to both rapid obsolescence of knowledge and increased life expectancy with a longer active working phase;
- The labor market is changing rapidly and significantly, new professions and types of employment appear while old ones disappear, which results in increased uncertainty in the market;
- The technological breakthrough leads to globalization of education and, as a consequence, to increased competition between countries, territories and individual market actors;
- New forms and methods of generating, accumulating, transmitting and applying knowledge are emerging.

Obviously, in these conditions, both national governments and academic environment are in constant search for systems, tools, and technologies that meet the challenges of the time. Thus, new models and classifications of universities, which are a key element in the higher education

system, are being developed. In addition to the traditional division of universities into classical and applied ones, the following models or types of universities are distinguished according to:

- status in the hierarchy of universities (in Russia these are the mentioned above national research universities, federal universities, “flagship” universities, and others);
- professional orientation (universal, technical, social and humanitarian, medical, pedagogical, agricultural, transport, etc.)
- coverage (international, national, regional);
- forms and models of training (full-time, blended, distant);
- types of activity (research, regional socially-oriented, online universities, centers of professional communities, corporate universities) [1];
- expansion of goals and functions within the existing structure (University 1.0, 2.0, 3.0, 4.0 ...) [2];
- peculiarities of formation and performance of the university (innovative universities, scientific and educational complexes, entrepreneurial universities, etc.) [3].

The described differences in the classification of universities demonstrate the necessity to identify basic characteristics that could be used to distinguish universities from one another, and to determine the development strategy for both individual universities and programs for their cooperation. One of the dominants of such strategies and programs is the change in the paradigm of education – the transition from the need to teach specific knowledge and skills to the development of students’ “soft skills” that meet the challenges of the new time. Most of these skills are correlated with the concept of entrepreneurial thinking.

## **2. APPROACHES TO DEVELOPMENT OF ENTREPRENEURIAL THINKING**

Today, the issues related to development of entrepreneurial thinking are particularly acute in Russia. Famous Russian economist Vladimir Mau notes that “... children from rich and wealthy families aspire to work in state corporations, children from poor families aspire to work in security forces, and no one aims at private business” [4]. Throughout the years of market economy authorities have been declaring that effective development of the country is impossible without the development of small and medium-size business, as well as support for private initiatives. Numerous studies and examples show that in the context of global competition (even in the light of the current wave of protectionism), the key to long-term competitiveness is economy built on a more flexible and responsive private sector. An important element of the entrepreneurship development system in Russia is entrepreneurial education. The need for educational, informational and consulting support for business entities is emphasized in many program documents both at federal and regional levels. For instance, among the expected results of the state program “Economic development and innovation economics”, adopted in Russia in 2014, is “availability of young people under the age of 30 who have been trained in educational programs aimed at acquiring business skills and creating small and medium-size enterprises”. By the end of 2020, the number of such people should be more than 182 000. Though the market of educational products for entrepreneurs presented by various trainings, master classes, online courses, MBA programs, etc. can be considered relatively developed, there is still no systematic idea of how to develop entrepreneurial skills within the framework of secondary or higher education. Moreover, there is still no common opinion whether it is necessary to offer entrepreneurial courses to people who are not completely “ripe” for such an activity. The past few years have been marked by various corresponding initiatives from Russian government. Thus, in 2016 Prime Minister of Russia Dmitry Medvedev, speaking at a youth forum, said he found it viable to introduce optional courses on entrepreneurship in schools. And a year before this, there had been issued a series of publications that informed that the Russian Federation Ministry of Education and Science

was already developing three specialized educational programs for schoolchildren: “Foundations of Economic Culture”, “Economics and Business” and “Foundations of Entrepreneurship”. As for universities, one can observe a number of local initiatives both from entrepreneurial communities and development institutions (for example, the development of certain entrepreneurship courses by Russian Venture Company or the Internet Initiatives Development Fund), and from some universities. Still, there is also no common vision or approach in this respect. This is happening due to a number of reasons, one of which is existing stereotypes about entrepreneurship. A common misconception lies in identification of entrepreneurship with business. As a result, everything related to entrepreneurial education is considered to be the remit of universities that offer degree programs in Entrepreneurship, Economics and Management. Attempts to emphasize the need for comprehensive development of entrepreneurial skills among students of technical universities, for example, are perceived as something alien, conflicting with “classical” engineering education. In order to partially overcome the stereotype in relation to technical universities and engineering school classes in Russia, the concept of “technoentrepreneurship” has been widely introduced. The development of entrepreneurial skills among students must be viewed primarily through the paradigm of the development of entrepreneurial way of thinking. The phenomenon of entrepreneurship is quite broad and multidimensional. One of the most popular definitions of entrepreneurship, given by Harvard Business School professor Howard Stevenson, states that “Entrepreneurship is the pursuit of opportunity beyond the resources you currently control” [5]. Such understanding implicates that entrepreneurial skills are necessary not only for entrepreneurs, but also for employees and officials as they can be effectively applied when solving non-work related issues – even in personal life. It seems to us that inevitable introduction of new higher education reforms in the coming years will again provoke discussions around the so-called “entrepreneurial universities” and “universities 3.0” as universities of a special type that, on the one hand, are in line with global trends and, on the other hand, meet the demand of Russian economy and society. Today, it can be stated that “entrepreneurial” ideology is reflected in attempts of Russian universities to follow several development directions. The first is to design the model of the “entrepreneurial university”. According to the conceptual model, described by Burton Clark and other foreign and Russian authors, the main criteria of an entrepreneurial university are “lack of fear to commercialize generation and dissemination of knowledge”, “focus on new sources of financing”, “initiation of new activities”, “establishment of new business organizations”, “demonstration of entrepreneurial behavior” [6]. Classic examples of “entrepreneurial universities” globally are Massachusetts Institute of Technology and Stanford University. These are the universities where entrepreneurship is perceived as a value and part of corporate culture. The second direction is to stimulate innovative activities at universities. Since innovation is understood as knowledge turned into something useful that is introduced into practice as novelty, and since such innovation can be valued and commercialized, many researchers and university leaders have begun to identify “innovative” and “entrepreneurial” activities of universities. It is believed that if a university has so-called “innovation infrastructure” (a business incubator, a technology transfer center, a core facility center, etc.) and receives grants or enters into research and development agreements, it demonstrates “entrepreneurial activity”. But a serious problem of such universities is that innovative activities, as a rule, stand separately from the basic activity of any Russian university – educational. Business incubation, commercialization of knowledge is considered as an option for the narrow group of people, and not as a structural element of educational programs. The idea to declare innovations at universities to be the driver of territorial development is the basis of the national priority project “Universities as centers for innovative activities”. In accordance with the project, a number of flagship universities were created in Russia, some of which claim to have “entrepreneurial” status.

The third direction is to develop and implement “entrepreneurial” educational programs. This may be realized through, firstly, degree programs in Management that, according to the federal standard, involve the “entrepreneurial” type of professional activities, secondly, particular disciplines and specialized courses in various degree programs (“Foundations of Entrepreneurship”, “Technological Entrepreneurship”, “Internet Entrepreneurship”, etc.), and thirdly, additional education programs “for entrepreneurs”. At a more comprehensive level, this direction has been implemented over the past few years under the supervision of the Russian National Consortium for Entrepreneurship Education. The consortium is currently developing the professional standard for entrepreneurship, the key idea of which is to treat entrepreneurship as a profession – just like a doctor, a teacher or an engineer. The professional standard of an entrepreneur involves learning how to manage different types of business (from individual businesses to large corporations) at different stages of its life cycle – from “entry” (establishment or takeover) to possible “exits” (including sale or bankruptcy). Moreover, the “exit” from the business is viewed as something natural, which, in fact, means that training in accordance with such an approach will lead to “serial entrepreneurs”. In case of approval and adoption of this standard, some universities will be able to train “professional” entrepreneurs. As one can see, “entrepreneurship” in relation to higher education takes various forms and, with a certain desire, any university can be called “entrepreneurial” to one degree or another. At the same time, there is the fourth direction, which considers such questions as what kind of personnel is needed for the economy of the future or what skills will be in demand in the labor market in the future. Such approach is currently being implemented at Novosibirsk State University of Economics and Management (NSUEM). The change in educational systems around the world is dictated in many respects by global trends, associated primarily with the technological revolution and corresponding structural changes in the labor market. Many professions and industries will disappear, while new ones will appear, putting a qualitatively different type of labor in demand. Professionals describe the coming decades using the abbreviation VUCA (volatility, uncertainty, complexity and ambiguity). In the VUCA world, specific knowledge will rapidly become obsolete and relevant, so the average employee should be ready to study lifelong and to change scope of activities and professions throughout his life. In the situation of growing uncertainty, increased volume of information, rapid change of technology, emergence of new forms and areas of activities, the role of universities as translators of specific knowledge is sharply reduced. There is often lack of this knowledge. A survey, conducted two years ago by representatives of the blockchain industry, showed that more than 70% of respondents did not find necessary knowledge in the existing education system and were self-taught. Understanding of systemic lack of knowledge brings universities back to the well-known formula “teach to study”. But if thirty years ago it was the destiny of a de facto small segment of students, in the future it will become one of basic competencies. In addition to study skills, the most popular “future skills”, stated at Davos forum in 2016, include complex problem solving, critical thinking, creativity, teamwork and communication skills [7]. Being in conditions of uncertainty, a person should demonstrate skills of identifying problems, making decisions, setting goals, and be result-oriented. Today, the presence of these skills is a rare talent, since process-oriented thinking prevails in hierarchical structures, where task completion is valued higher than its qualitative and meaningful formulation. If we consider the type of personality that possesses or should possess a complex of these skills, we will first draw the image of an entrepreneur – the owner or the head of an organization, who in fact, is responsible not only for himself but also for the employees, and who is constantly in the process of searching and making independent decisions. It is this skill that in case of negative scenarios in the labor market makes a person not a budget recipient, but a person who keeps searching for new opportunities. Thus, the fourth direction of “entrepreneurial activities” is associated with the idea of developing the entrepreneurial way of thinking and entrepreneurial skills



among students of various degree programs through the formulation of appropriate “supraprofessional” (in the language of educational standards – “general cultural” and “general professional”) competencies. Such competencies can be formed through such disciplines as Project management, Decision-making principles, Critical thinking, Leadership and Team building, etc. These disciplines that fill a significant gap in the knowledge and skills of many current university graduates of any degree program are being implemented at NSUEM since 2019 for the first- and second-year students. Implementation of entrepreneurial competencies into educational and professional standards will not only increase long-term competitiveness of university graduates, but also more efficiently integrate the existing innovative infrastructure into higher education programs, as well as promote any activities of universities in relation to knowledge commercialization.

### **3. COMPETITIVENESS FACTORS OF ENTREPRENEURIAL UNIVERSITIES**

President of Harvard University Drew Faust said in one of his speeches that “Harvard is great not because it produces people like Bill Gates, but because it is the guardian of culture and the producer of the meaning of life” [8]. Guided by this statement, we can say that an entrepreneurial university is primarily the one that shares and disseminates the values of entrepreneurship in a broad sense, as entrepreneurship and entrepreneurial approach can be observed not only in business. In this understanding, the most suitable definition of entrepreneurship is “activities aimed at finding opportunities beyond the limits of available resources”. Thus, the entrepreneurial university can be considered as the “guardian of culture and the producer of the meaning of life” that reflects relevant values, develops entrepreneurial thinking and skills, creates the ecosystem of entrepreneurship in and around the university, and also provides a link between entrepreneurship, education and science (thus, supporting innovative type of business).

Competitiveness of such an entrepreneurial university is determined by the following factors:

- quality of education in accordance with the goals of the university (educational activity);
- applied scientific achievements that are in demand by both the university itself and the external environment (scientific activity);
- value orientation on the entrepreneurial way of thinking and performance (instructional activity);
- ability to generate and maintain innovative processes (innovative activity);
- opportunities for commercialization of various types of activities (entrepreneurial activities);
- interaction with external environment – positive impact on society in the broad sense (socially-oriented activity).

The resulting indicator, which acts as both the reason and the consequence of high competitiveness of the university, is head-hunting for talents among academic staff members and students. Since these are people who represent the capital stock of the university, it is necessary to identify approaches that would introduce the development of human, and more broadly, intellectual capital as paramount in the process of implementing the development strategy of the university to increase its competitiveness. A peculiarity of entrepreneurial universities in this context is the ability of intellectual capital to generate additional income for the university from various activities: additional practice-oriented education, consulting, commercialization of R&D projects, participation in grants, establishment of subsidiary innovative companies, creation of endowments, interaction with sponsors, etc. Thus, it can be concluded that to assess competitiveness of entrepreneurial universities, traditional tools, such as ratings or expert surveys, are not enough, that is why the question of developing new

methodologies for evaluation of universities' ability to generate additional cash flows is becoming relevant.

#### **4. NEW APPROACHES TO EVALUATION OF UNIVERSITY PERFORMANCE BASED ON THE VALUE OF INTELLECTUAL CAPITAL**

Modern theory and practice of university performance evaluation develops in two ways: through refinement of traditional approaches and development of fundamentally new ones. Examples of traditional approaches refinement include the project of the European Commission "U-Multirank" [9] and the project "Three University Missions" [10], developed by Moscow State University. The first project rejects to compare universities by a set of indicators (as in ratings) and is aimed only at identification and comparison of specific indicators of similar universities. The second project masters rating methodology, taking into account such an important function of the university as interaction with society. One of fundamentally new approaches lies in evaluation of university performance based on value appraisal of its intellectual capital. In general, intellectual capital is intangible resources (knowledge, skills, experience, processes, databases, intellectual property, strong ties with stakeholders, etc.) that contribute to increase of competitiveness. There are a large number of approaches to the definition of the concept and structure of intellectual capital [11]. An example of the structure is the allocation of human, organizational, and client (relational) capital. The new approach to university performance analysis based on valuation of intellectual capital of universities follows the following basic principles:

- Intellectual capital is the main capital of the university;
- Appraisal of intellectual capital and its dynamics is an integral indicator of university performance;
- Methods used for assessment (direct intellectual capital (DIC) methods, market capitalization methods (MCM), return on assets (ROA) methods) should be adapted with respect to peculiarities of the university as an object of evaluation;
- When forming intellectual capital of the university, it is necessary to take into account costs and evaluate the effectiveness of financial decision-making;
- Appraisal of intellectual capital is made across the board and by elements based on identification and analysis of cost factors (drivers).

Among most essential disadvantages of applying value approach to estimation of intellectual capital of the university are: non-commercial (socially-oriented) nature of university performance, a large number of indirect and elusive effects from university performance and their non-financial nature, insufficient methodological set of assessment tools.

#### **5. STRATEGY OF ENTREPRENEURIAL UNIVERSITIES IN THE FRAMEWORK OF VALUE-BASED MANAGEMENT CONCEPT**

If dynamics of intellectual capital value is viewed as the criterion of competitiveness of the university, university management has to determine the strategy of university development and factors of influence in order to maximize the value of intellectual capital. In this case it is recommended to implement the "entrepreneurial university" model due to the fact that transition to the entrepreneurial university model leads to a sharp increase of the components of intellectual capital:

- human capital (transformation of the potential into the result, specifically from the commercialization perspective). For instance, not only the number of academic staff with PhD degree is essential, but also whether they bring additional income;
- organizational capital (improvement of educational programs, introduction of new projects, efficiency improvement of business processes by means of income rise and cost reduction);

- relational capital (expansion of relations with authorities, business, employers, graduates, and sponsors).

In our opinion, in order to implement the model of the entrepreneurial university, it is important to take a number of steps, some of which are characteristic of the best corporate management practices:

- to develop and adopt the strategy and the KPI system of the university based on indicators of income and value;
- to take into account the need for the development of entrepreneurial thinking in the course of educational programs, the introduction of “cross-cutting” disciplines in entrepreneurship, even for non-economic degree programs;
- to introduce new educational formats and methods aimed at the formation of “soft skills” typical of the entrepreneurial way of thinking;
- to integrate business incubators and other elements of innovation infrastructure into the educational process;
- to reshape business processes at university, to increase their efficiency in terms of resource intensity and speed of decision making;
- to introduce management practices based on the project approach;
- to create an integrated expert center combining the functions of additional education, consulting, research and development, technology transfer and commercialization;
- to strengthen work with graduates, sponsors, business representatives to attract additional income to the university;
- to use the concept of value-based management (VBM) when making decisions;
- to pursue organizational and personnel policy, external positioning of the university based on the entrepreneurial approach.

The mentioned above steps will allow a university to strengthen its position in external environment and develop the university management system based on best corporate practices [12].

## LITERATURE:

1. *Differentsiatsiya vuzov usilitsya, onlayn-obrazovaniye zakhvatit mir: materialy Gaydarovskogo foruma – 2017.* [The differentiation of universities will increase, online education will take over the world: materials of the Gaidar Forum – 2017] (2017). Retrieved 10.09.2019 from <https://www.hse.ru/news/expertise/200279822.html>
2. Vissema Y. (2016) *Universitet tret'yego pokoleniya: Upravleniye universitetom v perekhodnyy period.* [Third Generation University: University Management in Transition Period]. Moscow: Olimp-Biznes.
3. Novikov A. (2012) Vyssheye obrazovaniye v Rossii: analiz situatsii i trendy obnovleniya. [Higher education in Russia: analysis of the situation and trends of updating]. In *Sibirskaya finansovaya shkola* [Siberian Financial School]. No. 6. P. 29-35.
4. Mau V. (2017) Uroki stabilizatsii i perspektivy rosta: ekonomicheskaya politika Rossii v 2016 godu. [Lessons from stabilization and growth prospects: Russia's economic policy in 2016]. In *Voprosy ekonomiki*. [Issues in Economics]. No. 2. P. 16.
5. Stevenson, H.H., and J.C. Jarillo-Mossi (1990), “A Paradigm of Entrepreneurship: Entrepreneurial Management.” *Strategic Management Journal*, 11, Summer 1990, pp. 17-27.
6. Clark B. (1998) *Creating Entrepreneurial Universities. Organizational Pathways of Transformation*, Pergamon Press, New York, pp. 127-148.

7. Gray A. (2016). The 10 skills you need to thrive in the Fourth Industrial Revolution. Retrieved 10.09.2019 from <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution>
8. *Kakim dolzhen byt' universitet budushchego? Materialy Gaydarovskogo foruma – 2017.* [What should the university of the future be? Materials of the Gaidar Forum – 2017] (2017). Retrieved 10.09.2019 from <https://indicator.livejournal.com/24905.html>
9. Novgorodov P. (2017) Analiz deyatel'nosti vuzov na osnove otsenki stoimosti intellektual'nogo kapitala. [Analysis of university performance on the basis of intellectual capital valuation]. In *Prirodnyye i intellektual'nyye resursy Sibiri* [Natural and intellectual resources of Siberia (Sibresurs-23-2017). Conference proceedings]. Tomsk: TUSUR Publishing House. P. 64-68.
10. *Multidimensional rating of U-Multirank*: Website of the National University Ranking (2019). Retrieved 10.09.2019 from <http://univer-rating.ru/txt.asp?rbr=0&txt=Rbr0Text8344&lng=0>
11. *Tri missii reytinga: zachem sozdan Moskovskiy mezhdunarodnyy reyting universitetov.* [Three rating missions: why was Moscow international university rating created] (2016). Retrieved 10.10.2017 from <https://indicator.ru/article/2016/11/02/tri-missii-rejtinga/>
12. Novgorodov P. (2017) Intellektual'nyy kapital: ponyatiye, sushchnost', struktura. [Intellectual capital: concept, essence, structure]. In *Vestnik Udmurtskogo universiteta. Seriya Ekonomika i parvo* [Bulletin of the Udmurt University. Series Economics and Law]. Vol. 27. No. 2.
13. Novikov A., Novgorodov P. (2017) Strategiya razvitiya ekonomicheskogo vuza kak osnova otsenki yego intellektual'nogo kapitala. [The development strategy of an economic university as a basis for its intellectual capital assessment]. In *Vestnik NGUEU* [Bulletin of NSUEM]. No. 3. P. 10-24.

## CONGRESS TOURISM AS AN INDICATOR OF THE DEVELOPMENT OF THE GLOBAL AND NATIONAL MICE INDUSTRY

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### **ABSTRACT**

*Modern business environment has long gone beyond the borders of one country and a close communication between the business communities of different countries on a global scale is an integral part of it. Despite the availability of modern information and communication technologies, traditional face-to-face meetings for making deals, concluding and renewal of contracts cannot be replaced by any existing technology. Even the most remote regions of our planet participate in business communication, and great geographical distances between countries predetermine the need to travel for business purposes, very often, over long distances between cities of one country, between countries, continents. During their business trips participants of major congresses, forums, seminars, trainings, conferences and other events have specific needs determined by the purpose of the business visit, which must be satisfied within the framework of the tourism industry. The very specificity of such needs allowed us to identify within the framework of the business tourism a type of tourism called congress tourism, implementing priority tasks of socio-economic and political orientation. Congress tourism plays a significant role in the formation of the national revenue of a country or region and provides a greater economic effect compared to other types of business trips. This type of tourism is a sensitive indicator of the development of the entire MICE industry, it forms certain trends, innovative solutions in the digitalization of tourism, informatization of business interaction, while simultaneously develops relations between countries, and determines the trends in the development of the world intellectual market. In this regard, strategically planned development of the congress industry and identification of the potential prospects for congress tourism in the medium and long term are of great importance for the revitalization of the domestic economy and many industrial complexes of the country. It will allow to obtain and strengthen the above socio-economic positive effects.*

**Keywords:** *business trips, congress tourism, development prospects, tourism industry, MICE*

### **1. INTRODUCTION**

Congress industry is a current trend in the global and Russian business tourism markets. The industry is a relatively young high-yield sphere of economy, implementing important economic and political tasks, and acting as a specific indicator of its development. Congress tourism, along with contributing to budget revenues of a particular country, region, city, creates certain

trends, innovative solutions in the digitalization of the tourism, information business cooperation, while simultaneously developing inter-state relations, and identifies trends in the global smart market [4]. Over the past decades, it is congress tourism that acts as a separate driver of economic growth in a number of countries due to the accumulation of economic, political and scientific principles into a single system. For this reason, in the United States, France, Switzerland, the United Kingdom and several other countries business tourism plays a key role in government programmes aimed to support and develop the territory's tourism [17]. Congress tourism is a special part of the global MICE industry, covering travelling for the purpose of organizing and participating in congresses, forums, conferences, symposia, seminars, round tables, and other similar events [5]. Congress tourism is usually defined in foreign studies on tourism as a 'meetings market', due to the fact that it implies not just large congresses, conventions and forums, but also meetings less significant in scale, such as seminars, intensives, conferences and other events [7]. Congress events solve the major task of creating a communication environment, enabling its participants to freely exchange information about the most advanced technological innovations in production, services and developments in the scientific and practical sphere, to share their own experience and specific knowledge in a particular area, as well as to discuss the achievements and development pathways in all sectors [1].

## 2. MAIN PART

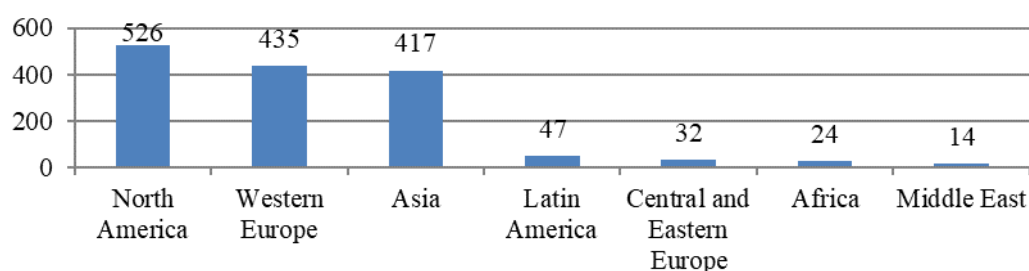
In the Russian Federation, the Congress Activity GOST R 53524-2009 is a fundamental legal basis, stipulating the basic terms and definitions in the field of congress activities. Theoretically, the distinction between exhibitions and congresses is blurred: conferences, seminars, etc., are held within the framework of almost all large exhibitions, being an integral part of them; large congresses are often accompanied by expositions. Therefore, in general, today we should talk about the congress-and-exhibition events. There are 3 types of such events: large specialized exhibitions (more than 500 exhibitors) with the programme of congress events; exhibitions accompanying large thematic congresses, with or without the exposition part; congresses with a minimum exposition component. In this regard, one of the directions of further development of exhibition and congress projects today is the convergence, merger and inter-penetration of their exhibition and congress parts [9]. In developed countries, congress activity is a consistently highly profitable sector of the economy. It is characterized by a multiplicative effect, suggesting the development of related economy sectors and increasing the investment attractiveness of the territory [12]. Congress tourism has a significant influence on the hospitality industry in terms of close collaboration with the hotel industry, creating business centres, convention halls, exhibition halls, etc. in major locations. Thus, globally about 60% of the occupancy rate in hotels is provided by travellers for business purposes. It should be noted that congress activities have a stimulating effect on such important sectors of the country economy as transport, communications, consumer goods and agriculture [18]. In 2017, the leading positions in the number of international congress events were held by the USA, Germany, and Spain [8]. In 2018, the US stayed firmly in first place, which it had been occupying for the past two decades. Germany ranked second, the UK fell to fifth place, ahead of Spain, which rose up to third place. After dropping out of top 5 last year, in 2018 France re-entered it in fourth place. Italy replaced France in the sixth place, while Japan and China ranked seventh and eighth for one more calendar year. In their turn, the Netherlands and Canada swapped places, ranking ninth and tenth, respectively. Portugal ranked eleventh while the Republic of Korea gained one position, rising to twelfth place. Brazil and Poland dropped one place down to seventeenth and nineteenth placed respectively, with Switzerland dropped to twentieth place, Australia and Sweden rising to thirteenth and fourteenth positions. Austria remained in the top 20 but fell four places down to sixteenth.

Newcomer Argentina was regaining its position in the top 20 after falling down to twenty first place in 2017, contributing to Denmark's decline from twentieth down to twenty second place (table 1).

*Table 1: Top 20 city ranking by number of meetings organised in 2018*

Rank	Country	Number of congress events held
1	United States of America	+947
2	Germany	642
3	Spain	595
4	France	579
5	UK	574
6	Italy	522
7	Japan	492
8	China	449
9	the Netherlands	355
10	Canada	315
11	Portugal	306
12	the Republic of Korea	273
13	Australia	265
14	Sweden	257
15	Belgium	252
16	Austria	240
17	Brazil	233
18	Argentina	232
19	Poland	211
20	Switzerland	208

In top 10 city ranking by number of meetings organised in 2018, Paris topped the list and remained the leader (212 events), Vienna holds the second place (172), Madrid comes third (165). Fourth place in the ranking is Barcelona (163), fifth is Berlin (162), sixth is Lisbon (152), seventh is London (150), eighth is Singapore (145), ninth is Prague (136) and tenth is Bangkok (135). According to the International Association of Congresses and Conventions report, business events generated \$621.4 billion (US) of direct GDP and contributed a total GDP impact (global gross domestic product) of \$1.5 trillion in 2018. This ranks the sector as the 14th largest in the world, ahead of GDP's of Australia, Spain, Mexico, Indonesia and Saudi Arabia [8]. Total GDP impacts of business events by region is presented in figure 1.



*Figure 1: The revenue from business events in the GDP structure by region in billions, US\$, 2017*

According to the International Association of Congresses and Conventions data, world congress tourism events generated more than 10.3 million jobs worldwide. At the end of 2018, global spending on business travel rose to \$1.07 trillion (US). The average spend per tourist was \$704 (US). Fifty countries accounted for 96 per cent of the overall revenue, with the United States leading with \$325 billion, and China, Germany, the United Kingdom, and Japan rounding out the top five.

Asia was the largest region in the number of business event participants constituting nearly one-third of 1.5 billion total worldwide. Western Europe ranked second, with almost thirty per cent of overall revenue followed by North America with just under twenty-two per cent of all attendees [8]. By 2025, the global business tourism market is estimated to reach \$1.67 trillion with an annual increase of 3.2%. The above provisions confirm the fact that for most foreign countries the congress industry is becoming a most important industry, not only ensuring the money inflow into the budget of the territory, but also stimulating the activities of related economy sectors and creating a positive investment climate. The Russian Federation has also been affected by the intensive process of business tourism and congress tourism development. At the same time, for quite objective reasons, the congress activity is currently positioned as an umbrella brand of Russia in the global MICE market [7]. In the last decade, the number of exhibitions and congress events in the country has increased, the Russian market is still very young, but its size and importance for the industry are growing rapidly. According to the GBTA outlook, in 2019, global tourism spending in Russia will grow by 13.6%, which is significantly higher than the average global potential growth of 8.6%. In its turn, according to the World Travel and Tourism Council and the International Congress and Convention Association data, the Russian business tourism market is estimated to reach \$18.4 billion by 2020. Originally started in western countries, the industry has gained popularity in Russia relatively recently, in the 90s, along with the advent of the country's first international companies and foreign companies' representative offices. Today, the market of business meetings in Russia demonstrates an average annual growth of 6%. According to the Moscow Committee on Tourism and Hotel Management data, in 2014, the Russian capital alone was visited by about 5.6 million tourists (which is 1.6% more than last year), with more than half of them travelled on business purposes. However, in recent years, the increase in demand has been accompanied by a slow pace of the global economy growth, thus significantly affecting the market of business travel, leading to cuts in the companies' expenses for business services. Under the conditions of tough competition and difficult economic situation, not only quality service, but also contractors' flexible pricing policy and diversification of services are becoming the decisive factor of prosperity of the industry companies [14]. The organization and provision of congress activities is an extremely important area for the Russian economy. Congresses and exhibitions are aimed at ensuring the modernization of industry, agriculture and the entire mechanism of the service sector organization [16]. The Russian Federation share of the international market of congress and exhibition activities is still small. More than 80% of the total market of business events falls on scientific events, with France leading in this area. In the year 2017 the total number of scientific meetings in the world was 12,500, 506 of them were organized by French companies. The international forums generated about \$1,032,000 000 (US) of revenue. The share of Russia in this number was 87 meetings with total revenue of \$86 million (US) [15]. Russia has not yet reached some areas of congress events, but it is successfully developing this sector. The establishment of the Russian Convention Bureau in 2017 was preconditioned by the current situation in the field of business tourism in RF. One of the Russian Convention Bureau's objectives is the effective development of the national event industry and integration into the world industry of meetings. The organization promotes the Russian regions event potential at the international level, attracting foreign events in order to create the image of Russia as a country with a favourable investment climate and business development. The Russian Convention Bureau represents the industry before the RF Executive authorities, promotes active interaction between market participants, and accumulates relevant information on the status of the Russian event industry. In addition, the Russian Convention Bureau is making the market more transparent for its participants, and is actively developing educational programmes for industry professionals [10]. The Russian Convention Bureau plans to participate in various specialized international events (for example, ICCA Congress, IBTM and IMEX exhibition,



etc.), organizing a united exhibition stand of Russia, presentation and promotion of various territories and existing infrastructure opportunities of Russian regions, building partnerships with the business events organizers, offering foreign participants familiarization tours to Russian regions. In addition, member companies of the Russian Convention Bureau will have the opportunity to be in the pool of the RCB reliable partners; information about their activities will be posted on the RCB website and in various printed materials distributed at international specialized exhibitions and events. Also, companies will have the opportunity to participate in major international specialized events on favourable terms, get access to applications, received by the RCB, for participation (RFP) and organization of various international congress and exhibition events, obtain relevant information on the event industry to expand their professional knowledge through the participation in various educational events [11]. To date, more than 160 Russian cities have facilities for hosting congress events. At the same time, Moscow and St. Petersburg account for 75-80% of the country's business tourism market. According to the R&C Exhibition research centre, in 2017 St. Petersburg - one of the major event centres in Russia - hold the leading position on the Russian market of congress tourism. Every year the city hosts major international business events. In 2018, St. Petersburg hosted the UFI (The Global Association of the Exhibition Industry) Global Congress. Yekaterinburg ranks second, in 2017 the city submitted its candidature to host World EXPO-2025. The Bid Committee experts estimated that, in case of victory, from May to November 2025 the global exhibition will be visited by about 14 million guests from different countries. In addition, the region pays close attention to the improvement of the dedicated infrastructure, required for the full development of event industry. Currently, the construction of a congress hall meeting international standards and designed for 4.5 thousand people has been started at the site of Ekaterinburg-EXPO Exhibition & Convention Centre. Third, fourth and fifth places, two years in a row, are hold by Sochi, Krasnodar and Kazan. In 2017, the Convention Bureau of the Republic of Tatarstan started its work in Kazan. Its objective is to promote the development of business tourism and attract investment to the region. Among the cities in the TOP 10, Ufa significantly strengthened its position, rising from 11th to 8th place. In 2017, the Convention Bureau of Bashkortostan actively promoted the event potential of the Republic, the result of which, in particular, was winning the bid to host the Apimondia Congress of Beekeeping Associations and the Apiexpo exhibition in 2021. Chelyabinsk closes the TOP 10. In the coming years it plans to hold major international sports and business events: the 2018 World Junior Ice Hockey Championship, BRICs and SCO summits in 2020 (table 2) [6].

*Table following on the next page*

*Table 2: Ranking of Russian regions event potential*

City	Ranking in 2016	Ranking in 2017	Trends
Saint-Petersburg	1	1	
Yekaterinburg	2	2	
Sochi	3	3	
Krasnodar	4	4	
Kazan	5	5	
Vladivostok	6	6	
Nizhniy Novgorod	8	7	+
Ufa	11	8	+
Yaroslavl	10	9	+
Chelyabinsk	12	10	+
Rostov-on-don	7	11	-
Murmansk	13	12	+
Voronezh	14	13	+
Novosibirsk	9	14	+
Irkutsk	17	15	+
Kaliningrad	20	16	+
Krasnoyarsk	15	17	-
Samara	18	18	
Perm	16	19	-
Sevastopol	19	20	-

In Russia, similar to foreign practice, hosting congresses acts as a powerful incentive to the development of all branches of the tourism industry – hospitality, transport, trade, communication business, leisure and entertainment. The analysis of the modern world practices of congress tourism organization and development allows to conclude that nowadays in Russia the system of the federal and regional economic and social forums acting as the basis the country congress activity is created. Table 3 presents the major annual Russian forums.

*Table 3: The largest annual forums held in the Russian Federation*

Forum	Brief description
St. Petersburg International Economic Forum (SPIEF)	It is the world's leading platform for communication between representatives of the business community and discussion of key economic issues Russia, emerging markets and the world as a whole are facing.
Eastern Economic Forum (EEF)	It is held in Vladivostok and serves as a platform for the discussion of key issues of the world economy, regional integration, development of new industries and technologies and global challenges Russia and other countries of the world are facing.
Krasnoyarsk Economic Forum (KEF)	It is a place to discuss all-Russian tactical minimum programs and strategic maximum programs, measured in years.
Russian Investment Forum (RIF)	It is a traditional platform for the presentation of the investment and economic potential of Russia. Held with the participation of Dmitry Medvedev, Russian Prime Minister Prime Minister.
Yalta International Economic Forum (YIEF)	Annual international business event in the economic sphere, held in the Crimea (Yalta).
"Russia calling!" Forum	It is a leading platform for attracting capital to the Russian economy, improving the investment climate and developing the country's foreign economic and business ties.
Sochi International Investment Forum	It serves as a place to discuss the issues of investment attractiveness and attraction of investments in the Russian Federation.

According to ICCA statistics for 2015, Russia ranked 42nd in the world ranking of the countries organizing congress events. During this period, 76 congress events were held in Russia. The main cities organizing the congress venues were Moscow and St. Petersburg [8].

Moscow is the country's leading city for holding congress events, the business centre of Russia, and is in the top 50 venues in Europe. About 80% of the congress business of the Russian Federation is concentrated in the city. There are about 400,000 m<sup>2</sup> of exhibition space available in Moscow, including 80 congress hotels, each hosting up to 600 congress-type events, and the city administration plans to increase this figure up to 1.1 million m<sup>2</sup> by 2025. VDNH, Manege Exhibition hall, Expocenter and Crocus Expo are among the largest exhibition centres in Moscow. In addition, there are hundreds of venues in Moscow with different capacities, open for events of all formats. These are congress hotels, large congress centres, as well as sites of completely new formats. For example, over the past few years, a network of technoparks and technopolises has grown in Moscow, which are actively used as centres for business events. In July 2020, Moscow will host the first conference of The International Planning History Society (IPHS). One of the most reputable business events in the field of urbanism is held in the Biennale format in different cities of the world [15]. Taking into account the planned budget of IPHS – 34 million roubles – the expected additional economic effect of the event in 2020 may amount to 129 million roubles, and the expected tax revenues is 19.6 million roubles [2]. In addition to financial benefits, it is worth noting that Russia is looking forward to the export and import of new knowledge, technologies and solutions in the field of urban planning, as well as in the social, cultural, tourist and sports spheres of people's lives. The annual turnover of the Russian event services market is 52 billion roubles, 31.8 billion roubles of which comes from the Moscow market of congress services, which is more than half of the total revenue. The above provisions indicate that congress market of Moscow occupies the leading position in the Russian market and is the most promising developing metropolis in this segment. Along with Moscow, St. Petersburg occupies the leading position in the Russian market of congress tourism. In accordance with the strategy of socio-economic development of the North-Western Federal region for the period up to 2020, St. Petersburg should join the list of the 20 leading congress cities of the world and 10 congress capitals of Europe. The implementation of this goal will significantly affect the city budget, as business events participants spend on average two to three times more than ordinary tourists. When considering St. Petersburg as a venue for congress and exhibition activities, the attractiveness of this city is obvious. The factors contributing to the development of such activities include:

- advantageous geopolitical position;
- developed infrastructure of external transport;
- rich cultural and historical heritage;
- the role of St. Petersburg in the world history;
- high level of tourist attraction;
- developed diversified economy;
- conditions for the development of a competitive congress tourism market;
- high innovative, scientific and educational potential;
- a sufficient number of companies providing services of congress and exhibition events organization and holding;
- experience in hosting major international events.

The main exhibition centres in St. Petersburg are Lenexpo Exhibition Complex, Jubileiny Sports Palace, Leningrad Youth Palace, Mikhailovsky Manege (former winter stadium), St. Petersburg Sports and Concert Complex, Information and Exhibition Centre of North-West Russia, Central Exhibition Hall Manege. The total area of the exhibition space of St. Petersburg (including the objects under construction) exceeds 150 thousand square meters, which, however, is 3 times less than in Moscow. As for the congress facilities, more than 40 hotels in St. Petersburg are ready to provide about 250 conference rooms, multifunctional auditoriums and halls with a total area of about 30 thousand square meters.

Currently, St. Petersburg occupies the 88th position in the world and the 45th position in the European ICCA rating in terms of the number of rotating events and is ahead of Moscow in terms of these indicators. Event industry experts note the attractiveness of the city not only for organizers, but also for business events participants. In 2017, St. Petersburg was recognized as the best business travel destination by the Buying Business Travel Awards Russia & CIS, established by Buying Business Travel Russia magazine. Matches of the World Cup were held in the city. The Northern capital of Russia will also host a significant event of the exhibition industry — the International Congress of the Global Association of the Exhibition Industry (UFI). In general, the Government of the Russian Federation, regions and cities of Russia pay close attention to the development of the congress industry and to the solution of related problems, which include the following:

- material and technical base (insufficient number of venues for large events for three thousand people and more, insufficient number of halls-transformers, insufficient use of existing congress facilities);
- imperfection of the legal framework;
- lack of a comprehensive approach to the development of congress infrastructure;
- lack of statistical data on the industry impact on the country's economy;
- lack of market players coordination: coincidence of events by dates, places and themes, the need for ranking the events.
- lack of professional congress associations;
- no concept of promoting the congress potential of regions and cities;
- imperfection of staffing, the need for professional education of specialists [3].

Today, Russian customers of business events are increasingly opting for domestic destinations, which can significantly minimize costs due to the fact that all logistics is carried out within one country, and pricing is in roubles. According to experts, three years ago, 50% of corporate events were held abroad, and now only 10% of the companies hold events outside Russia. This trend is due to the fact that it is more convenient for clients from government agencies and business to participate in business events in Russia. In addition, event budgets in our country can be at least 40% lower than in Europe, and companies choosing domestic destinations, significantly save on transfers and accommodation [11]. Attracting and holding international congress and exhibition events is important from the point of view of economic development of any country and provides a certain economic effect for all industry participants: event organisers, congress and exhibition venues, hotels, transport and service companies, as well as making a significant contribution to the economy (table 4).

*Table 4: Forecast indicators of congress activity development in Russia*

<b>Indicator</b>	<b>2017</b>	<b>2022</b>
Contribution of the event industry to Russia's GDP, billion rubles	42.9	58.4
Number of existing regional congress bureaus	8	30
Positions of Russia in the events industry international rankings (ICCA ranking)	41st position	38th position
Number of international enterprises engaged by the National Convention Bureau	–	11
Number of events per year (ICCA ranking)	87	117
Russia's share in the international event market	Less than 0,8 %	1,7 %

In 2017, scientific research centre R&C conducted a marketing study, which identified the following possible development paths of the congress market in Russia:

- the market will grow and develop (55% of respondents);

- the market will develop, but at a slow pace (33%);
- it is difficult to predict in the current conditions (6%);
- will fall and stagnate (6%).

Moreover, according to ICCA forecasts, it is potentially possible to organize and hold more than 8,000 congress events in the Russian Federation by 2020, only with the participation of international associations [8].

### 3. CONCLUSION

Thus, the factors of revitalization of congress tourism in Russia include the following:

- Construction and reconstruction of sites for large events with the number of three thousand people and above.
- Reorientation of the industry to domestic markets (Russian regions) for congress events.
- Consolidation of efforts of regional congress bureaus, simplification of visa regime, costs saving.
- Improvement of the legal and regulatory framework: adoption of laws, approval of the developed concepts.
- Assigning of statistical process to a certain body. Introduction of professional ratings.
- The development of the branch educational and research programs, carrying out educational conferences, congresses.
- Creation of a professional Convention Association (ICCA type).
- Consolidation of authorities, regions and cities, Chambers of Commerce and Industry, business circles to create conditions for the development of the congress industry.
- Professional education of industry specialists, development of educational standards for training programmes.

In addition, experts believe that one of the main trends in the near future is the expansion of the formats of congress events, organizing them at the junction of the business format and the event industry. Introduction of creative breaks, interactivity, involving the impact on the emotions of participants in various ways and their involvement can be one of the main trends. The use of mobile applications, online voting, various tools for networking and communication can enhance the effect of involvement of each participant in the substantive part of the event [13]. The obvious advantage of Russia in the world market of congress tourism is that the congress and exhibition activity has existed for a long time and is quite a mature industry. Today, thanks to the congress activity of Moscow, the work of the Russian Convention Bureau and a number of international events, for example, FIFA, EURO 2020, Russia has great opportunities not only to strengthen its position in the international market of congress events, but also to improve the image of the country.

### LITERATURE:

1. Ageev L.A. (2016). Vistavochno-yarmorochnaya i kongressnaya deyatel'nost' v formirovaniy investitsionno-privlekatelnogo imidzha regiona [Exhibition, fair and Congress activities in the formation of investment and attractive image of the region]. Saransk: Mordoviya-Expo, 2016. p. 118 (in Russian).
2. Anisimova T. I. Delovye sobytiya [Business events]. Razvitiye event-rinka i ego vliyaniye na gorod [Development of the event-market and its impact on the city.] // Vedomosti konferentsii [Statements of the conference.] 2016. No. 1. pp. 1-15 (in Russian).
3. Congress school. // CongressTime, 2015, no. 7. pp. 94-96 Available at: <https://congresstime.ru.gg> (accessed 23.07.2019).

4. Dorofeeva A. A. & Pereverzev M. V. Innovatsionnie aspekti razvitiya predpriyatii sferi gostepriimstva [Innovative aspects of development of hospitality enterprises] Finansovo-ekonomicheskoe i informatsionnoe obespechenie innovatsionnogo razvitiya regiona [Financial, economic and information support of innovative development of the region.] Proceedings of the II all-Russian scientific-practical conference, 2019. pp. 281-283 (in Russian).
5. Dwyer L., Forsyth P. Impacts and benefits of MICE tourism: A framework for analysis. Tourism Economics. 1997. 3 (1). pp. 21-38.
6. Exhibition research center R&C. Available at: <http://rnc-consult.ru> (accessed 20.07.2019).
7. Groshev I.V., Davidova Yu.A., Krasnoslobodtsev A.A. & Eriashvili N.D.[2018]. Osobennosti vliyaniya kongressnogo potentsiala Rossii na mirovoi rinok delovogo turisma [Influence of congress potential of Russia on world market of business tourism]. Mirovaya ekonomika: problemi bezopasnosti - World Economics: security issues, 2018, 2, pp. 14-35 (in Russian).
8. International Congress & Convention Association (ICCA). Available at: <http://www.iccaworld.com> (accessed 19.07.2019).
9. Isupova A. N. Obosnovanie effektivnosti formirovaniya innovatsionnogo vida predprinimatelstva v vistavochno-yarmarochnoi sfere [Rationale for efficiency of innovative type of business in the exhibition and fair sphere] Rossiiskoe predprinimatelstvo [Russian entrepreneurship], 2015, no. 2. pp. 52-56 (in Russian).
10. Kalachev S. G. Rol professionalnikh soobshchestv v razvitii industrii [The role of professional communities in the development of industry] // Open to the world, 2018, no. 1. pp. 12-33 (in Russian).
11. Kalachev A. Tsel postavlena: na mirovoy rinok [Goal has been set: to the world market] // Congress time, 2017, no. 5., pp. 51-52. Available at: <http://rnc-consult.ru> (accessed 19.07.2019).
12. Nyurenberger L.B., Klimova E.N. Paradigma ustoichivogo razvitiya turisma: suschunost, principii, criterii [Paradigm of sustainable tourism development: essence, principles, criteria] Aktualizatsiya intellektualnogo i resyrsnogo potentsiala regionov [Activation of intellectual and resource potential of regions]. Proceedings of the 4th all-Russian scientific-practical conference: in 2 parts. Under the science. ed. N. N. Danilenko, O. N. Baeva, 2018. pp. 515-520 (in Russian).
13. Nyurenberger L., Luchina N., Sewruikov I., Tikhomirova G." 2GO " format innovative technologies in tourism: augmented reality of travelling // 42nd International Scientific Conference on Economic and Social Development, London, 2019. pp. 318-326.
14. Rashbam E. Tendentsii razvitiya industrii vstrech [Trends in the development of the meetings industry in Russia.] CongressTime, 2015, no. 1, pp. 52-56 (in Russian).
15. Roscongress Fund. Available at: <https://roscongress.org> (accessed: 20.07.2019).
16. Sharkov F. I. Vistavochnii kommunikatsionnii menedzhement [Exhibition communication management]. Moscow: Alpha Press, 2016, pp. 256 (in Russian)
17. Swarbrooke J., Horner S., Business travel and Tourism, 2001. Butterworth-Heinemann. pp. 3-13.
18. Tinnish S. M., Mangal S.M. Sustainable Event Marketing in the MICE Industry: A Theoretical Framework. J. Conv. Event Tour. 2012, pp. 227-249.

## FINANCING OF PRE-UNIVERSITY PUBLIC EDUCATION IN ROMANIA

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### ABSTRACT

*The last 30 years meant for the Romanian education numerous beneficial or negative transformations, but their purpose was not in line with the needs of society. The major problem of the educational units and of the institutions through which the financing is made is the limited budgetary resources, the modalities of financing the pre-university education in Romania.*

**Keywords:** Education, education funding, income and expenditure budget, investment, public authorities

### 1. INTRODUCTION

According to the provisions of the Law no. 1/2011 - The Law of National Education "The pre-university education national system comprises the following levels:

- a) Early education (0-6 years), consisting of the pre-school level (0-3 years) and preschool education (3-6 years), comprising the small group, the middle group and the large group;
- b) Primary education, comprising the preparatory class and grades I-IV;
- c) Secondary education, which includes:
  1. secondary or lower secondary education, comprising grades V-VIII;
  2. upper secondary education which may be:
    - High schooling, comprising the high-school grades IX-XII / XIII, with the following theoretical, vocational and technological branches:
    - vocational education lasting at least 3 years;
- d) non-university tertiary education, which includes post-secondary education.

Secondary education is organized into two cycles: the lower grade of the high school, consisting of the 9th and the 10th grades, and the upper cycle of the high school, consisting of grades XI-XII XIII. Higher education, vocational and technological education, vocational education and post-secondary education shall be organized for specializations and qualifications established by the Ministry of National Education in accordance with the National Register of Qualifications". At the moment, the pre-university education units, including special education, are financed by public funds, from the state budget, the local budget, the county council budget. Educational establishments can make their own income by accessing grants through various education programs, from renting available spaces outside courses Ex.: halls and sports grounds, classrooms for organizing adult courses. Educational establishments do not have property, buildings and land are the property of the territorial administrative unit to which schools belong. These goods are given to the management of the educational unit by the decisions of the Local Council. Also, based on some decisions of the Local Council, the educational establishments may rent the spaces they administer provided if they comply with the Law 213/1998, on public property, which at art. 16 stipulate:

- "(1) The sums received from the rental or the concession of the public property shall be made, as the case may be, to the state budget or to the local budgets.
- (2) If the lease is concluded by the holder of the right of administration, he/she has the right to receive a rent of 20-50%, established, as the case may be, by a decision of the Government, the county council, the General Council of Bucharest or the local council approving the lease."

## 2. THE FINANANCING OF PRE-UNIVERSITY EDUCATION UNITS

The financing of pre-university education units can be represented graphically as follows:

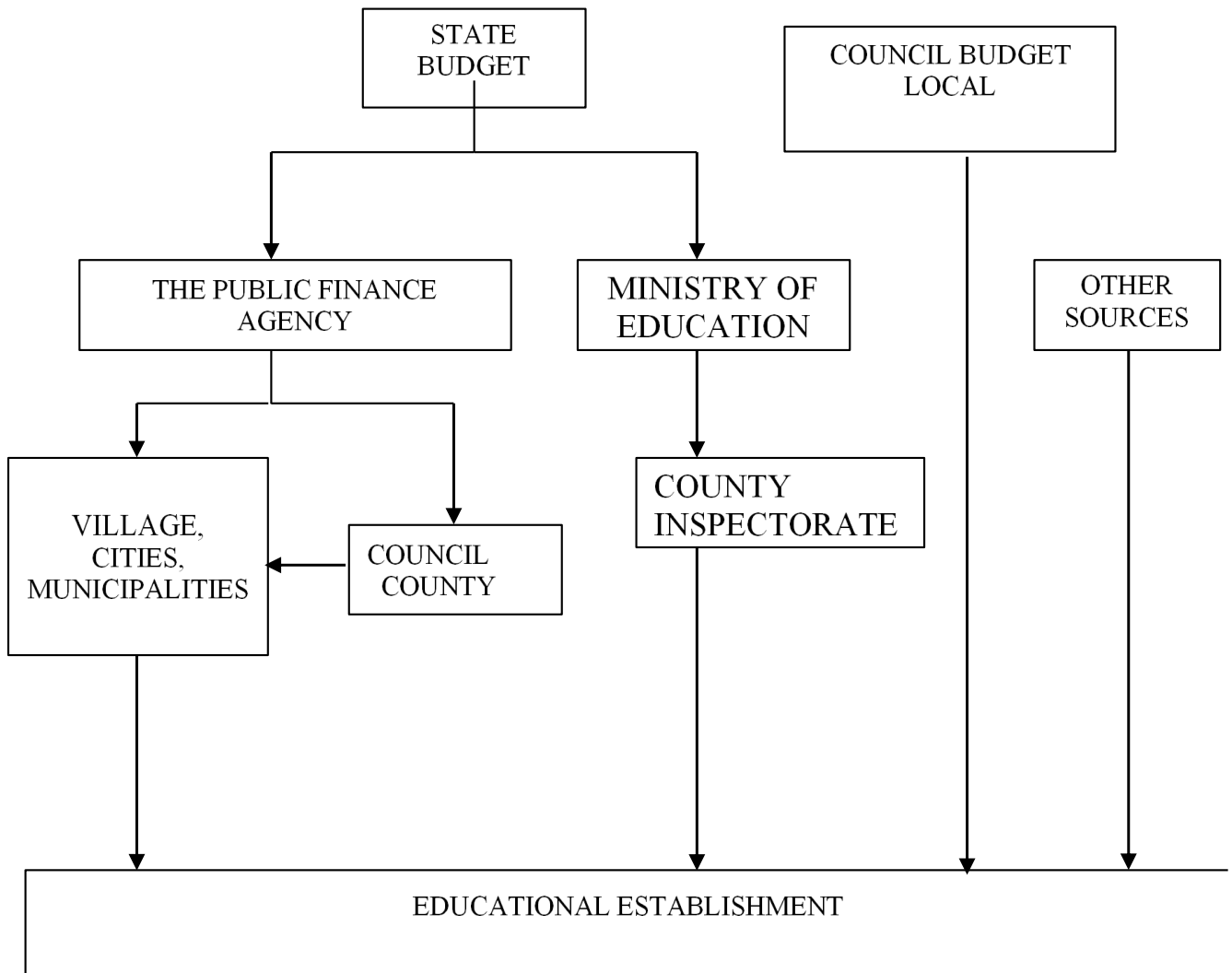


Figure 1: Financing of pre-university education units

According to the legal provisions in the education field, "the amount foreseen for education is at least 6% of GDP". Between 1990 and 2018 public expenditure on education is presented according to the data in the table below.

Table 1: Public spending on education in Romania (%GDP)

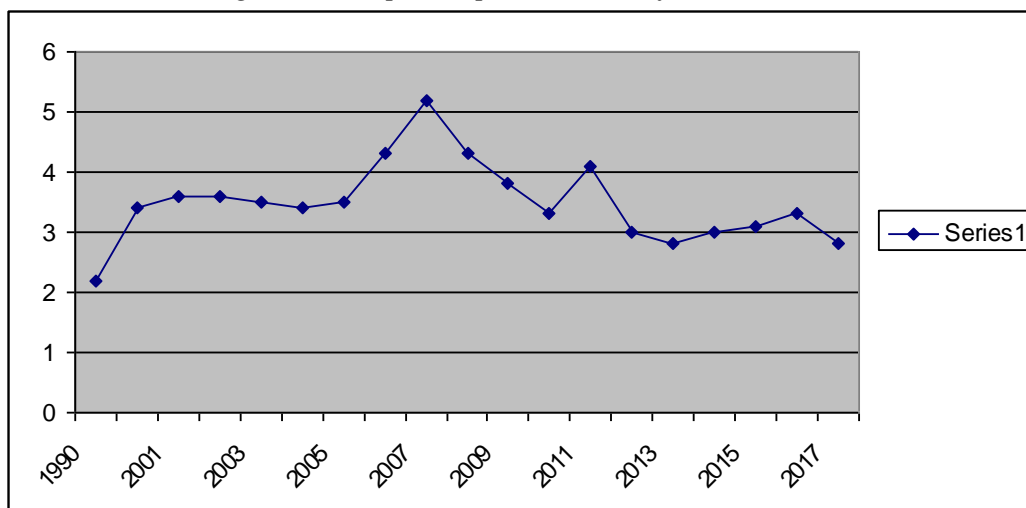
years	1990	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Specification																			
Public spending on education (% GDP)	2,2	3,4	3,6	3,6	3,5	3,4	3,5	4,3	5,2	4,3	3,8	3,3	4,1	3,0	2,8	3,0	3,1	3,3	2,8

Source: Ministry of National Education, National Prognosis Commission

Unfortunately, the educational system does not benefit from the sums allocated for endowment of the material base or the modernization of the buildings in which they perform their educational instructive act.



Figure 1: Graphic representation of table 1 data



Following the evolution of spending on education, we can conclude that one of the risk factors is due to the financial dependence of pre-university education on territorial administrative units. The financing of the pre-tertiary education institutions of state-owned public authority is conditioned by the development of the locality as well as by the collaboration of the management of the educational unit with the management of the locality to which it belongs. This results in major differences between educational establishments in terms of the conditions under which the educational process takes place. Despite the fact that the National Education Act provides us with free education, the above aspects confirm to us something else. Some of the education costs are taken over by the family (school supplies, often even school textbooks, transport and student accommodation, food, various funds (class, school, parents' associations, etc.), extracurricular activities). The higher the education level, the higher the education expenditures are strictly related to the payment of the salaries of the teaching staff and the auxiliary staff, the financing of the preparatory class costs (although the preparation of the appropriate space for these classes is the responsibility of the local administration), the co-financing of the costs of accommodation of students in boarding schools, the co-financing of transport costs. The rest of the expenditure is the responsibility of the local authorities. Rural schools face several problems: material doctrine is, in some cases, far below those in the urban environment, family involvement in school issues is much lower, income from rural communities is much lower, so involvement of local authorities is also much diminished.

Table 2: Performance of fourth-grade students according to the residence environment

Location	Reading	Math	Science
Village	350	402	388
Small town	356	371	375
Middle City	396	414	416
Big city	410	429	436
Very big city	426	442	440

Source: OECD International PISA Assessment Program 2006, National Center Report, CNCEIP, Bucharest, 2010

The above table shows the performance of fourth-grade students according to the residence environment. It can be noticed that urban students perform against rural students, so chances of access to secondary education are different. These differences can also be caused by staff fluctuations in rural areas.

### 3. CONCLUSION

An efficient funding system and learning units need to accomplish more many criteria:

- Transparency,
- Breakdown of cost bases
- Reduction of administrative costs
- Stability

The current system of financing pre-university state education in Romania is in place it is based on predictability and transparency. This aspect is due to the fact that the standards of cost are approved by Government Decision and published in Official Monitors. This one is the procedure sufficient for a conclusion because it can be financially transparent? Approval and advertising indicators in Official Monitors are eliminated discretionary, however, it follows that the school cancellation is the coefficient or the cancellation of the fiscal indicators are published in the middle of the year is school for the second part after a date. This aspect leads to a incorrect and inefficient cost planning. Consider that it is transparent and not sufficient in publishing indicators and costs standard but also the possibility to access a database for information care regarding information expenses are recorded for each learning unit separately. In the research I took care of I have faced such challenges. We cannot speak for our analysis expenditure without research cooperation, authorizing officer, School Inspectorate, Treasury and Statistical Institute.

### LITERATURE:

1. Eurostat <https://data.europa.eu/euodp/ro/data/publisher/estat>
2. GD 72/2012 on the methodology for determining the standard per pupils/preschooler cost and establishing the finance basis of the pre-university education institutions, which are insured from the state budget, from amounts deriving from the VAT through the local budgets, based on the standard per pupil/preschooler cost
3. [http://www.ier.ro/sites/default/files/documente/arhiva\\_evenimente\\_2010/Sumar\\_executiv\\_Studiu\\_ANBCC\\_-\\_Tinerii\\_si\\_incluziunea\\_sociala\\_pe\\_piata\\_muncii.pdf](http://www.ier.ro/sites/default/files/documente/arhiva_evenimente_2010/Sumar_executiv_Studiu_ANBCC_-_Tinerii_si_incluziunea_sociala_pe_piata_muncii.pdf)
4. National Institute of Statistics <http://www.insse.ro/cms/>
5. National Ministry of Education <https://www.edu.ro/>
6. O.M.P.F. 1792/2002 – Methodology regarding the commitment, management, liquidation and payment of public institutions expenses
7. Public Finance Ministry <http://www.mfinante.gov.ro/>
8. The law no. 1/2011 – The National Education Law
9. The law no. 215/2001 of the local public administration
10. The law no.273/2006 of the local public finances
11. Văcărel I., Anghelache Gabriela, Bistriceanu Gh.D., Moşteanu Tatiana, Bercea F.,Bodnar M., Georgescu F., Public finances, second edition, Didactic and Pedagogical Publishing House, RA, Bucureşti, 1999
12. World Bank <https://www.worldbank.org/ro/country/romania>

# PROS AND CONS OF SHADOW ECONOMY OR CASH WILL NEVER DIE

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## ABSTRACT

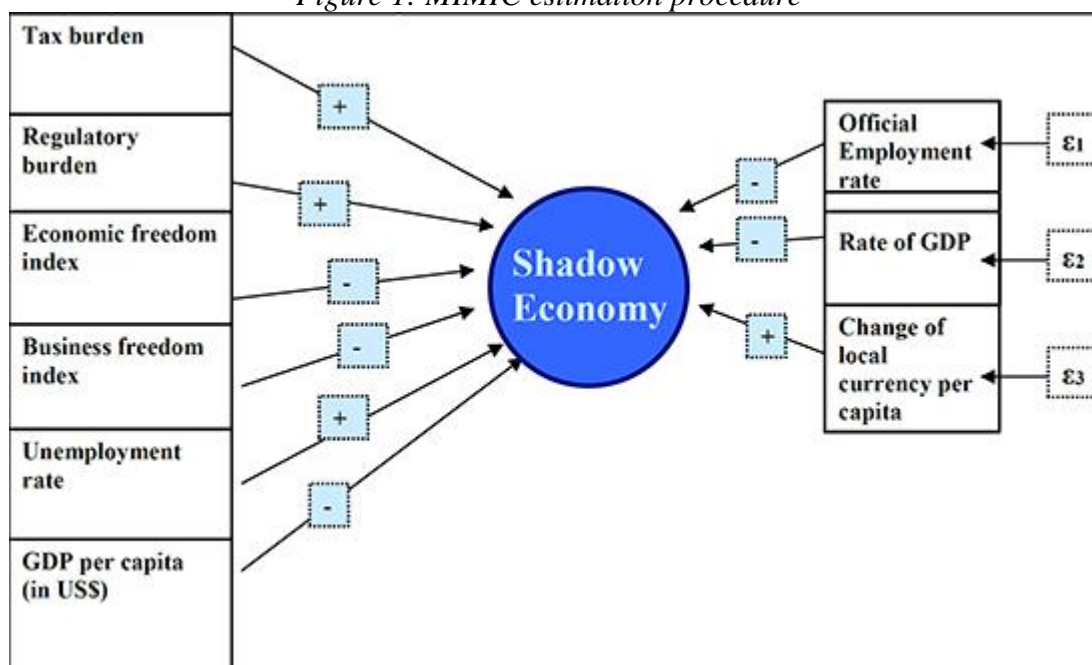
*Existence of shadow or grey economy counts for decades. Nobody argues its illegality though not any government can eradicate and bring it to the end. The discussion of this very actual matter will be focused on the insight whether how this parallel illegal economy helps the poor to survive and how the rich absolutely consciously contribute to its prosperity. The subsequent positive and negative issues related to this constant process will be clearly trackable through the discussion in the present topic.*

**Keywords:** *Shadow Economy, parallel economy, regulations, contemporary slavery, cash*

## 1. INTRODUCTION

What do we know about shadow economy? How do we measure it? Do we consider it positive or negative phenomena in the economy? There are so many questions related to this topic. Answers are relatively easy but not one-sided. Various methods are used to measure it such as the national accounts approach and new micro and macro methods, and the crucial evolution of the macro methodologies (Currency Demand Approach (CDA) or Multiple Indicators Multiple Causes (MIMIC)) which make its creation and vitality understandable. For instance here we have:

*Figure 1: MIMIC estimation procedure*



*Source: Schneider, Buehn and Montenegro (2010).*

If we read the definition by Medina and Schneider: “The shadow economy includes all economic activities, which are hidden from official authorities for monetary, regulatory and institutional reasons.

Monetary reasons include avoiding paying taxes and all social security contributions, regulatory reasons include avoiding governmental bureaucracy of the burden of regulatory framework while institutional reasons include corruption law, the quality of political institutions and weak rule of law.”

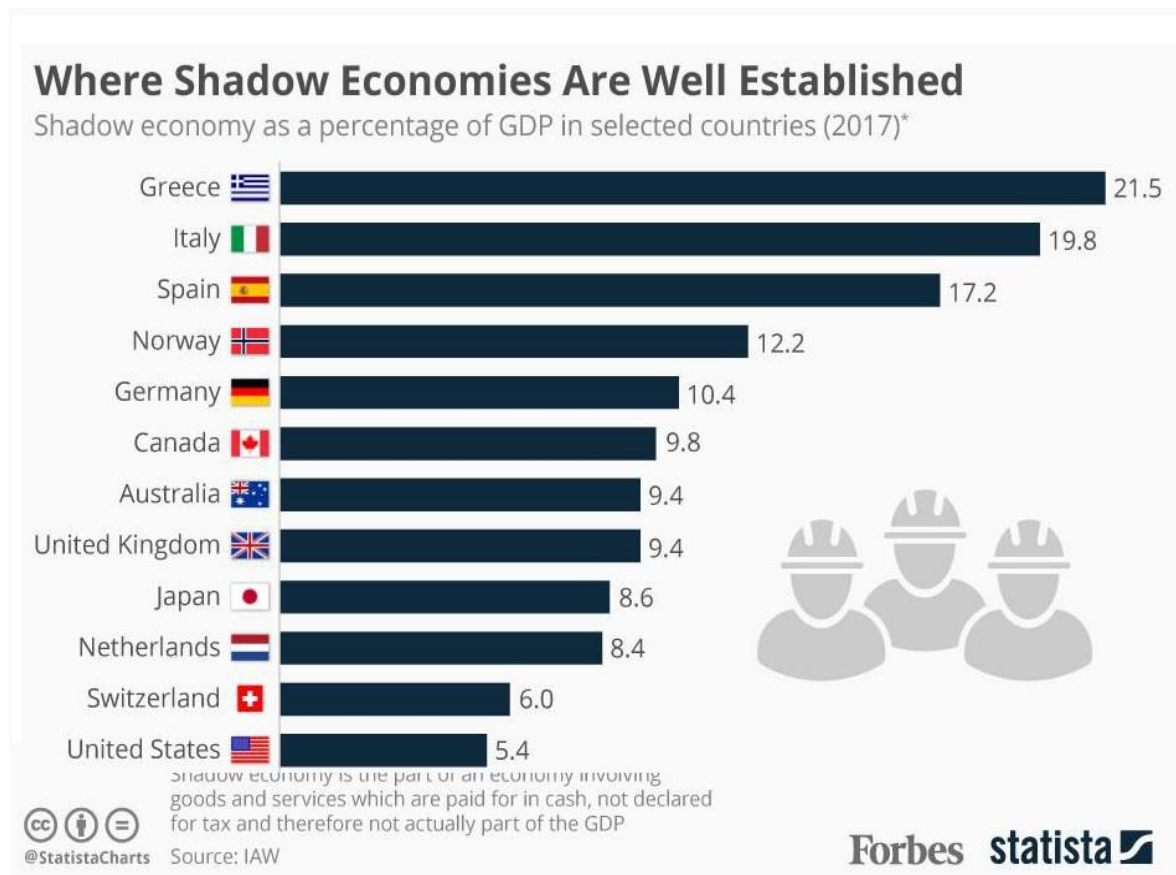
## 2. DISCUSSION

It's very difficult to provide exact rate of shadow economy. Although there are several methods but neither one can provide precise figures. What is the reason of shadow economy creation and development? Here is the data from Shneider and Buhn study: 1. Increase of the Tax and Social Security Contribution Burdens a) 35-38% b) 45-52%; 2. Quality of State Institutions a) 10-12% b) 12-17%; 3. Transfers a) 5-7%; b) 7-9%; 4. Specific Labor Market Regulations a) 7-9% b) 7-9%; 5. Public Sector Services a) 5-7% b) 7-9%; 6. Tax Morale 22-25 %; And Influence of all Factors: a) 84-98%; b) 78-96%. Where: (a) Average values of 12 studies. (b) Average values of empirical results of 22 studies (Source: Schneider (2009)). Anyway, these are not absolutely all factors creating this parallel economy but main reasons. To speak primitively, people do not want to give their own money – would they be legal or illegal – to the government. To my honest understanding the shadow economy helps poor to survive. I am no way going to defend the rich businessmen and companies which hide their real income, as the reasons for the big money are far bigger - nor so much naïve as for poor people like immigrants who REALLY have to survive and they get paid in cash. This cash is usually much much less than the one paid to the citizens of the country they moved to. Would they be babysitter young girls, escort girls, street market sellers, second-hand dealers and etc. If we calculate the income of all those low-paid jobs we will see clearly that if even they contribute to the country budget, the budget would need to support them anyway to help them survive – would it be providing living space, unemployment compensation, insurance and etc. So the coin in the case of the poor is two-sided. They do not grab that much to be considered criminals. They only strive to survive or make their own living. For the rich businessman/businesses the volumes of the crime increase and in this case the regulatory organs must keep their attention and legislation strict. As with those volumes the term of contemporary slavery gets understandable, since the matter in this case does not refer negatively only to the GDP of the country. Those “fat” but “built in shadow” paying cash machines do not disturb themselves about labor contracts, remuneration adjustments, labor conditions, leave permissions and etc. The people live their lives paid in cash, but with limited right to defend their future or career. For such cases I've brought a slogan – Cash will never die. In the case of large shadow company founders and businessman the cash is often used to bribe governmental officials (particularly in the developing countries with unstable political situation) to help with some regulations, to get better pieces of a pie, sometimes the cherry on the pie, too. Pay gifts, events and etc. which serve to make easier the dark businesses. In such volumes the budgets of the corrupted countries suffer as such “commodities” create a full stuck of issues which go out of control and the government image and of course the economy suffer enormously. Let's discuss the situation: the government strives to improve constantly, but usually these improvements are prolonged in a long term. If we take the instance of our country: the official monthly pension in Georgia ranges between \$60 and \$75. Also this sum in \$ depends on the currency exchange rate which recently became unstable and Georgian Lari depreciated significantly. This automatically means that the old can buy much less products and medicines, clothing and health care products and etc. The official inflation rate according to the Georgian statistics office is 6.4%. In 2019 the pension increased by approximately \$6. In 2020 it is planned to increase it by approximately \$6. If we take into consideration the fact that the majority of products in Georgian consumer basket are imported and the USD/ Georgian Lari exchange rate is unstable we can understand that the increase will not be sufficient or even make sense for the old people.

There are multiple ways that relatives, neighbors, friends help them, would it be money transfers from abroad and etc. So for those expenditures the government work is not efficient. The same happens with the salaries for teachers, doctors, transport workers and etc. So how do those people survive? There are thousands of not registered household businesses, hundreds methods of double-accounting systems for registered businesses and whatever government does in the country, when per capita income is extremely low (\$4345.5), we can in no way avoid citizen's will to hide incomes and not to pay taxes. This becomes vital matter, as those taxes amount sometimes can save the money for primitive need for food. As again and again the official subsistence minimum for working age male in Georgia is 189.9 Georgian Lari (appr. \$63!). In his last book Mr Anthony Atkinson provides very interesting information about distribution of incomes in former SU and Eastern European countries, where the shadow economy figures were significant. There are mentioned poverty level figures for the year 1989: 2% in Estonia, 51% for Tajikistan and 13% for Georgia – it was the median figure. He describes the medium salary level at 81-88 roubles. So how people survived according to the figure of approximately 81-88 roubles per person per month? People who lived that time in SU remember well how customers were buying goods “under the shelves” or in the black market. The goods on the black market were imported and nobody customs cleared them or paid any tax. Money used to buy all those goods was also “black” as Soviet citizen's salary was not enough to pay for those comparably expensive black market goods. Of course, official figures calculated were disclosing uncovered poverty – 40 million was the number of persons living below the poverty line. So how did they all survive? The researchers were not informed how “underneath” production companies or organizations were functioning and how the bribes were being distributed. Bribes were the inseparable part of parallel/grey economy which constituted a large amount of money. How could they have been measured if there was no statistics of shadow economy? Nobody would allow any foreigner economist calculate any wealth distribution in SU or at least provide real data. That is the reason why it was considered that 40 million Soviets lived below poverty line as nobody would have given the real figures. Nobody would speak out loudly about the black money or better conditions when the official figures were different. We know that the Soviet Union used to have a planned economy where everything was being foreseen and easily predictable: the volume of production, the sales volume, the income, the distribution of salaries and etc. But still the country was facing a deficit of high quality goods. To say that they did not exist on the market means to admit the fact that we do not accept the existence of one of the largest shadow economies in the world. The Soviet industrial production was one of the largest in the world and its volume by 80-es of the last century was equal to the 20% of the world production. What would be the figures of shadow economy then? By the time of Perestroika the figures increased and the “business people” in shadow economy accumulated important capitals and could even dictate the political decisions. At this point the idea of positive issues of shadow economy becomes actual. If not the unofficial incomes received in different ways, people would never survive or would live in constant depression. In former SU the shadow or grey economy was the natural tool which helped to live a normal life at least, as the luxury one was forbidden and only chosen persons could enjoy it. Though nobody knew in the end what would be the price of it. Would it be a jail or loss of career forever? Many of shadow businessmen and corrupted officials went to jail but years after Perestroika started and Soviet Union was destroyed, they became “respected businessmen”. As *Tempora mutantur*, as ridiculous it may seem but nowadays the shadow economy helps thousands of businessmen to make business easier in regards to tax payments. Would it be use of cryptocurrency or offshore registered companies the free but black money turnovers are still guaranteed, unfortunately. Parallel economy helps not only businessmen's unregistered profit, but very often to the government officials hide their dark incomes. Thus they feel free in managing/distribution of their unofficial wealth. Let's remember all those colorful revolutions in Eastern Europe.

The Shadow economy has reached the political heights in that period and after. It is not a secret that changes in governments need extremely large amounts of funds. Those funds are very often from not very transparent sources (at least partially). In those cases a generous support from official/unofficial sources is very much welcome. In the end, both sides gain from it - both the winner and the funds provider. The balance is usually achieved. This is a discussion in a bit sarcastic way, of course. In real that is a very simple reason why inequality level is increasing in the world. The Poor earn poor and often uncovered money and they have to pay taxes as hiding is prohibited and punished, the rich are earning huge money and they have an opportunity to hide their wealth easier. If we consider all those famous offshore zones: if they bring so much happiness with dark or grey money and they hide the income of high-level officials or businessmen, then why do they exist? As it seems it is easier for the sharks in financial world to swim in offshore warm and deep waters rather than pay taxes and let the government budget increase to facilitate the life of poor and improve the country social-economic situation. As we know that the shadow economy slows the development of the country as it illegally “steals” a huge amount of GDP. We can bring thousands of examples how people escape paying taxes, thousands of examples of money-laundering operations. We remember hundreds of famous people brought to public shame with those schemes. Thousands of examples how the governments punish them but neither way the parallel economy ends up anywhere. Here are some figures from developing and absolutely advanced countries.

*Figure 1: Figures from developing and absolutely advanced countries*



What happens now in the top-developed countries with strongest monetary and tax regulations? Are they free of the shadow or a grey economy? Of course not. Even in countries with the highest per capita income and PPP we see the high enough rate of shadow economy and plus, we know that the figures are approximate, as mentioned above several times.

According to the International Labor Organization as of 2018 more than 60% of the world employees worked in the informal economy sectors. Meanwhile we see the assistance to the parallel economy from the cryptocurrency market the capitalization of which has reached the unprecedented figure of \$223,428,466,006. We can imagine the number of employees and self-employed on this market. We can see thousands of advertisements on how to create a huge fortune trading cryptocurrencies. Of course those money amounts are gray and tax-free. What does it mean for the employee – to be employed in parallel economy? Here is to what I refer as an expression Contemporary Slavery. Unfortunately, the slavery has not died yet and the labor still is regarded by some employers as a slavery. We may fight it and defend the employees' rights but the world still is cruel and a lot of underage children work in informal economies and they are being exploited. Thousands of mothers stay jobless after having a baby, millions of people work over-time and no one is paying them the compensation or providing additional leaves, as the rules in informal economy do not obey internationally created standards of employees' protection. How should we call it if not the Contemporary Slavery?? Let us return to local economy discussion again. Georgian economy is increasing around 5.5% per year. As the leading economic professionals say, Georgian economy is "acting" like "surviving economy". Tourism sector helps a lot to the economy but the products which the tourists consume upon arrival are imported in their majority. Local production is at a very low level and on the market demand on foreign currency (mainly USD, Euro) is still high. In these circumstances it is clear how easily the shadow side functions. There are still a lot of companies or businesses where people get paid in cash. For instance, simple car rental services, touristic routes guide job, drivers, tour-guides salaries and etc. It is easier to have employees more satisfied with a little bit higher payment with the help of avoiding taxes. But in the end when the pension time comes what do that people have in hand? Black money? Huge savings? Career growth? No way. Nobody provides lifetime guarantees with cash payment. For this case the expression used - contemporary slavery substitutes the working agreement way of verbal contract employment. Employer hires an employee, pays him/her cash and thus the employee becomes a contemporary slave. In the countries with high unemployment rates or high immigration level the contemporary slavery prospers.

### 3. CONCLUSION

We should admit that shadow economy carries global character – crypto currency creation and its largest capitalization together with offshore zones facilitate this process a lot. When people process relatively high-cost operations and do not want to pay taxes crypto provides the easiest way to get the money transfer in net amount and the net profit. If we say that it is illegal then why the governments do not regulate this market? As we may conclude the shadow economy plays an important airbag role in balancing the critical situations in countries. We have an example of Greece when its huge gray economy was used to balance the critical situation. We have also an example of Soviet Union where shadow economy played significant role in destroying the socialist USSR and creation of separate independent countries. Would we refer to these results as positive or negative, they are the result of parallel non-transparent processes in economy and we may not neglect it. Cash, paid without tax obligations is free substance in shadow economy. Nobody refuses getting net cash for any regular/irregular responsibility, sometimes not absolutely legal, but still a service. Cash helps to bribe or "buy" people and dispose their benevolence. Cash makes the poor happy in getting a little bit more comfort for their difficult life. And finally, cash is given to beggars and the rich similarly with different obligations/expectations or no obligations/expectations at all. To my humble point of view, literally cash will never die as it brings comfort to lives of millions and would we like admit it or not, shadow economy helps cash to survive and vice-versa.

## LITERATURE:

1. Anthony B. Atkinson Measuring Poverty Around the World. @2019 by Princeton University Press. ISBN 978-0-691-19122-5; pp. 195-198.
2. Friedrich Schneider, The Shadow Economy and Work in the Shadow: What Do We (Not) Know? Discussion Paper No. 6423 March 2012 <http://ftp.iza.org/dp6423.pdf>
3. Giorgi Mzhavanadze / ISET ; Does Georgia Have One of the Largest Shadow Economies in the World? March 14, 2015. <https://forbes.ge/news/3597/Georgia-One-of-the-Largest-Shadow-Economies>
4. Gregory Grossman, The Second Economy in the USSR and Eastern Europe: A Bibliography. Paper No. 1, September 1985.
5. <http://www.papava.info/publications/papava-Corruption-and-Primary-Accumulation-Capital.pdf>
6. <https://tradingeconomics.com/georgia/inflation-cpi>
7. <https://www.geostat.ge/index.php/ka>
8. [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_627189/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_627189/lang--en/index.htm)
9. <https://www.imf.org/en/Publications/WP/Issues/2018/01/25/Shadow-Economies-Around-the-World-What-Did-We-Learn-Over-the-Last-20-Years-45583>
10. Vladimer Papava; Today We Have Survival Oriented Economy; October, 17, 2019. [http://bfm.ge/lado-papava-chven-dghes-gvaqvs-gadarchenaze-orientirebuli-ekonomika/?fbclid=IwAR3KpZsClCc3rjRCJqQbdk7iNw\\_GOboXfYiSND6OtJunOP9tJDRWkq7PQnY](http://bfm.ge/lado-papava-chven-dghes-gvaqvs-gadarchenaze-orientirebuli-ekonomika/?fbclid=IwAR3KpZsClCc3rjRCJqQbdk7iNw_GOboXfYiSND6OtJunOP9tJDRWkq7PQnY)
11. Волконский В.А., Корягина Т.И., “Официальная и теневая экономика в реальности и статистике”; Рост теневой экономики – вызов для теоретиков и для государственной статистики. Журнал «Экономика и математические методы», 2000, Том 36, № 4



## **ROLE OF PSYCHOLOGY IN THE HUMAN RESOURCE MANAGEMENT CANDIDATE SELECTION PHASE, SURVEY-BASED RESEARCH STUDY FROM SERBIA**

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### **ABSTRACT**

*The development of psychology indicates that its greatest significance lies in the scientific study of phenomena. Speculative assumptions are replaced with reliable methods, with the help of which precise measurements are obtained. As demonstrated in the paper in full detail, psychological diagnostics bears crucial significance to human resources management. Human capital bears the greatest value for an enterprise, due to which fact it is important that all necessary measures should be taken so as not to allow a wrong selection both for the enterprise and for the candidate him-/herself. The use of different techniques compatible with each other provides us with the needed data about man and finally one individual person represents a set of numbers, which are most frequently compared with a set of numbers relating to other individuals. Such a procedure is almost associated with new dehumanization of people in business doing. In contrast to such quantitative methods, however, there are also the qualitative methods that, although less reliable, emphasize the uniqueness of each single person. The present task of human resources management is the mutual adaptation of the individual and the organization. The organization looks for an individual who will fulfil work tasks.*

**Keywords:** *human resources, psychology, human resources management, selection, tests*

### **1. INTRODUCTION**

The overlapping of psychology and human resources management is present in all phases of the managerial function. Psychology makes its greatest contribution during the selection process, since during the process, the key two functions of both disciplines – scientific assessment and damage minimization – dovetail with each other. Selection ensures that the candidates who will best fit into business operations are chosen, which implies their possessing the required competences for the successful performance of work tasks, that candidates' personal characteristics fit in with the climate of the organization and that there are a possibility of and a wish for further improvement.

All these are the necessary conditions assessed by means of psychological measuring instruments. Qualitative data represent objective and reliable measurements, which confirms that a good decision has been made. If psychological assessments during the selection are missing, there is a greater threat that an inadequate candidate will be employed, which results in negative consequences, such as additional costs, fluctuation, stress, dissatisfaction. The paper is aimed at establishing a link between data from different sources so as to understand the cause-effect relationships between phenomena and the contribution made by psychology during selection. The aim of the paper is also to make conclusions about the main findings obtained through secondary and primary research studies with the help of the set hypotheses. Hypotheses:

- H1: Psychological tests and the presence of a psychologist in the candidate selection process minimize a risk of the wrong choice of employees.
- H2: Psychology plays a significant role in all phases of the selection process (such as the preparation of tests, interviews, results processing and interpretation...).

The survey conducted had the aim to collect and analyze experience during the selection process, in this case from the perspective of the candidate. A total of 141 respondents participated in the survey.

## **2. CANDIDATE SELECTION – THE HUMAN RESOURCES MANAGEMENT PHASE**

### **2.1. Basic Determinants of Selection as the HRM Phase (the notion, the goals, the process)**

Selection can be defined as a “process in which a choice is made from within several qualified candidates by the application of pre-determined and standardized methods, rules, and techniques, to ultimately establish a labor relationship with those who are the most appropriate ones concerning the requirements of a certain job” (Ilic, 2018, p. 112). A successful selection is perceived through the achievement of the two basic goals (Kulic & Vasic, 2007):

1. the prediction and maximization of the labor successfulness of the candidate(s) and the organization, and
2. the avoidance and minimization of mistakes during the selection of (a) candidate(s).

In order to reduce the probability of making mistakes and prevent the occurrence of the mentioned consequences, i.e. in order to successfully conduct the whole process of such selection, the basic principles which professional selection is based on and which ensure a scientific approach and the most efficient results need to be adhered to. The basic principles that selections consist of are as follows (Kovacevic & Petrovic, 2000):

- a) people differ from one another in the proportion of their respective characteristics;
- b) different jobs require different characteristics, as well as different combinations of characteristics;
- c) differences between people are visible and measurable, and the requirements of the workplace are also possible to measure;
- d) there is a connection between people’s characteristics (the predictor) and successfulness at work (the criterion);
- e) the ratio between the predictor and the criterion is possible to numerically express.

An individual’s qualifications always need to be observed through the requirements of a business position so as to achieve compliance between those two variables and enable as exact a predictive value as possible.

Due to the said, it is necessary to emphasize the assumptions representing the basis for the successfulness of the selection process (Przulj, Jankovic & Vemic Djurkovic, 2014):

the careful identification of the job requirements, such as abilities, knowledge, and personality since the criterion is determined on the basis of that;

- the determination of differences between candidates since the ability to do the job depends on them;
- a lack of harmonization between the candidate's abilities and the requirements of a certain job does not speak about the candidate's general inability to work, but a lack of the assumption of the successful job performance does;
- the candidate's developmental possibilities cannot be neglected since they may be crucial to his/her successfulness at work.

Assessing man is a very complicated and complex process. Although stabile characteristics, such as personality traits, one's temperament, intellectual capabilities, attitudes and so on are frequently observed, there are also the other attributions making an individual's behavior variable and unpredictable, caused by emotions, thoughts, and motivation. Such factors originate from man, his innate characteristics, experience and subjective perception. Man, however, is always in a broader context which he is in an interaction with, for which reason the number of influences is additionally expanded. Such a multifactorial approach to researching and predicting human behavior would go far beyond the possibilities and needs of human resources management. Due to the said, the assessment of candidates is carried out on the basis of available and measurable facts. Based on the foregoing, it becomes obvious that psychologists are becoming the most important professionals in the process of the determination of differences among the candidates who have applied. By means of different selection methods, especially psychological tests, which also includes the collection, processing and interpretation of data, objective and reliable information is obtained.

## **2.2. Predictor Measuring**

The employer's advertising his need for new workers attracts a large number of interested candidates, which makes the correct recognition of those individuals who will meet the requirements of the vacant workplace in the best manner the main challenge of selection. In the previous considerations of human resources management and psychology, the complexity of human nature has been elaborated in full detail. Centuries-long discussions on the conceptualization of man have resulted in numerous theories in search for the basic personality dimensions. Changeable comprehensions of the motivation for man's behavior have directly influenced the practice of people management in an organization (Ilic, 2018). Apart from the accurate assessment of the abilities of the candidates who have applied, the key goal of the selection process is implicative of the prediction of their future behavior. In order to come closer to the achievement of that goal, human resources managers apply psychological assessments. Psychological measurements and testing sessions systematically apply rules so as to assign the numerical values representing some human characteristics. Such measurements are an inseparable part of every selection and make the establishment of precise predictions significantly easier. Measuring includes two variables crucial to the whole process, which are mentioned in the selection basic principles: the criterion and prediction. The results of the analysis of the work, which identify the basic tasks and obligations of a single workplace, as well as the needed attributes a person should possess so as to be able to successfully perform those tasks and obligations, constitute the basis of those variables. The criterion is exactly defined based on the description of the job, i.e. of the requirement, the duties and responsibilities of a certain job position. With the help of those pieces of information, it is possible to correctly define for each position what it is that we have in mind when speaking

about successfulness at work. In order to measure performance, various data can be utilized, of which some represent the objective number of products, the data about the personnel or the assessment techniques, such as assessment by the supervisor. On the other hand, predictors are the measures of those human characteristics that are recognized as unavoidable in order to meet criteria, i.e. in order to reach a satisfactory work performance. During the selection process, predictors most frequently appear in a form of diverse tests, such as the tests examining various abilities, personality inventories, interviews, biographical data collation instruments, measuring centers and so on. There are two preconditions that have to be met before employers opt for some predictors, and they are as follows (Gatewood, Field & Barrick, 2010):

- a) predictors must be relevant for the job;
- b) the recognized predictors must be measured in the right manner.

It is important to emphasize the fact that the predictor has a direct role in decision-making in the selection process, whereas the criterion has an indirect one. Based on the results of the test, the manager decides on whether to employ or to reject a candidate. If the test results are satisfactory, it is possible to conclude that the respondent possesses the required characteristics to a needed extent, due to which fact it may be expected that his/her future behavior will favorably influence the business philosophy of the organization. The criterion certainly has an exceptionally important role. The criteria measurements serve to evaluate a selection, i.e. to estimate how successfully predictors anticipate behavior and decide which predictors should be included in the selection process. Such an evaluation, i.e. the selection successfulness, mirrors in a high correlation coefficient, the so-called 'validity coefficient', which will be discussed later in the paper, between the results of the predictor and the results of the criterion. Except for the fact that the role of the criterion in a selection is presented as indirect, the selection process itself is frequently considered as indirect. Human attributes, such as various abilities, skills or traits, are not always easy to perceive; moreover, they are frequently invisible or veiled by other characteristics. The problem is also the fact that man is influenced by numerous factors, through which the whole process becomes additionally more complicated. It is mainly accepted that tests, which encompass the most representative features of a certain phenomenon, are constructed based on theories. Through the scores achieved on those tests, a conclusion is made about the extent to which some characteristic is present in the respondent. Tests provide a convenience of a scientific approach, which ensures different advantages subjected to consideration in full detail within psychometric notions, such as objectivity, reliability, and validity, which will be discussed later in the paper. Adhering to those scientific rules results in various conveniences for the organization. For example, when we want to learn what it is that makes up an individual's personality, it would be most natural for us to observe that individual in different situations. However, that would take us a lot of time, and probably that person would not behave naturally, knowing that someone is watching him/her. For that reason, the techniques that will measure traits in the best manner and simultaneously be economical to use, are devised. After defining the qualifications needed for a workplace within the analysis of the job, it is necessary that the psychological instruments by means of which the recognized abilities will be measured should be selected. Different methods and techniques provide different data about candidates, due to which fact it is useful to combine diverse sources. As has already been mentioned, information from tests is the predictor, i.e. the needed traits that are necessary so as to successfully do the job (the criterion). For the reason of the said, it is important to know which methods provide which type of data. The following scheme shows the sources of perceptions and the information giving a picture related to the candidate and the required traits.

<b>The traits needed for the adequate performance of...</b>	<b>The sources of informing about the traits</b>
Personal 'background' and prior successfulness	Application Form Interview Evidence of educational qualifications Recommendations
Abilities and interests	Application form Evidence of educational qualifications Psychological tests Recommendations Interviews Data about work
Attitudes and needs	Interviews Psychological tests Recommendations
Analytical abilities	Evidence of educational qualifications Psychological tests Interviews Work-related references Tests of job sample
Health, energy and strength	Medical examinations Interviews Work-related references
Value system	Recommendations Interviews

*Figure 1: The needed qualifications and the sources of informing about the same (Susa, 2009)*

According to the above scheme, there are several techniques by means of which the same attributes may be examined. It is also possible to deepen the data collected by applying one technique through another. For example, the information about the candidate obtained via the CV may be the basis of the interview. The biggest problem that may occur during the processing of scores is when the differences in the results do not appear due to the candidates' individual differences, but rather due to the different conditions of the test situations or due to rating. An example of distracting factors at the moment of examination may be external noises or the examination time, when it is too early or when it is too late. The rating differences appear as a consequence of subjectivity, and most frequently this happens when essay responses are reviewed on tests or during interviews in the presence of only one examiner/interviewer. In order to avoid that, the rules pertaining to psychological testing sessions ensure strictly controlled conditions. One way to achieve that is the standardization of the measurement procedure, which has the following characteristics (Gatewood, Field & Barrick, 2010):

- Content – every person should be assessed by using the same pieces of information, i.e. the same content. This includes the structure (offered answers, open-ended answers, essay questions, and so forth) and the means (paper-pencil tests, the computer, the video, and so on);
- Management – information is collected in the same manner whenever selection measurements are applied;
- Scoring – the rules of rating are defined prior to conducting the measuring and they are applied in the same manner to all respondents. For example, when there is a threat of unreliable assessments during the interview as a result of subjectivity, the steps preventing it, such as a trained professional or agreement among several examiners/interviewers, should be predefined.

The essence of psychological measurements is made up of results, i.e. numbers. Data statistical analysis directly depends on the type of numbers, or more accurately on the measurement scale which the data belong to. There are four measurement levels: 1) nominal, 2) ordinal, 3) interval, and 4) ratio. The precision degree based on which differences among people can be measured grows with shifting to higher levels. Precision grows with more complex scales since such scales provide more detailed information about the phenomena observed, so based on them it is possible to carry out more developed statistical analyses. Nominal analysis bears no quantitative value, but instead represents the category which some object belongs in. For example, when 'the sex' is concerned, 1 may indicate the male sex, whereas 2 may correspond to the female sex. Ordinal scales are used for ranking, where, however, there is a lack of the information about the distance between categories, there is no uniform interval. That problem is eliminated in the interval scale. The deficiency of the interval scale reflects in the fact that a zero exists arbitrarily, which means that it has no natural meaning. When a respondent achieves zero points on a test examining the verbal ability, such a respondent will not be considered as someone who does not possess verbal abilities. The truthfulness of such a conclusion would imply that the test which was applied encompasses all the items of linguistic abilities, whereas in reality, such a test encompasses the representative measurements of such a phenomenon. The presence of the absolute zero, which appears in the ratio scale, enables the conducting of all mathematical procedures. However, ratio scales are rarely found in human resources management. The reason for that lies in the fact that psychological phenomena are, in the majority of cases, normally distributed in a population, and as has already been said, there is no sense saying that a person possesses "0" verbal abilities, which means that the majority of predictors and criteria are measured by means of the interval scale. The interval scale ensures sufficiently precise numbers, and enables the conducting of complex statistical analyses. There has already been a mention of the standardization of measurements in the context of controlling unwanted influences. A mention was made of the fact that diverse physical circumstances may represent a distracting factor during the testing session, as well as individual differences during the rating. The additional sources of mistakes are created during answering in the cases when an individual is in a physical or mental disbalance due to anxiety, stress, tiredness, not understanding the instructions of the test, the mood, and so forth. The professionals included in the selection process may also exert an influence on the answers given by the respondent. That happens when, during the interview, one examiner reacts to the candidate kindly, whereas another reacts in a dislikeable manner. Apart from standardization, there are yet a few more psychometric procedures ensuring a correct and precise measurement. The so-called metric characteristics must reach a certain standard before the psychological instrument for which they are performed can be used in practice. The main metric characteristics used during a selection include: objectivity, reliability, validity (Schütz et al, 2015). The objectivity of the test is the degree to which the results and interpretation of a test are independent of the examiner, as well as the extent to which the testing situation conditions are controlled. Standardization belongs in objectivity during the implementation, which should ensure equal conditions for all candidates. Objectivity during the rating is ensured when the object of observation is assigned measurable magnitudes, for example when close-ended questions are concerned. Since, if there is a possibility of the open-ended answering to the questions, objectivity decreases due to a lack of the predefined rating criteria. Objectivity in interpretation deals with the question whether different raters reach a consensus on the same answers. Reliability is the metric characteristic that demonstrates the extent to which a test determines the precision, consistency and stability of the examined phenomenon. In selection, the following are used most:

- the test-retest reliability coefficient – the same test is given to the same sample of respondents, after which the correlation between the two results is determined;

- parallel forms – these are two versions of the test with different items, which, however, measure the same phenomenon. Two tests should be balanced with respect to the number of the items, the degree of difficulty and statistical checks;
- reliability as internal consistency – this implies how similarly the items in one test measure a certain characteristic;
- the split-half reliability coefficient – implying the decomposition of the test into two parts, frequently on an odd-even basis.

The validity of a test is checked since psychological measurements are of an indirect character. Due to that, the degree of validity indicates whether a test measures what it is intended to or not, for example whether it really measures general intelligence or school-acquired knowledges. Later, once the successfulness of the criteria activities is determined, “predictive validity” or “prognostic validity”, i.e. the accuracy of the predictor with respect to the criterion, is estimated. Due to that, validity is frequently defined as a degree to which proofs support the decisions made based on the collected results (Husremović, 2016). In the case of the selection process, the validity types are as follows:

- content validity – the representativeness and relevance of the items for the observed phenomenon;
- criteria validity – generally, it signifies connectedness with other variables, i.e. in the case of selection, the competitive (diagnostic) connecting of the predictor results with those of criteria at the same time; it is a prognostic correlation between results at a later point in time;
- construct validity – the overlapping of the test results with the theoretical construct that is being measured. The overlapping with the tests measuring connected constructs (convergent validity) and those measuring foreign, unconnected constructs (discriminative validity).

The degree of the strength of the connectedness of the two variables of correlations is determined by the values ranging from -1 to +1, where a sign refers to the direction of such connectedness. Norms serve to interpret the information obtained and are mostly used on the occasion of comparing an individual with a reference group. Metric characteristics represent the fundamental element of the selection measuring since the precision of measurements ensures the significance of the numbers themselves. Complex statistical analyses are insignificant unless that precondition is met. On the other hand, there are numerous steps during the statistical analysis of the overall process, which in selection starts as early as in test preparation. Due to that, companies are frequently faced with the question whether they want to use the existing tests or opt for building their own. The use of the existing tests carries about several advantages (Gatewood, Field & Barrick, 2010):

savings in money and time;

1. attached significant information, such as the reliability and validity of the test, if there are prior research studies;
2. they are more powerful than the tests developed in accordance with the organization's possibilities.

If an enterprise is faced with the difficulties of finding the tests that most adequately fit into the fixed goals, a special-purpose test should be constructed. If a company is faced with such a task, it is necessary for it to grasp the complexity of the whole process. Challenges start as early as with the analysis of the work that is needed in order to determine the basic data. In contemporary organizations, the nature of work changes too fast, so the traditional analysis of work does not provide more satisfactory data.

The attention focus is expanded from a narrower workplace onto the whole organization, and apart from internal influences, it also includes the factors of the external environment. A choice of the method also depends on diverse factors, such as the number of the candidates who have applied, the costs of the testing, the available resources, the type and responsibility of the job, the ability of the dependent determinant such as the manner of rating and interpreting and much more, and these are but the first two steps in the construction of selection standards. Obviously, the involvement of professionals is becoming a necessary variable in such a toilsome process. Psychologists follow their knowledges and their understanding of the relevant empirical data and theories during the identification and implementation of appropriate methods, and also enable the correct interpretation of results.

### **2.3. Instruments for Collecting Candidates' Biographical Data (Biographical Data Tests)**

Application Forms and Work-related Biographies represent an unavoidable process of applying for a certain job. Given the fact that they are being included as early as in the initial phases of selection, the majority of candidates have already had such documents in their hands. Except for the general data in the forms, the additional pieces of information may also be required offering a deeper perspective and examining the attitudes, expectations, values, traits of personality, intellectual abilities and so on. The primary purpose of these biographical data is (Gatewood, Field & Barrick, 2010):

- a) the recognition of and making a decision on whether the candidate who has applied does met the minimum requirements of a certain position or not;
- b) the assessment and comparison of individuals' weaknesses and strengths.

The basic assumption which all biographical instruments are based on reads that the prior behavior is the best predictor of a future behavior and successfulness. Due to that, biographical questionnaires are frequently considered to be providing the greatest prognostic validity. Such an attitude is responsible for assigning increasing importance particularly to work biographies, so the construction of the standardized questionnaires encompassing an ever-increasing dimension of examination is insisted on accordingly. They can be respondents' attitudes, values and interests, as well as both financial and social situations. Certainly, what is important is that the organization should determine the key factors, i.e. predictors, that should be examined. Such a standpoint neglects the usual phenomenon of the false presentation and over-exaggeration of certain data and the work biography, due to which fact the step implying checking the references and the biography becomes necessary. Such checks are aimed at affirming the truthfulness and accuracy of the stated information, and also to find out the unfavorable biographical data the candidates have left out and have not mentioned. Checks may include the examination of the candidate's criminal records, adherence to the law, but the same is mainly conducted in order to check the data about his/her education and previous jobs. Contacting the candidate's previous employers, or recommendations, enable collecting objective data about the candidate's work habits, his or her responsibility and motivation, as well as his/her overall contribution to the organization. That very procedure, however, is also faced with several shortcomings. Many employers do not provide information about their ex-workers, in the case of a bad recommendation, so it is not possible to defend such an attitude. False recommendations may be given due to the fear that their employees might sue them, or someone who wants to get rid of a worker who has no qualities, for which reason they deliberately issue a good recommendation. There are certain measures that might be undertaken so as to put the effects of a recommendation under control, which is implicative of, for example, the use of structured patterns, looking for recommendations officially and understanding the whole process professionally, collecting recommendations from several different persons who used to cooperate with the person concerned and who had different labor relations.



Summing up all the findings, the advantages and the shortcomings of biographical instruments are singled out. The positive aspects are made up of the cost-effectiveness of the techniques. When there are preconstructed patterns, such patterns may significantly simplify the process and, besides, also save monetary assets. It is inevitable to highlight the predictive value, although the techniques have been subjected to criticism with respect to subjectivity through false pieces of information and the nature of self-reporting questionnaires. The deceptive objectivity of external checks can be mitigated by the adherence to certain rules. Biographical data instruments are not sufficiently precise and reliable techniques, due to which fact they are used in the initial phases as a step facilitating the further selection process.

#### **2.4. Instruments for Collecting Information About the Candidate's Abilities and Personal Characteristics (Written and Verbal)**

The term 'psychological tests' is the overall name for the different techniques used in the selection process so as to check whether candidates have, or do not have, the needed abilities, i.e. whether they do, or do not, meet the stipulated criteria for a successful work performance. The majority of psychological tests present results in a form of numerical values. Due to their quantitative nature, it is possible to determine not only if a person has, or does not have, a certain ability, but also the degree of the development of a concrete attribute. That enables again that an individual's achievement can be compared with the results of the other candidates who went through the identical situation. Psychological tests bear an extremely great significance to the whole selection process since it is characterized by the precision and objectivity of the whole process from building the tests, via their use and processing, to finally the analysis, comparison and interpretation of the results. All that is ensured by valid and reliable information that guarantee a choice of the best candidate and a successful future of the organization and the individual. Except for the fact that psychological tests include instruments for the examination of the numerous aspects of man, such as, for example, his abilities, interests, attitudes and personality characteristic traits, there are also different tests within the framework of one single field. The inclusion of appropriate standardized tests, as well as the engagement of qualified professionals, psychologists, who ensure a harmonious and correct implementation of all the selection phases, becomes a necessary condition. Ability tests is the general name for the tests focused on the examination of the specific abilities of an individual person. Abilities imply the respondent's certain activities and possibilities, which are mainly independent of experience, which means that they are innate dispositions acquired in advance. Intelligence tests are the most important and most frequently used. Their significance arises from the assumption that every job in an organization requires the use of one's mental capacities. Apart from that, various studies have confirmed that there is a high correlation between high scores achieved on intelligence tests and performances at work, which makes them the most valid test. There are numerous definitions of intelligence, but the ability to find one's way around in unknown situations and the use of logic to solve tasks are almost always highlighted. It is important to understand that intelligence tests are not interchangeable since every single test includes the items pertaining to diverse mental functions. The examples of some functions are as follows: spatial orientation, verbal fluency, memorizing, perception of relations, numerical understanding, auditory processing, the reading and writing abilities, the speed of cognitive processing, and much more. Different intelligence tests may have a different combination of items, an accent may be placed on special mental operations, or the other ones may be completely left out. Certainly, the final results on intelligence tests point at the overall, general mental achievement since they confirm the original definition that reads: intelligence implies problem solving. Within the framework of ability tests, specific ability tests, creativity tests, mechanical ability tests, and sensory and psychomotor ability tests are frequently used apart from intelligence tests.

Differently from the ability tests that mainly measure the respondent's maximum performance and possibilities in a narrower field, personality tests single out average behavior and a stable tendency to react. In their job ads, employers often single out the desired characteristics of future colleagues, such as loyalty, collaboration, motivation, ambitiousness and so on. Special connectedness between the Big Five paradigm and the prediction of one's successfulness at work is present on the conscientiousness and emotional stability dimensions. High scores on those dimensions create a picture of the worker who is hardworking, persistent and success-oriented, while simultaneously demonstrating stress resistance during turbulent circumstances and emotional challenges. The mentioned characteristics are useful independently of a position. Other factors, such as the collaboration ability, may be an advantage in work performance if they are relevant to a certain workplace. Examples of that are the jobs that crucially require teamwork, secretarial work or the work of the customer service. Although personality characteristic traits do not, as a rule, predict performance equally successfully as other techniques do, they yet provide information related to the employee's other important characteristics. It includes satisfaction and dedication to work, suitability for teamwork, taking initiatives, no absenteeism from work and all in all no demonstration of counterproductive behavior. Due to its nature, personality assessment represents a task more complex than other phenomena. The main features that make precise measures more difficult to achieve are as follows (Kulic & Vasic, 2007):

- the qualitative, not quantitative, basis is examined;
- man's traits are not firmly determined and constant in all situations, but they are rather complex and subject to changes;
- the information is received through a self-reporting questionnaire, and there is a possibility of a false presentation of answers so as to create a more favorable picture of one's own self;
- there are no correct and incorrect answers, or one and only possible interpretation, due to which fact it is impossible to determine the development of a trait.

The most natural manner to examine personality would mirror in the observation of candidates in some ordinary situations so as to draw conclusions about their characteristics through the way they react. Such an approach, however, has certain limitations. It is more difficult for one to behave naturally under supervision, and besides, it is extremely uneconomical. Interviews are the most popular; as a consequence of that, they are the selection method applied most frequently, although it has been criticized for its weak reliability and validity. This arises from an interesting fact that, in this case, man is the subject matter of assessment, as well as the instrument of assessment. Due to its uniqueness in comparison with the other techniques, certain measures are undertaken for the purpose of improving metric characteristics. This will be discussed later in the paper. In the beginning, it is important to mention where the popularity of interviews arises from and which pieces of information they provide. Apart from making the candidate familiar with the exact tasks of the job which he/she has applied for, and with the general business operations of the organization, the interview provides us with a wide range of information about the candidate. The examiner/interviewer ties in with the biographical data, such as education and qualifications, abilities and skills, and deepens the same; he/she gathers information about the candidate's interests, individual potential, as well as more complex characteristics, such as the candidate's treatment of the authority, professional integration, individual and independent decision-making, and so forth. The fact that not a single manager wants to employ a person who he/she has never met in person before is frequently stated as the reason for the popularity of the interview. Personal experience provides us with additional knowledges of interpersonal characteristics, such as politeness, communicativeness, assertiveness, etc. Yet another advantage of the interview lies in its public relations enrichment function.

The interview is not always conducted on a one-on-one basis; the number of the participants may vary, depending on the number of the candidates who have applied, as well as the present interviewers (Kulic & Vasic, 2007). There are certain problems with the interview in relation to objectivity, reliability, and validity. The factors of suchlike irregularities lie in numerous sources, but are mainly divided into the factors pertaining to the candidate, situational factors, or the factors pertaining to the examiner. The examples that have already been mentioned related to the candidate's anxiety during the interview/examination, possible noises and interruptions during the testing session, and the individual approaches of individual interviewers. The presented graph indicates the flow and the dynamics performed during the interview, placing in the focus of our attention the challenges which the interviewer is faced with. The candidate comes to the interview with the intention of presenting him-/herself in a positive manner. That process is initiated from nonverbal communication already, such as the candidate's appearance, facial expressions, shake of the hand, eye contact. Serious candidates prepare themselves for the interview by thinking in advance of the usual questions asked during the interview. Some candidates are also prepared to distort the picture of themselves or give socially desirable answers so as to increase their chances of employment. By doing so, they make the interviewer's task more difficult, since the interviewer should recognize and estimate how well the candidate fits into the business operations. There are, however, unfavorable factors, too, contributing to a bad decision; those factors come from the examiner/interviewer. If the examiner/interviewer overly points out the negative information received from the candidate, which may also include nonverbal communication, prejudices related to the sex, the years of age, religious affiliation, and nationality, a wrong picture may also be obtained. In case the interviewer is insufficiently familiar with the requirements of the vacant workplace and the necessary characteristics, he/she will not know what pieces of information he/she should gather, or what questions he/she should ask. A presentation like this leads to the conclusion that the need for the inclusion of a psychologist who will minimize mistakes through a systematic approach, which in the case of the interview implies the structuring of the interview, i.e. the timely formulation of questions, the presence of as large a number of trained professionals as possible and the standardization of rating, as well as the subsequent assessment of the successfulness of the interview, should be highlighted once again.

### **3. SURVEY-BASED RESEARCH STUDY ON THE PARTICIPANTS OF SELECTION (CANDIDATES)**

#### **3.1. Research method**

The primary research study was conducted from 01.03. until 01.05.2019. in a form of a survey and, apart from demographic data, consists of the questions directly connected with the experience during the selection process, in this case – from the candidates' perspectives. A total of 141 candidates from Republic of Serbia participated in this research study. The survey had been prepared by means of the Google forms tools, and included 16 questions, of which the last one is of the open-ended type, whereas the rest of the questions require 'yes/no' answers or an answer based on the five-degree Likert scale. The survey was distributed via social networks – Facebook and Instagram – as well as with the help of the Selection agency base of candidates. The data that will be collected within the framework of the primary research study will be processed with the help of descriptive statistics, whereas correlation analysis, as well as the Pearson coefficient correlation, will help identify the existence of the indicators' interdependent connections. The first group of the questions (question 1,2 and 3) related to the determination of the sociodemographic and labor categories of the respondents.

### 3.2. Results

The largest percentage of the respondents were of the female sex (57.4%), whereas there were a little fewer number of the respondents of the male sex (42.6%). The majority of the respondents belonged in the years-of-age group from 18 to 25 (46.8%), only to be followed by the years-of-age group from 26 to 35 (31.9%), and finally the years-of-age group from 36 to 45 (17%). The biggest number of the respondents had a higher education (36.2%); those with a secondary or grammar school diplomas followed them (23.4%), and finally came the respondents with academic studies (23.4%).

- Q4. The *I've gone through group discussions; simulations* assertion  
A larger portion of the respondents have taken part in group discussions or simulations (70.2%).
- Q5. Mainly more than one person were present at the interview  
According to the majority of the respondents, there were more than one examiner/interviewer during the interview (61.7%).

For the next group of questions, Likert scale were used with following values:

- 1- I completely disagree
- 2- I mostly disagree
- 3- I don't know
- 4- I mostly agree
- 5- I completely agree

- Q6. The tasks within the framework of the selection process were to a great extent connected with the position I had applied  
To a greatest extent, the respondents indicate that they fully agree with the attitude that the selection was well devised for the workplace (34%), only to be almost equally followed by the attitudes of the respondents who agreed (23.4%), and finally those with no concrete opinion (25.5%).

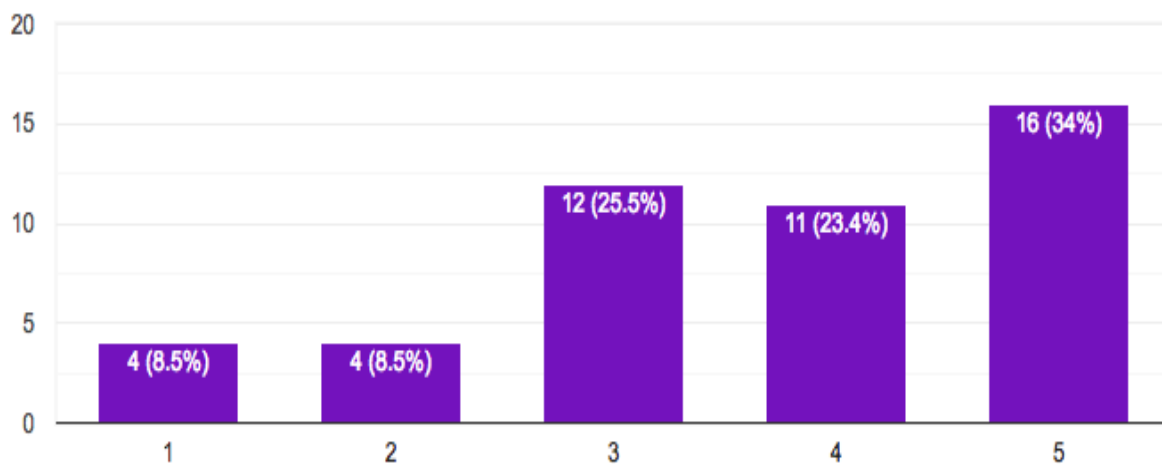


Figure 2: Question 6 related answers

- Q7. Intelligence tests were frequently an integral part of the selection processes I took part in  
The opinions are very divided – for the largest part the respondents did not agree at all or had no concrete opinion (23.4%), only to be followed by those respondents who agreed or even fully agreed (19.1%).

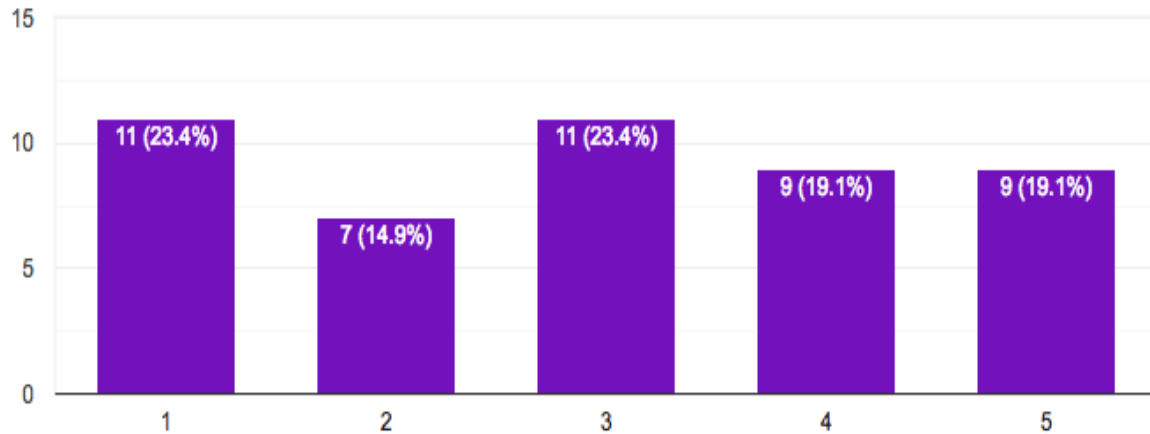


Figure 3: Question 7 related answers

- Q8. Personality tests were frequently an integral part of the selection processes I took part in  
The majority of the respondents either fully agreed or had no concrete opinion (25.5%), whereas they were followed by the respondents who agreed (21.3%).

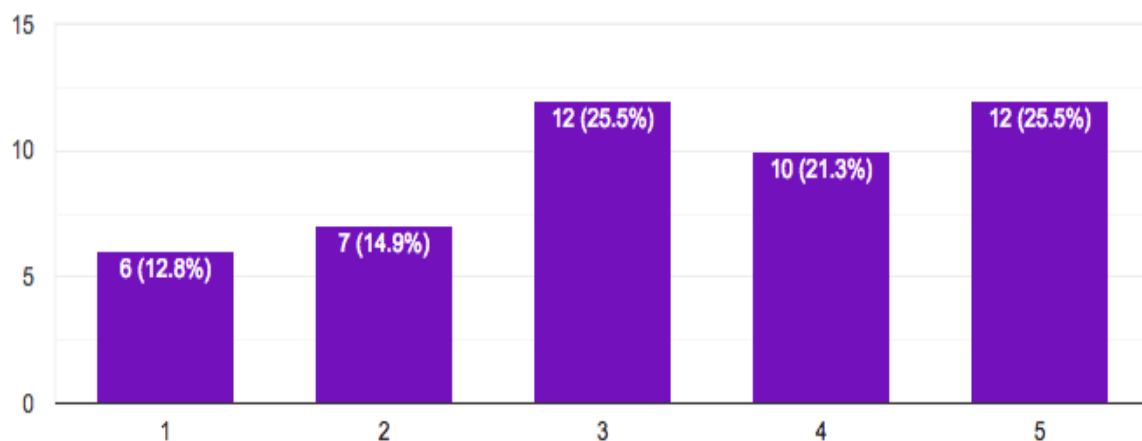


Figure 4: Question 8 related answers

- Q9. During the interview, I had a possibility to point out my competences and to present myself adequately  
The biggest number of the respondents fully agreed with the item, which means that they were satisfied with the impression they had left during the interview (42.6%), only to be followed by those respondents who agreed with the item (27.7%).

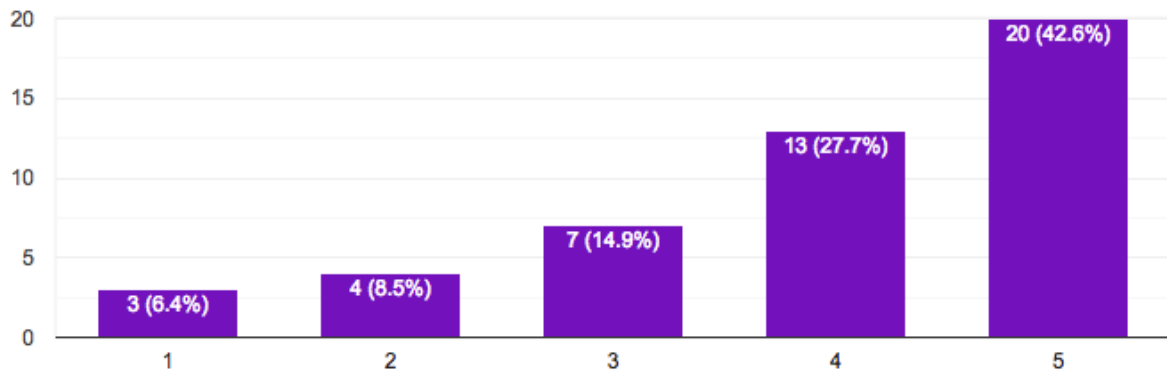


Figure 5: Question 9 related answers

- Q10. Once I see that an agency has a complex selection process, I am in two minds whether to apply or not  
The largest number of the respondents did not feel fear when faced with a complicated selection process (28.3%), only to be followed by the respondents who agreed or had no opinion (19.1%).

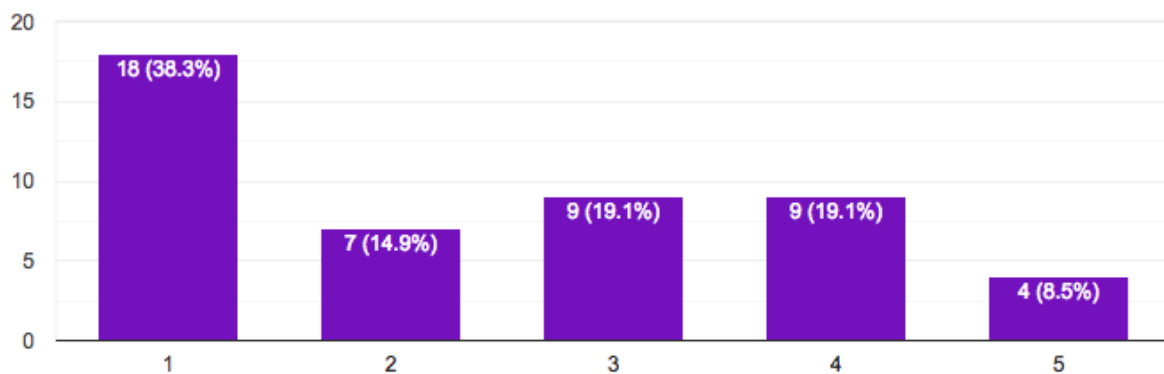


Figure 6: Question 10 related answers

- Q11. In the majority of the advertisements for the positions I applied for, the abilities required for a certain position were clearly defined  
The respondents mainly agreed with the item that the job positions were sufficiently clearly defined (34%), only to be followed by the respondents who either fully agreed or had no opinion (19.1%).

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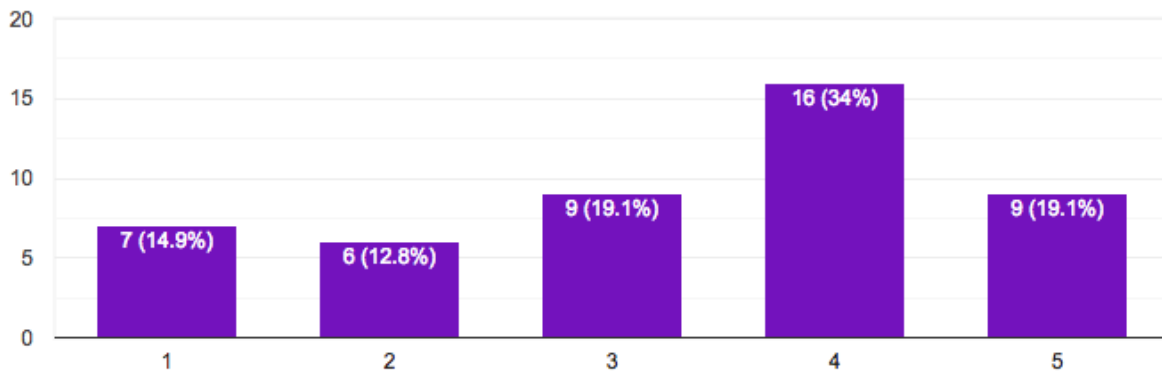


Figure 7: Question 11 related answers

- Q12. In case I do not pass to the next round or in case someone else is given the job, I would like to be given an explanation of why I was rejected  
Almost all the respondents would like to know the reason why they were rejected (89.4%), whereas a smaller number of them agreed upon the item (8.5%).

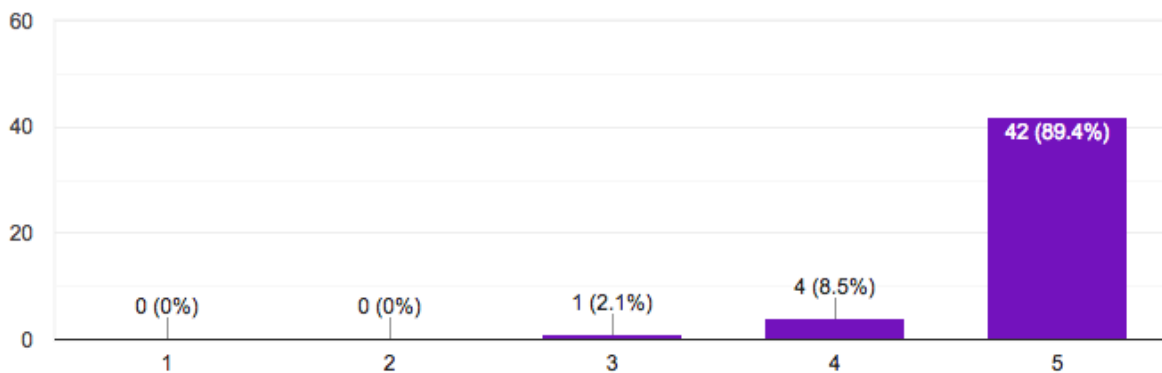


Figure 8: Question 12 related answers

- Q13. I am ready to give socially desirable answers in order to increase my chances of being given the position  
The largest number of the respondents would be fully ready to give distorted answers so as to increase their chances (31.9%), only to be followed by the respondents who agreed (25.5%).

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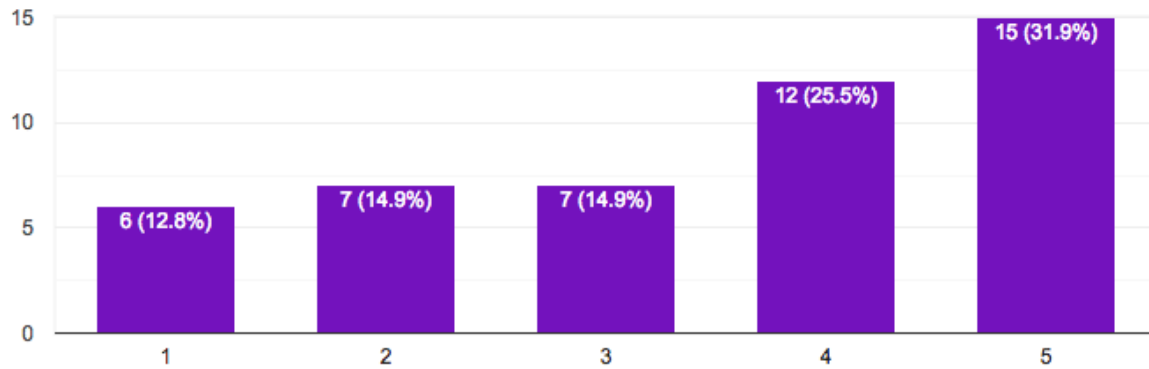


Figure 9: Question 13 related answers

- Q14. The CV is a representative measurement of my own abilities and knowledges  
The opinions of the representativeness of the CV are divided – the largest number of the respondents fully agreed with the item that the CV depicts their knowledges, only to be followed by the same percentage of those without an opinion (23.4%), and finally came those respondents who agreed (21.3%).

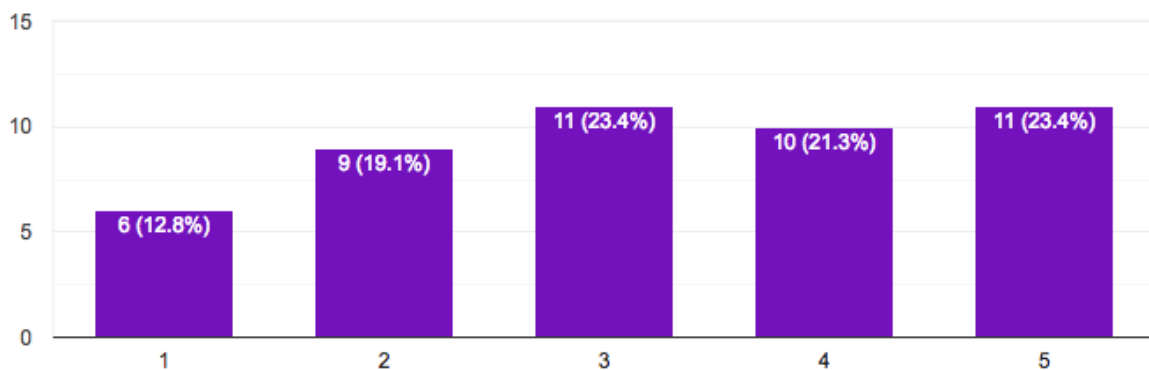


Figure 10: Question 14 related answers

- Q15. Anxiety is a usual factor preventing me from being relaxed at an interview  
The largest number of the respondents expressed the opinion that they did not agree at all with the item implying that anxiety is what hinders them during the interview (34%), while the same percentage of the respondents had no opinion. Then came those who agreed with the item (12.8%).

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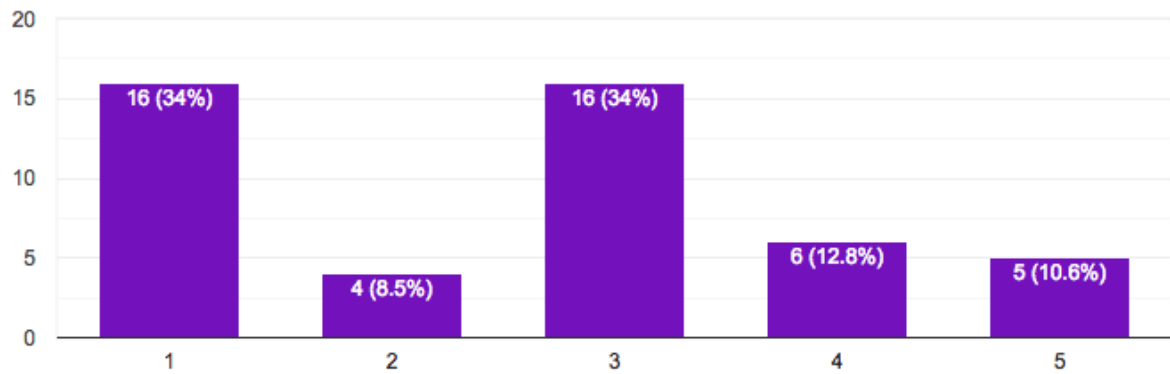


Figure 11: Question 15 related answers

- Q16. In your opinion, what is the best indicator showing that you are a quality candidate and that you will be successful in performing a certain work?

The answers to this question can be grouped into several categories; namely, those concerning the prior experience or practical work, a particular personality trait, the belief in the examiner's/interviewer's individual assessment:

- the CV, a sample of work, practice, years of experience, probationary work, a recommendation;
- persistence, motivation, the ability to adapt, intelligence, self-confidence, responsibility, a wish to make progress and learn, honesty, eloquence, ambitiousness, readiness to reach a compromise, willingness to cooperate, and a team player, being self-critical, emotional stability;
- a good assessment of the recruiter by the employer. They know best what they need for a position; it depends on how well and how clearly they have been told what I am required given the position which I am applying for; meeting all the criteria stipulated in the job competition and the satisfied expressions on the HR's faces and the faces of the other interviewed people.

We have further analyzed the data in order to detect more information. Firstly, we have applied Chi-square goodness of fit test to check if the distribution of answers is normal. The results are summarized in the Table 1.

Table 1: Chi-square and P-value results

Question	Chi-square	p-value
6	11.83	<b>0.01</b>
7	1.191	0.89
8	3.31	0.501
9	21.4	<b>0.001</b>
10	11.61	<b>0.02</b>
11	6.51	0.16
12	142	<b>7E-16</b>
13	6.51	0.16
14	1.82	0.76
15	15.5	<b>0.003</b>

Statistically significant difference between hypothesed normal distribution and the observed one is indicated by a p-value in bold.

- Questions for which we have obtained statistically significant deviation from the normal distribution are: 6, 9, 10, 12 and 15. We have analyzed the possible meaning of every finding.
- Question 6. The tasks within the framework of the selection process were to a great extent connected with the position I had applied;

There is enough support to claim that respondents do believe that the selection process is a meaningful one, ie. trying to fit job description to the process of selection.

- Question 9. During the interview, I had a possibility to point out my competences and to present myself adequately;

There is a good chance that interviewing makes a good tool for candidates to clearly state their strong sides. They believe putting the self-image in front of the selectionist is accomplished by the interview the best.

- Question 10. Once I see that an agency has a complex selection process, I am in two minds whether to apply or not;

The complicated selection process is a show-stopper. This is a very important observation. The selectionists need to at least make their process look less complicated should they desire high response.

- Question 12 In case I do not pass to the next round or in case someone else is given the job, I would like to be given an explanation of why I was rejected

The importance of feedback is obviously important in the eyes of candidates. Selection process should consider this very seriously.

- Question 15. Anxiety is a usual factor preventing me from being relaxed at an interview;

This makes a strange finding. An extreme at left-tail of distribution definitely poses a question: are candidates overconfident or are presenting the practice of giving socially convenient answers in this instrument? We have to answer yet. Furthermore, we have analyzed the results of the rest of the questions.

- Questions 7 and 8: 7. Intelligence tests were frequently an integral part of the selection processes I took part in; 8. Personality tests were frequently an integral part of the selection processes I took part in;

These questions are connected to the degree to which candidates perceive psychology as present at different levels of the selection process. What can be concluded is that answers do not diverge from normal distribution, meaning that what is found would be found in the general population also. So, we can say that there is no special preference in the population tested compared to the general population. This does not, however, confront our conclusion of the efficiency of psychological testing within the process of selection. What is found is merely perception by candidates, important but not conclusive measure.

- Question 11 In the majority of the advertisements for the positions I applied for, the abilities required for a certain position were clearly defined;

This simply means that ads are designed and edited properly.

- Questions 13 and 14: 13. I am ready to give socially desirable answers in order to increase my chances of being given the position; 14. The CV is a representative measurement of my own abilities and knowledge;

Questions are very personal and the result is a relatively important one. No special care is to be taken about the possibility of social-pressure caused bias in answers, neither there is need to care about super-polished CVs. These features are found in general population, and will be inevitably met during the selection process.

### 3.3. Conclusive Considerations

The advantage of psychological procedures lies in the fact that they enable different methods to complement each other, to face candidates with the real challenges of the business ambience, and to simulate a potential future cooperation. The results related to the potentials and capacities of a future worker generated in this manner also offer an extraordinary base for the further development of the development plan and a support to the development of talents, which is a safe precondition of a long-term and successful mutual cooperation. There are instances of major overlapping between theoretical considerations and the information obtained based on the interview and the survey. The first hypothesis, reading: Psychological tests and the presence of a psychologist in the candidate selection process minimize a risk of a wrong choice of employees; is considered to be affirmed. A detailed illustration demonstrates that the scientific approach guarantees the best results since all possible measures are implemented for those purposes. Psychologists have full control of how a selection process should look, what is it that an accent will be placed on, and how it will be realized. The second hypothesis, reading: Psychology plays a significant role in all the phases of the selection process (such as the preparation of tests, the interview, results processing and interpretation, etc.); is also affirmed through the primary and secondary research studies. The unique flexibility of the selection process enables it to constantly follow trends and adapt the procedures to contemporary society, which simultaneously also requires ever-increasing skillfulness and the inclusion of psychologists. Future research could also include the perspective of selection agencies in order to obtain another dimension of research.

### LITERATURE:

1. Gatewood R., Field H.S., Barrick M. (2010). Human Resource Selection. 7th edition. Boston: Cengage Learning.
2. Husremović DŽ. (2016). Osnove psihometrije za studente psihologije. Sarajevo: Filozofski fakultet Univerziteta u Sarajevu.
3. Ilić M. (2018). Menadžment ljudskih resursa. Beograd: Visoka škola strukovnih studija za informacione tehnologije.
4. Kovačević P., Petrović I. (2000). Privlačenje i selekcija ljudi. Beograd: Ekonomika preduzeća.
5. Kulić Ž., Vasić M. (2007). Menadžment ljudskih resursa. 2. izdanje. Banja Luka: Zavod za distrofičare.
6. Pržulj Ž., Janković M., Vemić Đurković J. (2014). Put do najbolje odluke. 1. izdanje. Pale: Dis-Company.
7. Schütz A., et al. (2015). Psychologie: Eine Einführung in ihre Grundlagen und Anwendungsfelder. Stuttgart: Kohlhammer.

## NUDGES FOR POVERTY REDUCTION

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### ABSTRACT

*The present paper explores the scientific literature of the newly developed field of behavioural economics, in order to identify valuable inputs for poverty reduction policy making. As behavioural economics research flourished in the last decades, so did the interest in applying its results for designing more efficient policies, that would actually take into account the psychological variables that modulate human behaviour. Experiments demonstrated that we operate quite differently from what would be expected of the rational, self interested, all knowing analyst, the homo economicus that the standard economic theory created. Thus, scientists focused on identifying ways to capitalize on this knowledge of our psychological functioning in order to facilitate more optimal decisions, fostering better results both on individual and on social level. The nudge theory developed as a response to this need and it quickly gained the attention of policy makers worldwide, while also generating debate on its efficiency and ethical implications. As poverty continues to be a theme of strong preoccupation on international level, despite all efforts made for combating it, inputs from the nudge theory are welcomed, with their promise of measurable positive results with relatively small investments. The research on how to nudge people out of poverty is still at the beginning, but the first steps made offer a promising perspective for the future.*

**Keywords:** behavioural economics, nudge, policy, poverty

### 1. INTRODUCTION

While in the first chapter of this paper, we will focus on the most relevant scientific literature on nudges, in the following chapter we will analyse the behavioural economics research on poverty, poverty decision-making and poverty propagating behaviour. The third chapter will analyse the most important nudges and their applicability for poverty reduction.

### 2. THE PLACE OF NUDGES IN THE BEHAVIOURAL ECONOMICS THEORY

The Behavioural economics theory is a relatively young research field, yet it gained academic momentum rapidly, due to the fact that it provides scientific explanations for situations that were difficult to explain through the standard economic theory. The work of Kahneman and Tversky, started in the 70s, represents the cornerstone in the development of this field. In 1974, the two authors published their paper “Judgement Under Uncertainty: Heuristics and Biases”, in which they focused their attention on the decision making process. They discovered that people use certain methods, when facing decision making in complex and uncertain informational environments. These heuristics, as they named them, while necessary in our day to day efficient functioning, don’t always lead to the best decisions, making us prone to error. In the late 80s Richard Thaler’s contributions to the Journal of Economic Perspective of the American Economic Association put to question the principles of the mainstream neoclassical economic from a behavioural, psychological perspective. These first steps were soon followed by others. Dan Ariely’s books (2010, 2011) represent important contributions in this field, turning the focus on how the research results could be used in practice, by individuals and policy

makers alike, to make our lives better. Ariely's research sketched the portrait of the real person, different in many ways from the rational and self serving homo economicus constructed by the economic theory. His research proved that we are not, in fact, the rational, self-interested agents, capable of making optimal decisions to maximize our utility. On the contrary, most of the time we are „predictably irrational”, as we make again and again the same mistakes, falling under the spell of the same biases and judgment errors systematically, repeated in the same way. We live our lives in complex environments, where many forces act upon us simultaneously, shaping our behaviour. Our decisions are shaped by their context, more than we are willing to admit. We always evaluate the things around us and establish their value to us by comparison to others, focusing our attention on things that are easier to compare, thus eliminating from our menu of choices, those alternatives that are most difficult to relate to the other options. Our first impressions and decisions sometimes become anchors that will unconsciously influence our future behaviour and decisions for a long time. Thus, through this process, our first decisions, sometimes taken without proper deliberation, transform into long term habits, that will have significant impact on our way of life. We have a very short memory of past emotional states, but a much better memory of our actions, thus it is difficult for us to identify the emotions that may have caused short term decisions that transformed into long term decisions, in an emotional cascade (Ariely, 2011, pp. 284). Many decisions made under emotional circumstances, continue to produce effects for a long time, even though, under rationale circumstances we would have avoided them. We are loss averse, we procrastinate the implementation of our own decisions, our self control is hardly optimal, leaving us to be derailed from our long term goals by present imbolds. We over evaluate what we have – objects or ideas, mostly due to our loss aversion, as going back to the state we were in before the possession is perceived as a loss and we are always willing to go through great efforts to avoid a loss. We feel emotionally attached to the things in which we have invested work and thus we over evaluate them, without even acknowledging this tendency, through an endowment effect. The status quo predisposition makes us willing to keep things as they are and be reticent to change. After we have made a decision and invested effort in it, it is very hard to change the decision and lose all that investment. This was called the error of the retroactive cost. We are willing to punish treason or injustice even if it may cost us time, money or even put us in physical risks and this brings us pleasure. We are very good at conceiving the future, but it is hard for us to estimate the measure in which we will adapt to it, even in seemingly inconceivable situations, such as disease, handicap, pain. The hedonic adaptation is a well known process, it is well known that, in time, both positive and negative perceptions seem to pale. A life changing event, such as an accident or a lottery gain, may have a strong initial impact on our happiness, but this effect will reduce significantly in time, whether the consequences of the event are positive or negative (Ariely, 2011). We cannot „calculate everything, compare all the options and always chose the best and the most adequate action direction”, we lack self control and the external contexts determine our preferences (Ariely, 2011, pp. 249). Thus, knowing how the brain works in certain situations would help us in reaching better, more self serving decisions (Ariely, 2011). Richard Thaler and Cass Sunstein (2008) focused their efforts on identifying ways in which all these results from the behavioural economics research can be used in order to improve the situation of certain groups, through certain policy approaches. They found ways in which small changes in policy design, with relatively reduced costs, could bring significant behavioural changes in the desired direction. They defined nudges as “any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.....To count as mere nudge, the intervention must be easy and cheap to avoid” (Thaler and Sunstein, 2008, p. 6). While the nudge theory and nudging quickly gained attention, especially in the marketing field, in recent years there has been increased interest for this approach from the perspective of policy design.

Van Deun, van Acker, Fobé and Brans (2018) in their paper “Nudging in Public Policy and Public Management: A scoping review of the literature” compared nudging with other policy instruments. In their view policy instruments can be divided into 3 categories - sticks, carrots or sermons (citing Vidéc et al., 1998). Sticks are regulatory instruments of policy that impose certain behaviour on citizens. Carrots involve economic policy tools that incentivise persons to take a certain decisions. Sermons are based on persuasive communication, thus trying to convince people to adhere to a certain course of action. The authors take into account the definition of nudges offered by Thaler and Sustain (2008) and come to the conclusion that nudges are not to be attributed to the category of sticks, or regulations, since they do not limit any choices (citing Bekker et al., 2015). In the same time they are not to be considered carrots or incentives, since, according to their definition, they involve no alteration of economic incentives available. Nudges are also not sermons since the objective of the nudge is not of persuading through carefully offered information, but they have a higher degree of similarity to sermons in the sense that they have the objective of behaviour change, by bringing certain information to the forefront of the attention. The authors conclude that it is in fact difficult to place nudges within the traditional typologies of policy tools, as they share characteristics of different categories of tools. In their opinion it is important to use them in order to complement “the already rich governance toolbox” (van Deun, van Acke, Fobé, Brans, 2018 citing Kusters and Van der Heijden, 2015), as by not adhering to the original assumptions of rationality and utility-maximizing behaviour of citizens, and by focusing on finding solutions for our bounded rationality, they offer a new and useful insight. These tools are applied in order to change the ‘choice architecture’ of citizens, i.e. the “informational or physical structure of the environment which influences the way in which choices are made” (van Deun, van Acke, Fobé, Brans, 2018 citing Lehner et al., 2016, p. 167). Thus, although policy makers have in place a multitude of tools, such as laws and regulations to make sure that, at least partly, most individuals make decisions that are the most favorable to them, but also for the group or community, the nudge tool offers the possibility to guide the decision making of individuals, but in the same time not to limit in any way their freedom of choosing. Nudges are mostly useful for behaviours that cannot enter under legislative restrictions, but nevertheless have negative costs for the individual and the society. Eating unhealthily is a behaviour difficultly to correct through regulations, but nevertheless it costs in terms of future health expenditure. Amir and Lobel (2008), while reviewing the most relevant literature in the field, tried to better highlight how the research results of behavioural economics should be put to use in policy making, underlining that any decisions on how to develop a nudge should be based on a deep understanding of what type of mechanism is causing suboptimal decision-making, and whether the solution should attempt to eliminate an individual’s intuitive response by engaging the rational mind, or, on the contrary, should put to use the intuitive processes of the mind (Amir and Lobel, 2008). Other authors (such as John et al, 2011) focused their research on trying to assess if the results obtained through nudges, in terms of desirable behavioural change, are worth the money spent in implementing such policy approaches, pointing out that the efficient use of public money should be a criteria used when designing and using nudges. On the other hand, other authors, such as Thaler and Sustain (2008) assess that nudges are in fact the least costly types of policy interventions. In any case, it seems that nudges are used as factors of change, all over the world. The 2014 Report entitled “Nudging All Over the World”, developed by the Economic and Social Research Council (ESRC), identified 136 countries that implemented results of behavioural sciences in their public policies, in order to increase their efficiency. In the United Kingdom, in particular, special attention has been given to this transfer of knowledge from the behavioural economics research towards the decision makers, as the Behavioural Insights Team was created in 2010, in order to facilitate the use of this knowledge in the development of policies. The 2014 Report of the Behavioural Insights Team, entitled “EAST: Four Simple Ways to Apply

Behavioral Insights”, focused on sharing the best practices for developing effective nudges. The authors of this report consider that nudges should be “Easy, Attractive, Social and Timely” in order to reach their goal. In order to make a nudge “easy” the report suggests a strategical use of the default options and messages as simple and clear as possible, as this would help in easing the decision making process of beneficiaries, in complex information environments. An attractive nudge, for example using visual elements - photos, drawings, colour – catches the individuals attention and sustain it long enough to influence decision-making. A social nudge uses the fact that we are naturally social beings, who want to be liked, accepted, even needed, as the report shows. This kind of nudge uses the idea of a communitarian common goal, motivating the person to adopt a behaviour that is modeled by those who are alike him. The timeliness (T) of a nudge is crucial for its effectiveness, because, as the report shows, humans prefer immediate payoffs rather than future ones. It is easier to influence people by making costs or payoffs instantaneous. Thus, the report shows, the most efficient nudge is received right after the event occurred. However, scientific literature shows that it is very difficult to replicate identically a nudge in two different places and obtain the same effects, as it is extremely important to have a clear understanding of the cultural identity of beneficiaries, before trying to nudge them towards more optimal choices and desirable behaviours (Hofstede, 2001). Considering all this information, some authors define nudging to be a “technique aimed at making individuals act, choose, and behave in the ways deemed rational by policy makers.” (August, 2015, p. iv) From this perspective, ethical aspects emerge. As research is used to understand better and better how people can be influenced to behave in a certain way, an imbalance of power can be expected (August, 2015). Pelle Hansen (director of the Danish Nudging Network) and Andreas Jespersen are indeed preoccupied by the ethical issues involved in nudging. “A persistent and central tenant in the political and ethical criticism has been the claim that nudging works by “manipulating people’s choices” (Hansen and Jespersen, 2013). Nudging impairs our autonomy and our ability to make moral choices for ourselves” (Bovens, 2008, cited in Hansen and Jespersen, 2013, pp. 9). Bovens analysed “The Ethics of Nudge” and assessed that “there is something less than fully autonomous about the patterns of decision-making that Nudges taps into. When we are subject to the mechanisms that are studied in ‘the science of choice’, then we are not fully in control of our actions” (Bovens, 2008, cited in August 2015, p. 48). This ethical debate will continue, probably in the years to come. But, as Thaler and Sustain (2008) show, nudges are inevitable: “Some kind of nudge is inevitable, and so it is pointless to ask government simply to stand aside. Choice Architects, whether private or public, must do something” (Thaler and Sunstein, 2008, p. 240 also cited in August, 2015, p. 56). As Sustain (2014, p. 2) shows “the goal of many nudges is to make life simpler, safer, or easier for people to navigate. Consider road signs, speed bumps, disclosure of health related or finance related information, educational campaigns, paperwork reduction, and public warnings. When officials reduce or eliminate paperwork requirements, and when they promote simplicity and transparency, they are reducing people’s burdens. Some products (such as cell phones and tablets) are intuitive and straightforward to use. Similarly, many nudges are intended to ensure that people do not struggle when they seek to interact with government or to achieve their goals.”

### **3. POVERTY FROM A BEHAVIOURAL PERSPECTIVE**

Mani, Mullainathan, Shafir and Zhao (2013) developed studies that are most insightful on how poverty might impact on the decision making process. The authors approached the matter through an experimental context. They identified subjects who’s status would change from poor to non-poor from one day to another. The subjects were Indian farmers and they would be in a position of selling their crop once a year, thus they would be poor before this sale and non poor after.

The individuals part of this study answered to IQ tests and the results showed that the demanding context of poverty consumes mental resources, their results being significantly lower in the context of poverty and improving only weeks later, when the poverty situation was changed into one of relative affluence. Thus, the authors concluded that poverty, and in fact scarcity in general, poses cognitive demands on the individuals, making it harder for them to think deliberately. Experimental research demonstrated that even the presentation of hypothetical scenarios of scarcity is associated with lower results on cognitive tests (Mani et. al., 2013). One such experimental research consisted in inducing “poverty” and “affluence” among relatively well-off subjects, by endowing them or not with different items in a game context. Results showed that poverty was associated with the recreation of the decision making patterns typically exhibited in scarcity context, such as excessive borrowing (The World Bank, 2015). These results made Mullainathan (cited in The World Bank, 2015) think that the poor exhibit the same basic weaknesses and biases as all people do, except that in poverty, these are magnified and lead to more difficult outcomes, due to the fact that the poor do not have access to the same buffers others, more affluent might have. Many authors, such as Neeman and Moav (2012), Deaton and Dreze (2009), Banerjee and Duflo (2011), Roth (2014) focused their research on conspicuous consumption of the poor, with its negative effects on their financial status (savings), generating a deepening of poverty. Data shows that the poor spend less on food, health and education and significantly larger sums on entertainment, feasts, clothing and tobacco. Conspicuous consumption is perhaps a rational response to the stigma the poor usually face, with negative effects both personally and socially. Poverty associated stigma might also explain, at least in part, another poverty propagating behaviour which is the non-take up of benefits (Hernanz, Malherbet and Pellizzari, 2004). This, together with the impossibility of savings and the use of credit, may push poor households to fall into a deeper poverty. The risk of becoming over indebted is high, as the poor do not have a chance of creating a savings buffer for emergency situations. The phenomenon is facilitated by the preference for smaller rewards sooner over larger rewards later (this theme was approached by Gandy et al., 2016, with extensive references). Literature concluded that this type of behaviour is rational in the context of poverty, with rapid and unpredictable changes, where postponing gratification often means losing the opportunity altogether. The risky financial behaviour on many poor people might also be explained by the lack of an adequate understanding of financial decisions’ consequences on medium and long term. As research shows, this lack of financial literacy is very generally applied and people should have access to this type of information in adequate, easy to understand terms. Other authors, such as Appadurai (2004), Ray (2012) and Duflo (2012), focus their studies on investigating the idea of poverty induced mental framing. As the World Bank Report (2015) shows, through the analyzed research, the lenses through which we see the world are very important. These are the mental frames, through which we understand “how the world works” (The World Bank, 2015), focusing on certain elements of reality, while unconsciously ignoring others. Frames are developed based on prior experiences and observational learning and they establish the significance we attribute of our life experiences. Mental frames developed in poverty context might prevent people from fully benefiting of existing opportunities, through a deficit of aspirations (The World Bank, 2015). Guyon and Huillery (The World Bank, 2015; Guyon & Huillery, 2014) experimentally demonstrated that people from disadvantaged groups under-perform in group context, if they are reminded before task completion of their vulnerable status. Their research assessed that poor students have lower academic and employment aspirations than wealthier students at a comparable level of academic achievement.



#### 4. NUDGED OUT OF POVERTY

Cass Sustain, in his paper of 2014, “Nudging: A very short guide”, offered an explanation for the most important nudges, underlining their benefits and the manner in which they could function to facilitate optimal decisions.

- **default rules**, such as automatic enrollment in programs, such as pension plans, educational programs, health systems are considered to be the nudges that are the most effective. The author explains that “unless *active choosing* is involved, some kind of default rule is essentially inevitable, and hence it is a mistake to object to default rules as such.....in many contexts, default rules are indispensable, because it is too burdensome and time consuming to require people to choose” (Sustain, 2014, p. 4). As research repeatedly showed, people in poverty are prone to automatic decision making, due to the fact that poverty, with its multitude of pressing challenges, puts pressure on their mental bandwidths. They would most likely adhere to the default option in place when faced with complicated choices. Thus the default choice should be the one that serves their interests best, pushing them towards decisions that would close the vicious circle of poverty.
- **simplification** is a key nudge in supporting take up of existing programs, by reducing confusion and increasing the adequate targeting of benefits. Increased complexity and lack of coherence of programs usually discourage participation of potential beneficiaries, with dangerous effects on the economy and social and individual well being. “Many programs fail, or succeed less than they might, because of undue complexity.” As a general rule, programs should be easily navigable, even intuitive. In many nations, simplification of forms and regulations should be a high priority. The effects of simplification are easy to underestimate. In many nations, the benefits of important programs (involving education, health, finance, poverty, and employment) are greatly reduced because of undue complexity” (Sustain, 2014, pp. 4). Guaranteed minimum income programs based on complicated application forms and procedures that involve repeated visits to the Local Employment Agencies or other local administrative structures, without flexibility of scheduling are difficult for the poor, due to the high degree of uncertainty of their daily life conditions. This is also the case of application forms for participation in educational programs. It is also important for people fighting poverty to benefit of a certain degree of scheduling flexibility in attending courses or other forms of educational programs, because, as research shows, the poor have less means / resources for handling the unpredictable events of life, such as childcare emergencies. Strict penalties for absences or delays make this type of program opportunities less reachable and usable for the poor.
- **uses of social norms** consist in informing people of what others, similar to them are doing or think that people should do. This type of nudging helps individuals get another perspective of the problem and motivate them in a direction that is considered positive by the most members of a society or community. Vaccination, periodical medical check-ups of children and adults, school enrollments of children from poor communities, all these could benefit from this type of nudge. Families receiving information that a high percentage of community members, although also facing economic difficulties, chose a more optimal course of action, are significantly more inclined to change their behaviour in the desired direction.
- **increases in ease and convenience**, such as making low-cost options or healthy foods visible, thus making the correct decision to be the easy one. The encouragement of a certain behavior is made by making it as easy as possible to engage in that behaviour, even adding a dose of fun, says the author. “Resistance to change is often a product not of disagreement or of skepticism, but of perceived difficulty – or of ambiguity” (Sustain, 2014, pp. 5). Many poverty propagating behaviours, such as not enrolling children in early education and care programs, engaging in unhealthy diets or not engaging in preventive medicine programs are

generated by the fact that the correct decision is perceived to be difficult. Services may not be in proximity, especially for people living in small isolated communities in rural areas. There might be costs even in seemingly free opportunities. For example, even if the participation in early child education programs is free, the families might have difficulties in providing adequate clothing, paying for meals or other associated costs and thus might opt out. Taking all aspects into consideration when designing a program for the poor and making it as easy as possible to use and engage in it should be a key element in policy making for this group.

- **disclosure** helps people take informed decisions, taking more into consideration the real consequences of certain choices. This is applicable in many domains – such as health decisions, financial decisions, educational decisions for children in the family, etc. In the context of poverty, financial decisions are sometimes made without clearly understanding all the terms and implications. Explanations in adequate terms should be made available.
- **pre-commitment strategies and eliciting implementation intentions**, could help people commit to certain behaviours. It seems that, although people might have certain goals, it is not always very easy to engage on the desired course of direction, thus it is helpful to pre-commit as this increases the chances to actually implement the desired behaviour. As research shows, “people are more likely to engage in activity if someone elicits their implementation intentions” (Sustain, 2014, pp. 5). This type of nudge would have a good effect in schools of impoverished communities, where eliciting intentions of continuing education would help the young clarify their decisions, especially in difficult situations, where the financial pressures usually direct the young towards abandoning school and trying to help their families by entering work.
- **informing people of the nature and consequences of their own past choices** - in terms of consumption, expenditure, etc. would help people understand how they could change behaviour for better results. For example a clearer view of past expenditure would help gain an understanding of paradoxical unhelpful behaviours that makes it much harder for people to escape poverty.

## 5. CONCLUSIONS

There are many behaviours that were identified to maintain the vicious cycle of poverty. Over indebteding, early school leaving, lack of adherence to preventive medical programs, non enrollment of children in early education and care programs, non-take up of benefits etc., all have negative effects on the prospect of escaping from poverty and on interrupting the trans-generational transmission of poverty. All the above mentioned challenges that were extensively studied in connection to poverty, could also find a response from the domain of behavioural economics in terms of solutions for diminishing their incidence. Nudges are a new tool in the tool box of policy makers, relatively inexpensive, yet highly effective. Research on poverty generated behaviour and mental framing is still new, but promises answers that, if implemented through well thought nudges built upon a deep knowledge of cultural factors and local mentalities, could significantly improve the lives of the poor and help break the cycle of inter-generational transmission of poverty.

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## LITERATURE:

1. Amir O, Lobel O. (2008). Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy, *Columbia Law Review*, 2098-2138.
2. Appadurai, A. (2004). The Capacity to Aspire: Culture and the Terms of Recognition. In Rao, V. and Walton, M., (eds.) *Culture and Public Action*, Stanford University Press, Palo Alto, California, pp. 59-84.
3. Ariely, D. (2010). *Irrational in mod previzibil. Fortele ascunse care ne influenteaza deciziile*. Bucuresti: Publica
4. Ariely, D. (2011). *Irrationalitatea benefica*. Bucuresti: Publica
5. August, A. M. (2015). *On Nudging In Public Policy* (Undergraduate honors thesis, University of Redlands). Location: <https://inspire.redlands.edu/proudian/11>
6. Banerjee A V, Duflo E. (2011). *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. New York: PublicAffairs
7. Behavioural Insights Team, 2014, EAST Four simple ways to apply behavioural insights, available at:  
[https://www.bi.team/wp-content/uploads/2015/07/BIT-Publication-EAST\\_FA\\_WEB.pdf](https://www.bi.team/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf)
8. Bekker, V, Tummers, L, & Van Leeuwen, M. (2015). *Nudge' as an innovative policy instrument: a public administration perspective*. Conference proceedings of the Social Innovation Research Conference. Available at:  
[https://www.researchgate.net/publication/282808146\\_'Nudge'\\_as\\_an\\_innovative\\_policy\\_instrument\\_a\\_public\\_administration\\_perspective](https://www.researchgate.net/publication/282808146_'Nudge'_as_an_innovative_policy_instrument_a_public_administration_perspective)
9. Bemelmans-Videc, M, Rist, RC, & Vendung, E. (1998). *Carrots, Sticks, and Sermons: Policy Instruments & Their Evaluation*. New Brunswick New Jersey: Transaction Publishers.
10. Bovens L. , “The Ethics of Nudge”, in Till Grüne-Yanoff and Sven O. Hansson (eds) *Preference Change: Approaches from Philosophy, Economics and Psychology* (Berlin and New York: Springer, Theory and Decision Library A, 2008).
11. Cojanu, S.-F. (2018). Financial Behaviour of Romanian Guaranteed Minimum Income Beneficiaries. In A. Sandu, T. Ciulei, (eds.), *Rethinking Social Action. Core Values in Practice* (pp. 66-79). Iasi, Romania: LUMEN Proceedings.  
<https://doi.org/10.18662/lumproc.36>
12. Deaton A, Dreze J. Food and Nutrition in India: Facts and interpretation. *Economic & Political Weekly*. 2009 Febr 14; 44(7): 42-65. Available from:  
[https://www.princeton.edu/~deaton/downloads/Food\\_and\\_Nutrition\\_in\\_India\\_Facts\\_and\\_Interpretations.pdf](https://www.princeton.edu/~deaton/downloads/Food_and_Nutrition_in_India_Facts_and_Interpretations.pdf)
13. Duflo, E. (2012). Women Empowerment and Economic Development. *Journal of Economic Literature*, 50(4), pp. 1051–1079.
14. Gandy K, King K, Hurle PS, Bustin C, Glazebrook K. (2016). *Poverty and decisionmaking. How behavioural science can improve opportunity in the UK*, Behavioural Insights Ltd, Available from: <http://38r8om2xjhl25mw24492dir.wpengine.netdna-cdn.com/wpcontent/uploads/2016/10/JRF-BIT-Poverty-and-decision-making-Final.pdf>
15. Guyon, N, Huillery, E. (2014). *The Aspiration-Poverty Trap: Why do Students from Low Social Background Limit their Ambition? Evidence from France*, available at: [https://www.unamur.be/en/eco/eeco/paper\\_autocensure\\_feb2014.pdf](https://www.unamur.be/en/eco/eeco/paper_autocensure_feb2014.pdf)
16. Hansen, P, Jespersen, A. (2013). Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change. *Public Policy, European Journal of Risk Regulation*, 2013 (1), pp. 3-28
17. Hartfree Y, Collard S. (2015). Locating credit and debt within an antipoverty strategy for the UK. *Journal of Poverty and Social Justice*. 23(3), pp. 203- 214.

18. Haushofer J, Fehr E. (2014). On the psychology of poverty. *Science*. 344(6186), pp. 862-867
19. Hernanz V, Malherbet F, Pellizzari M. (2004). *Take-Up of Welfare Benefits in OECD Countries: A Review of the Evidence*, OECD Social, Employment and Migration Working Papers, No. 17, Paris: OECD Publishing
20. Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, CA Thousand Oaks: 2nd ed. Sage
21. Hollands, G. et al. (2013), Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions, *BMC Public Health*, 13 (1218), available at:  
<https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-13-1218>
22. John, P. et al. (2011). *Nudge, Nudge, Think, Think: Experimenting with Ways to Change Civic Behaviour*. Bloomsbury Academic Publishing
23. Kahneman, D. (2012). *Gandire rapida. Gandire lenta*. Bucuresti: Publica
24. Kosters, M, Van der Heijden, J. (2015). From mechanism to virtue: Evaluating Nudge theory. *Evaluation*, 21(3), 276-291.
25. Lehner, M, Mont, O, Heiskanen, E. (2016). Nudging - A promising tool for sustainable consumption behaviour? *Journal of Cleaner Production*, 134, pp. 166- 177.
26. Mani, A. et al. (2013). Poverty Impedes Cognitive Function. *Science*, 341(976)
27. Moav O, Neeman Z. (2012). Saving Rates and Poverty: The Role of Conspicuous Consumption and Human Capital. *The Economic Journal*. 122(563), pp. 933-956.
28. Mullainathan, S, Shafir, E. (2013). *Scarcity: Why Having Too Little Means So Much*. New York, NY: Time Books, Henry Holt & Company LLC.
29. Ray, D. (2002). *Aspirations, Poverty and Economic Change*, available at:  
<https://www.nyu.edu/econ/user/debraj/Courses/Readings/povasp01.pdf>
30. Roth CP. (2014). *Conspicuous Consumption and Peer Effects among the Poor: Evidence From a Field Experiment*, Centre for the Study of African Economies Working Paper WPS/2014-29. Available from: <http://www.csae.ox.ac.uk/materials/papers/csae-wps-2014-29.pdf>
31. Sunstein, C. (2014). Nudging: A Very Short Guide, *Journal of Consumer Policy*, 583(2014), available at:  
[https://dash.harvard.edu/bitstream/handle/1/16205305/shortguide9\\_22.pdf?sequence=4](https://dash.harvard.edu/bitstream/handle/1/16205305/shortguide9_22.pdf?sequence=4)
32. Thaler, R, Sunstein, C. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven & London: Yale University Press
33. The World Bank (2015). *Mind, Society and Behavior*, World Development Report, available at: <http://www.worldbank.org/content/dam/Worldbank/Publications/WDR/WDR%202015/WDR-2015-Full-Report.pdf>
34. Tversky, A, Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases, *Science*, 185(4157), pp. 1124-1131
35. Van Deun, H, van Acker, W, Fobé, E, Brans M. (2018), *Nudging in Public Policy and Public Management: A scoping review of the literature*. Presented at the PSA 68th Annual International Conference 26-28 March 2018, Cardiff University, United Kingdom, available at:  
[https://www.psa.ac.uk/sites/default/files/conference/papers/2018/VanDeun\\_vanAcker\\_Fob%20Brans\\_Nudging\\_Scoping%20Review.pdf](https://www.psa.ac.uk/sites/default/files/conference/papers/2018/VanDeun_vanAcker_Fob%20Brans_Nudging_Scoping%20Review.pdf)
36. Whitehead, M, Jones R, Lilley R, Howel R, Pykett, J. (2014). Nudging all over the World: Assessing the Global Impact of the Behavioural Sciences on Public Policy, Economic and Social Research Council (ESRC)

# GOVERNANCE IN INTERNATIONAL PADDY INDUSTRY VALUE CHAIN

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## **ABSTRACT**

*This study examines the requirement of the governance or regulations in paddy farming. To achieve a self-sustainable level of rice production, with the aim to ensure food security in the country, System of Rice Intensification (SRI) which is an organic cultivation method for paddy has been introduced in Malaysia. Using qualitative and field evaluation method, this study has conducted six in-depth interviews and 32 field evaluation on both organic and inorganic paddy farming. This study found that there are two leading organic agriculture regulators in the world which are IFOAM and USDA. Major difference between IFOAM and USDA is that IFOAM allows private standard setters to define their own additional criteria and set threshold levels that are above European minimum requirement. On the other hand, USDA does not allow others to set a standard that are above the federal. In Malaysia, organic farming is monitored by the Ministry of Agriculture and Agro-Based Industry Malaysia under MOS. Only 28 organic farms in Malaysia are eligible to use organic labels and are aligned with the organic production regulation by the government. This study also shows few of organic accreditation in several Asia countries including Thailand, Indonesia, Cambodia, Japan, India and China. Moreover, this study provides important understanding and a clear picture of the conventional plantation and organic plantation of paddy in Malaysia. It is important especially for the Research and Development (R&D) department to improve the quality of paddy production to meet all the requirements set up by the governance of the chain. Therefore, this research serves as a reference for Malaysian government, in achieving the objective of National Agricultural Policy to lure the bio economy in Malaysia.*

**Keywords:** Food security, governance, organic, organic accreditation, paddy farming, system of rice intensification (SRI)

## **1. INTRODUCTION**

67% out of 2.7 m Metric Ton of rice consumed, was locally produced (in Malaysia), the rest imported primarily from Thailand, Vietnam, and Pakistan. The movement of organic farming was started as early as in the 1920s. However, it has recently become an issue, of worldwide concern due to the rise of pesticide residues and food contamination in raw food (Somasundram et al., 2016). Thus, to promote global food security, integrated agricultural with organic farming is a popular alternative (Ciccarese and Silli, 2016). The growing public interest in organic food which is deemed to be healthy and safe is pushing organic farming to a whole new boundary. In Malaysia, tremendous growth is seen in the size of organic farms with 131 hectares in 2001 to 2367 hectares in 2006. However, the local organic food industry is yet to be sustainable as 60 % of the organic food in Malaysia is imported (Somasundram et al., 2016). Among the organic products that are imported include fresh raw food of vegetables and fruits, processed food such as cereal, beverages, and grains (Dardak et al., 2019). The main staple food in the country is rice and the growth of paddy is being monitored and adopted under the Ministry of Agriculture and Agro-based Industry (MOA) (In-depth Interview, 2018). In the National Agricultural Policy, it is targeted to lure the bio-economy and, Malaysia is striving to achieve a self-sustainable level of rice production to ensure food security in the country (In-depth Interview, 2018).

However, a study by the World Bank claimed that Malaysia paddy industry is neither profitable nor sustainable (UD.o.A 2017). Thus, apart from the introducing granary area as an approach for sustainable paddy farming, system of rice intensification (SRI), a cultivation method for paddy is also being introduced in the county to increase the yield of paddy (Indepth Interview, 2017). In Malaysia, organic plantation is regulated under the Malaysia Organic Scheme (MOS) (Indepth Interview, 2018). While internationally, the International Federation of Organic Agriculture Movements (IFOAM) and the U.S. Department of Agriculture (USDA) are the main regulators of organic agriculture. Consistence regulatory and monitoring by these bodies would enable the assurance of food quality to consumers.

## **2. OVERVIEW OF ORGANIC FARMING**

According to the USDA, a sharp increase of the organic industry is recorded. 37,032 certified organic operations have been recorded in the year 2016 as compared to a value of less than 10, 000 before the year of 2006 (USDA, 2017). Meanwhile, the survey by The Research Institute of Organic Agriculture and IFOAM in 2015, shows that there are 43.1 million hectares of organic agriculture in 2013 with the majority of the land are from Oceania (40%), Europe (27%), and Latin America (15%). Asia only records 8% to the total land area per se with North America coming next at 7% and Africa at 3% (Somasundram et al., 2016). In Malaysia, only 0.01% of its occupancy was allocated for organic plantation. Comparing to the neighbouring country, this figure is incomparably low as the Philippines has a value of 0.68%, Vietnam with 0.35% coverage, Thailand with 0.16% and finally Indonesia with 0.16% (Utusan Malaysia, 2015). Organic plantations have been tested to have a higher amount of nutrient and antioxidant level by 11 folds. Organic food is said to be 25% more nutrient-dense as compared to conventional food. This would mean that a lower amount of food is needed for higher nutrients level (Mokhtar, 2013). Organic farming means managing crops with natural fertilizers such as manure or compost instead of synthetic fertilizers (In-depth Interview, 2018). Enzymes and plant-based pesticides are also chosen over chemicals and insecticides to control pest and weed (Mokhtar, 2014).

### **2.1. Definition of Organic Farming and its Regulation**

The idea of an organic farming surfaced during the 1920s. Since then, much debate has been going around the globe for the definition of “organic”. Among the first definition of organic was by IFOAM in 1972 which believes that organic agriculture should be a production system that sustains the health of soils, ecosystems, and people. It should rely on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. IFOAM 1972 also believes that organic agriculture that combines tradition, innovation and science would benefit the shared environment and promote fair relationships and a good quality of life for all involved. The principle of ecology mentioned that organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help to sustain them. Whereas, the principle of fairness and care is organic agriculture should build on relationships that ensure fairness about the common environment and life opportunities. It is also managed in a precautionary and responsible manner to protect the health and well-being of current and future generations of the environment (IFOAM, 2017). For the European Union specifically, the state authorities have developed the European Union Regulation, 1991 (EU-Eco-regulation) for 190 of its organization members in 32 of the European countries (IFOAM, 2017). There are only two leading organic agriculture regulators in the world namely IFOAM and USDA. The definition of USDA on organic farming is the integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity (USDA, 2012). USDA is regulated by the National Organic Program (NOP) that was developed in 2000.

This regulatory body is only responsible for developing the national standards for organically produced agricultural products in the exemption of food safety and nutrition (USDA, 2016). The major difference between IFOAM and USDA is that IFOAM allows private standard setters to define their own additional criteria and set threshold levels that are above the European minimum requirement. Whereas, for the USDA, they do not allow others to set a standard that is above the federal unless there are at the presence of a specific environmental conditions where necessary stricter standards are required (Bostrom & Klintman, 2008). Certification process of organic farm and organic product, however, are not done by IFOAM and USDA. They are merely the accredited agencies that will be appointed to carry out these certifying processes in accordance with the regulation. Among the accredited agency for IFOAM are Biocert International and Australian Certified Organic. Whereas, for USDA, some example of their accredited agency are Quality Assurance International and SCS Global Certificate (USDA, 2017). Among all the agencies, there are also agencies that already obtained the accreditation from both IFOAM and USDA such as the Australian Certified Organic. Relationship between these organic regulators can be seen in Figure 1. While the major organization that holds both IFOAM and USDA regulation for international trading is Codex Alimentarius by the World Health Organization (WHO). From the two-main organic farming regulator in the world, countries around the world have adapted and adopted these regulations under a certain ministry's portfolio to be implemented in their respective countries as seen in Table 1. For example, in Malaysia, organic farming in the country is monitored by the Ministry of Agriculture and Agro-Based Industry Malaysia under MOS which was launched in 2002 (Suhaimi et al., 2016). Since 2003, 170 farms in Malaysia had registered for the organic label. However, only 28 organic farms are eligible to use organic labels that are aligned with the organic production regulation by the government. In August 2009, the Ministry of Health in Malaysia has amended the food regulations in 1985 to ensure food products that are labelled with the word “organic, biological, ecological and bio-dynamic” complied with the labelling requirements of the Malaysian Standard MS 1529:2001 which is “*The Production, Processing, Labelling and Marketing of Plant-Based Organically Produced Foods*”. This means that any agricultural product labelled as organic must be MOS certified (KPIAT, 2017).

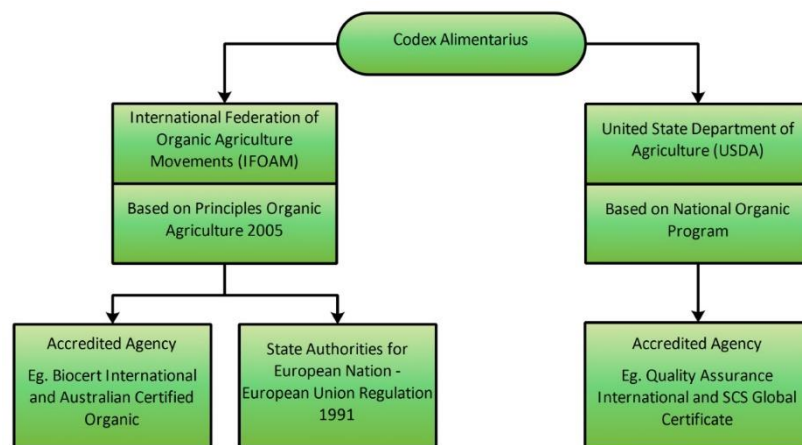


Figure 1: Main regulator of Organic Farming at the International Level (Own compilation)

However, recent market demand for organic labelling has driven the narrowing of organic definition to merely “chemical-free” farming in general (In-depth Interview, 2018). This has greatly voided the initial idea and passion for organic farming. The current idea and definition of organic farming is modified and adjusted to all stakeholder involved such as the producer, consumers, and regulations (Seufert et al., 2017).

In general, some of the common organic labels can be classified into genetically modified organisms-free (GMO-free), Natural, Organic and 100% Organic. GMO-free refers to products that are not genetically modified using modern technology and remain in its original condition. Natural refers to food items that are produced without additives, preservatives, colouring and flavouring. However, natural product does not mean organic. Whereas, organic for non-raw ingredients such as cookies, honey and cereal, organic label only means 70 % of its ingredients are organic. 100 % organic label on the other hand, can only be found in a single-ingredient food or raw food such as fruits, vegetables, and eggs. This label would normally come with a legal seal by certifying country (Mokhtar, 2014).

### **3. METHODOLOGY**

This study conducted both a literature review, in-depth interview as well as field evaluation method to compare value chain of conventional-inorganic versus SRI-organic plantation in Malaysia. 6 in-depth interviews were conducted with farmers and agricultural government officers in 2018. Field evaluations were conducted for both organic and inorganic paddy farming in three states in Malaysia namely Kedah, Kelantan and Pahang in 2017. Out of 32 subjects of samples, 29 are conventional and 3 are organic farms. The field evaluation were made based on activities and farming process on the upstream part of the value chain in 2017. The field evaluation are compared to the previous literature on phases of activities in paddy farming. As for value chain analysis framework, the review covers as follows:- 1. The definition of organic and inorganic 2. General activities in both organic and inorganic farming 2. Input source in farming activities 3. The internal and external governance in a value chain and accreditation compliance between Asia countries.








### **4. FINDINGS**

#### **4.1. Organic Accreditation Compliances in ASIA**

*Table following on the next page*



Table 1: Organic Accreditation in Asia (Own Compilation)

Country	Certification	Compliances	Year	Logo	Sources
Malaysia	Malaysia Organic Scheme (MOS)	Malaysian Standard MS1529:2001	2002		Suhaimee et al (2016)
Thailand	Organic Agriculture Certification Thailand (ACT)	IFOAM accreditation from International Organic Accreditation Service (IOAS)	1995		Win (2017)
Indonesia	Organik Indonesia	Indonesia National Standard SNI 6729:2010	2002		Shiotsu et al (2015)
Cambodia	Cambodian Organic Agriculture Association (CoRAA)	Standards for Organic Crop Production and Production Standards for Chemical-Free Crop Production	2006		CoRAA (2017)
Japan	JAS Seal	Japanese Agricultural Standards adopted from Codex guideline	2000		-
India	India Organic	National Standards for Organic Production	2000		Industry (2014)
China	China Organic Food Certification Center (COFCC)	National Standard of the People's Republic of China: Organic Products GB/T19630-2005	2001		Centre (2011)

## 5. CONVENTIONAL VERSUS ORGANIC PLANTATION IN MALAYSIA

Based on the updated record in year 2016, only 49 farms in Malaysia that are certified by the local government agency of myOrganic or MOS Malaysia and of these 49 farms, only one, is of paddy plantation. This paddy plantation with 9.464 hectares is located in Sik, Kedah owned by Koperasi Agro Belantik Sik Berhad (Jabatan Pertanian, 2017).

The first initiative of organic farming started in Kahang, Johor by a company named KOREF on a 260 acres land. Based on the reviewed paper, KOREF was the first farm to obtain the full certification of organic status from the Malaysia Department of Agriculture in December 2005 (Othman, 2012; Othman, 2016). Organic paddy farming is unpopular in Malaysia because it is not included as an organic product by the Department of Agriculture even with its huge market potential (Othman, 2016). Paddy plantation in Malaysia can easily be divided into two major phases (cultivation and management). As for the cultivation phase, it is divided into conventional farming and application of SRI farming (Chapagain et al., 2016). Whereas, for the management of paddy plantation, farmers may adapt to organic farm management or inorganic farm management (Chapagain et al., 2016). The difference between both the managements is the usage of organic versus inorganic fertilizer, insecticides, and pesticides. Inorganic fertilizers are normally chemical type, which includes urea fertilizer, Kieserite, Muriate of Potash (MOP) and Nitrophoska 15:15:15 which may come in small pieces, pellets, powder or liquid form. Whereas, for organic fertilizer, it is normally produced manually by farmers using microbes or plant that would undergo a decaying process. Alternatively, these organic fertilizers can be obtained from suppliers that are manually produced by composting such as bokashi, kuntan and green fertilizers (Othman, 2012).

### **5.1. System of Rice Intensification (SRI)**

Farming of organic paddy in Malaysia is mainly cultivated using the SRI method, which has been introduced in Malaysia since 2009 (In-depth interview, 2018). This is a method that has been developed in the year of 1983 in Madagascar with the aim to achieve high yield with well-managed resources of water and fertilizers (Othman, 2016). However, this method has been debated over the years due to its inadequate evidence of yield advantage with SRI over conventional method (Dobermann, 2004; Sheehy et al., 2004). Nevertheless, SRI provides an alternative way of sustainable paddy farming where the application of SRI system is a step forward to increase and obtain a higher yield and a better managed of resources such as reduction in water usage (In-depth interview, 2018). This is contrary to the green revolution standard where yield is increased by improving the genetic potential of crops whereby more chemical inputs are used to trigger better yield output (Chapagain et al., 2016). To further develop the applicable system of SRI in Malaysia, a Memorandum of Understanding was signed in year 2011 between the Federal Land Consolidation and Rehabilitation Authority (FELCRA) Training & Consultancy Sdn. Bhd and an NGO in Indonesia, Nusantara Organic SRI Centre which kick-started in Selangor farm (Othman, 2016). By the year 2017, SRI was implemented in Sabah, Sarawak, Perak, Kedah, and Kelantan (Pilo, 2017).

### **5.2. Value chain of Conventional-Inorganic and SRI-Organic Plantation in Malaysia**

The value chain is a tool to analyse the applied technology and processes before being applied to the supply chain and distribution and it was first developed in the 1960s. The idea of this tool is to increase the share of value by the farmers from production to consumption as strategies that can be developed from each of their core activities (Othman et al., 2016). The development of value chain is presumed to be able to facilitate the change of behaviour, transforming relationships and empowering the private sector. Although value chain analysis is quite common, value chain analysis on organic rice is hardly found (Othman, 2016). An enormous number of 2.6 million tons of paddy is harvested each year with the paddy grain is priced at RM 2 billion. However, in terms of food security, Malaysia has yet to achieve a satisfying level with the SSL achieved in year 2014 was only 71.4% (Malaysia D.o.S, 2015). This huge amount of harvest involved more than 100 000 farmers nationwide. Thus, an in-depth study on the paddy value chain is required to ensure the increase of supply of paddy production and its sustainability.

This is in line with the Malaysia National Agro-Food Policy which is set to replace the Third National Agriculture Policy (NAP3) which aim to increase food production in the country (Siwar et al., 2014). The upstream of the value chain of paddy farming is mainly the farmers. While the downstream of paddy farming include rice millers, rice collectors and traders, wholesale traders, retailers, and food processors (Doberman, 2004). Farmers are the main actors in organic paddy farming. The involvement of farmers do not only constrain within the plantation, but they were involved greatly in determining the types of equipment, fertilizers and weeding which are done manually by the farmers and in every stage of the paddy production (Othman, 2012). Thus, production cost in organic farming would be much higher as compared to conventional farming. Although in conventional paddy farming, the involvement of farmers in all stages are also undeniably significant, much of their duties can be eased by ready-bought pesticides and herbicides. Unlike organic farming with SRI management, 38% to 54% of extra labour is required (Rakotomalala, 1997). Value chain in paddy farming include phases of pre-production, production, and post-production with farmers involving at each stage. Table 2 shows the deviation of the phases involved between the organic plantation which are primarily led by SRI system and conventional non-organic plantation based in Malaysia. In organic plantation, no genetically modified seeds are allowed. Irrigation of SRI-organic farming too reduces the amount of water used as the depth of water required is also much lower. In terms of fertilizers and pesticides, an organic plantation only allows organic fertilizer and manual weeding together with pest control using an insect's food chain (Othman, 2012).

*Table 2: Comparison of activities in Conventional- Inorganic and SRI-Organic Farming*

Phases of Activities	Activities of the Value Chain	Conventional – Inorganic	SRI-Organic
<b>Pre-production Farmer</b>	Input provider/ Seeding	Agro-chemically treated seed are used and genetically modified seed is allowed.	Organically grown seed of at least 8 generations and no genetically modified seeds are allowed.
	Preparation of land	Soil are first ploughed with tractors, then twisted to a depth of 10 – 15cm	Similar method is applied with an additional step called distance tools where seeding is planted at a predetermined distance.
	Water Management	Depth of water in paddy field range from 5 – 10 cm	Depth of water in initial stage range from 2 – 4 cm, where it will gradually dry out before harvesting, thus less water is required.
<b>Production</b>	Fertilizer	Fertilizer and pesticides used are normally of those commercially available.	Only organic fertilizer is used. They normally self-processed by the farmers.
	Pest Control	Herbicide and pesticides/poison to control weed growth and pest.	Weeds are discarded manually usually with an equipment. While, natural method such as spraying tobacco water with neem seeds, oil lamp and insect's food chain.
	Harvest	Paddy are harvested at the maturity rate of 85%	Although generally organic paddy is harvested at near 100% maturity, case study in Malaysia organic paddy are harvested at 85% maturity as well.

*Source: Indepth interviews (2018) and field Evaluation (2017), Othman (2012); Raghavendra et. al. (2014)*

Conventional plantation of paddy which relied heavily on chemical fertilizers to increase the harvest yield is not sustainable. As this will be a direct chain effect involving many key players. For instance, in Indonesia, as the subsidies for fertilizer were reduced or eliminated as in the Philippines and Nepal, the fate of a small-scale farmers were on a bleak as they could no longer afford the cost for these inputs (Chapagain et al., 2011). While in Malaysia, only minimal fertilizer was used in accordance to the subsidy given. No additional fertilizer was used even though it could produce higher yield as they could not afford the additional cost (Ibrahim & Mook, 2014).

## 6. CONCLUSION

Since the beginning, the Malaysian government has been supportive of organic farming including matters pertaining to certification standards and their rules and regulations (Tiraieyari et al. 2013). While the myOrganic accreditation scheme is still not recognized by the certification (Suhaimee et al. 2016). This shows that it is achievable even though some of the general import and export requirements tend to be strict, it is imperative for the Malaysian government to comply with the external rules and regulations to maintain and safeguard the local products. Few studies elaborated on the challenges facing organic farmers regarding the certification. Like any policies pertaining to compliance of the rules and regulations, it is crucial for the relevant authorities to monitor compliance. The challenge as rightly noted by Sutinen and Kuperan (1999) is “there is little or no recognition of how policies and the policy process may affect the extent of compliance with regulations.” Quite commonly when there is no compliance, the blame is on the enforcement which is either inadequate or inefficient. Currently, the rules and regulations pertaining to compliance of external requirements are still vague as the field of organic and organic paddy specifically is still at infancy. In addition, there is lack of adequate information on the quality of certification systems in Malaysia, hence it is important for further study to explore this issue.

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## LITERATURE:

1. Agriculture, U.S.D.o.A (2017). *2016 Count of certified organic operations shows continued growth in U.S. market. U.S. Department of Agriculture.*
2. Agriculture, U.S.D.o.A (2011). *What is organic? U.S. Department of Agriculture.*
3. Agriculture, U.S.D.o.A (2016). *The National Organic Program. USDA Agricultural Marketing Service: Washington.*
4. Boström, M., & Klintman, M. (2011). *Eco-standards, product labelling and green consumerism.* Basingstoke: Palgrave Macmillan.
5. Centre, I.T., (2011) *China Organic Product Certification Program*, C.O.P. Certification, Editor., International Trade Centre: Nanjing.
6. Chapagain, T., Riseman, A., & Yamaji, E. (2011). Assessment of system of rice intensification (SRI) and conventional practices under organic and inorganic management in Japan. *Rice Science*, 18(4), 311-320. doi:10.1016/s1672-6308(12)60010-9
7. Ciccicarese, L., & Silli, V. (2016). The role of organic farming for food security: Local nexus with a global view. *Future of food, Journal on Food, Agriculture and Society*, 4(1), 56-67.
8. CORAA (2017) Organic guarantee system for Cambodia.; Available from: <http://www.coraa-cambodia.org/about-us/>.
9. D.o.S. (2015). Press Release: Selected agricultural indicators 2015. Retrieved from <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=bnR4ZFJnbXVOQmt6TDhNNmh3M0Y5dz09>

10. D.o.S. (2015). Press Release: Supply and utilization accounts selected agricultural commodities, Malaysia 2010-2014. Retrieved from [https://www.dosm.gov.my/v1/index.php?r=column/cthem&menu\\_id=Z0VTZGU1UHBUT1VJMF1paXRRR0xpdz09&bul\\_id=ZzNBdUIWT2l4NE4xNCt6U2VNC1Q2QT09](https://www.dosm.gov.my/v1/index.php?r=column/cthem&menu_id=Z0VTZGU1UHBUT1VJMF1paXRRR0xpdz09&bul_id=ZzNBdUIWT2l4NE4xNCt6U2VNC1Q2QT09).
11. D.o.S. (n.d.). Malaysia economic statistics - time series 2015. Retrieved from [https://www.dosm.gov.my/v1/index.php?r=column/ctimeseries&menu\\_id=NHJlaGc2Rlg4ZXlGTjh1SU1kaWY5UT09](https://www.dosm.gov.my/v1/index.php?r=column/ctimeseries&menu_id=NHJlaGc2Rlg4ZXlGTjh1SU1kaWY5UT09)
12. Dardak, A. R., Zainol Abidin, A., & Ali, A. (2019). Consumers' perception, consumption, and preference on organic product: Malaysian perspective. *Economic and Technology Management Review*, 4(1), 95-107.
13. Dobermann, A. (2004). A critical assessment of the system of rice intensification (SRI). *Agricultural Systems*, 79(3), 261-281. doi:10.1016/s0308-521x(03)00087-8
14. FELCRA. (2017). FELCRA Profile. Retrieved from <http://www.felcra.com.my/background>
15. Ibrahim, N. & Mook, L.S. (2014). *Factors affecting paddy production under integrated agriculture development area of North Terengganu (IADA KETARA): A case study*. IPICEX (unpublished).
16. IFOAM (2017) Accredited certification bodies, Retrieved from <https://www.ifoam.bio/en/ifoam-accredited-certification-bodies>
17. IFOAM (2017) EU Group: making Europe more organic. Retrieved from <http://www.ifoam-eu.org>
18. Industry, M.o.C., *National Programme for Organic Production*, D.o. Commerce, Editor. 2014, Ministry of Commerce & Industry: New Delhi.
19. K.P.I.A.T (2017) Jamin kualiti hasil pertanian organik. Kementerian Pertanian & Industri Asas Tani Malaysia: Malaysia.
20. M.o.A (2011). National agro-food policy 2011-2020. Ministry of Agriculture and Agro-Based Industry: Putrajaya.
21. M.o.A.(2017). Profile MOA. Retrieved from <http://www.moa.gov.my/en/objektif;jsessionid=724FE73E9AA5CBF92D93DFC8DCAA787A>
22. Mokhtar, N.A. (2013). *Why bother going organic?* The Star Online: Malaysia.
23. Mokhtar, N.A. (2014). *Understanding organic 'labels'*. The Star Online: Malaysia.
24. Othman, S. N., Othman, Z., & Yaacob, N. A. (2016). The value chain of system of rice intensification (SRI) organic rice of rural farms in Kedah. *International Journal of Supply Chain Management*, 5, 111-120.
25. Othman, S. N., Othman, Z., Yaacob, N. A., & Hamid, K. A. (2016). Sustainable rice production and its impact on the rice value chain: A case study of rural paddy farm in Kedah. doi:10.1063/1.4960925
26. Othman, Z. (2012). *Information and communication technology innovation as a tool for promoting sustainable agriculture: a case study of paddy farming in West Malaysia*. Faculty of Science University of Malaya: Kuala Lumpur.
27. Pertanian, J. (2017). *Skim pensijilan organik Malaysia (myORGANIC)*. Kementerian Pertanian dan Industri Asas Tani Malaysia.
28. Pilo, W. (2017, July 21). *SRI farm method introduced in Long Semadoh*. Borneo Post Online. Retrieved from <https://www.theborneopost.com/2017/07/21/sri-farm-method-introduced-in-long-semadoh/>
29. Principles of Organic Agriculture Preamble. (2017). Retrieved from [https://www.ifoam.bio/sites/default/files/poa\\_english\\_web.pdf](https://www.ifoam.bio/sites/default/files/poa_english_web.pdf)

30. Raghavendra, K., Kunnal, L., & Raghavendra, C. (2014). Comparative study of organic and inorganic paddy with reference to yield, market price and returns. *International Research Journal of Agricultural Economics and Statistics*, 5(1), 9-15.
31. Rakotomalala, H.W. (1997). Comparison entre la Riziculture Traditionnelle et le Systeme de Riziculture *Intensive dans La Region de Ranomafana. Science Agronomique*.
32. Seufert, V., Ramankutty, N., & Mayerhofer, T. (2017). What is this thing called organic? – How organic farming is codified in regulations. *Food Policy*, 68, 10-20. doi: 10.1016/j.foodpol.2016.12.009
33. Sheehy, J., et al. (2004). Fantastic yields in the system of rice intensification: Fact or fallacy? *Field Crops Research*, 88(1), 1-8. doi:10.1016/j.fcr.2003.12.006
34. Shiotsu, F., Sakagami, N., Asagi, N., Suprpta, D.N., Agustiani, N., Nitta, Y., & Komatsuzaki, M. (2015). Initiation and dissemination of organic rice cultivation in Bali, Indonesia. *Sustainability*, 7(5):5171-5181.
35. Siwar, C. (1995). *Pengeluaran padi dan beras negara: Beberapa isu dan masalah kelestarian pembangunan*. Pembangunan Pertanian Lestari. Penerbit UKM, Bangi, 190-216.
36. Siwar, C., Idris, N. D., Yasar, M., & Morshed, G. (2014). Issues and challenges facing rice production and food security in the granary areas in the East Coast Economic Region (ECER), Malaysia. *Research Journal of Applied Sciences, Engineering and Technology*, 7(4), 711-722. doi:10.19026/rjaset.7.307
37. Somasundram, C., Razali, Z., & Santhirasegaram, V. (2016). A review on organic food production in Malaysia. *Horticulturae*, 2(3), 12.
38. Suhaimee, S., Ibrahim, I. Z. & Abd Wahab, M. A. M. (2016). *Organic agriculture in Malaysia*. Malaysian Agricultural Research and Development Institute (MARDI). Retrieved from [http://ap.fftc.agnet.org/ap\\_db.php?id=579&print=1](http://ap.fftc.agnet.org/ap_db.php?id=579&print=1)
39. Tiraieyari, N., Hamzah, A., & Samah, B. A. (2014). Organic farming and sustainable agriculture in Malaysia: organic farmers challenges towards adoption. *Asian Social Science*, 10(4), 1-7. doi:10.5539/ass.v10n4p1
40. USDA (2012) *What is Organic?*, U.S.D.o. Agriculture, Editor.
41. USDA. Certifier Locator. (2017). Retrieved from <https://organic.ams.usda.gov/integrity/Certifiers/CertifiersLocationsSearchPage.aspx>.
42. Utusan Online. (2015). Ladang organik bersepadu.
43. Win, H. (2017). Organic agriculture in Thailand. *FFTC Agricultural Policy Articles*. Retrieved from [http://ap.fftc.agnet.org/ap\\_db.php?id=734](http://ap.fftc.agnet.org/ap_db.php?id=734)

## MODERN IMPERATIVES OF PROFESSIONAL ORIENTATION IN ECONOMIC AREAS OF TRAINING AT A REGIONAL UNIVERSITY

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### ABSTRACT

*The specifics of the Russian higher education sector are the acute competition between universities for students under conditions a «demographic pit». Amid the increasing stratification of universities, attractiveness grows for youth the educational programs of "branded" government-supported universities, research (sectoral) universities and federal universities. In these circumstances, it is much more difficult for regional universities, which are predominantly regional labor market-oriented, to attract students. In this context, it is increasingly important to understand the general nature and root causes, sources, driving forces of the vocational guidance of young people conducted at the regional university. The aim of the article is to identify the socio-economic imperatives of vocational orientation in the regional university like a local operator of higher education. The research hypothesis is that university professional orientation provides the basis for using the unique capabilities of regional universities to create competitive advantages for their students by detecting and assessing the anomaly of labor supply and demand in the labor market. The methodology of the study is based on a theoretical analysis of the results of scientific works, which present the basic provisions on professional orientation. The paper analyzes empirical data that characterize the persistent and regular socio-economic relationships that are found in the vocational guidance processes of students in the economic field of training at the regional higher school. Regional educational institutions of higher education are the object of observation, implementing educational programs of the bachelor's degree in the major group of directions "38.00.00 Economy and Management" in Novosibirsk in 2015-2018. Scientific novelty consists in the development of the theoretical and applied imperatives of forming the consumer value of professional orientation in the university: the modern concept of vocational orientation is justified, the terms «triad of vocational orientation» and «consumer value of vocational orientation» are introduced into the managerial circulation, the author interprets the concept of «design of vocational orientation», interpretation its socio-economic content, essence. The theoretical and applied provisions and conclusions of the study allow to identify and forecast favorable opportunities and risks of improving the vocational orientation policy of regional universities, and to improve their image in the market of educational services.*

**Keywords:** *Consumer value of vocational orientation, Professional orientation, Regional university, Students, Vocational orientation, Vocational orientation triad*

### 1. INTRODUCTION

An important system-forming social institution defining the conditions for informed and self-determined professional positioning of young people in the market labor division of system in accordance with the specific educational situation in general and the values adopted in the sphere of vocational educational is the educational institution of higher education - the higher school. The vocational orientation in higher school - is an organic part of the professional orientation of able-bodied persons, in the framework of which the student's personal

understanding of himself as a subject of professional careers takes place (Sotnikova, 2015, p. 102). A consistent professional orientation in the university as a system of equal interaction between students and higher schools is ultimately intended to improve the quality of life and the efficiency of the life orientation of students. At present, the specifics of higher education sector are the acute competition between universities for students amid the increasing stratification of "Russian universities in terms of volume and sources of financial support, with overestimated obligations to raise the salaries of faculty-teaching staff, resulting in a lack of funds for maintenance of the property complex and provision of training process" (Abankina, 2016, pp. 30-58). This increases the appeal for youth the educational programs of "branded" government-supported universities, research (sectoral) universities and federal universities. In these circumstances, it is much more difficult for regional universities, which are predominantly regional labor market-oriented, to attract students. "Meanwhile, regional universities in Russia's higher education system are key universities for both the regions themselves and the country as a whole» (Grinkrug, Tolstoguzov, 2013, pp. 24-25). In this connection, the focus of research interest is the socio-economic imperative development of the vocational orientation in the regional university as a local operator of higher education. The objectives of the study are to adapt the contents of the modern concept of the vocational orientation in a higher school to the realities of time, to structural and functional analysis of the vocational orientation of students in a higher school, to systematize strategic alternatives to vocational orientation from the point of view of universities and students. The hypothesis of research is that the university professional orientation provides the basis for using the unique capabilities of regional universities to create competitive advantages for their students by detecting and assessing the labor market anomaly of supply and demand. Scientific novelty consists in the development of the theoretical and applied imperatives of forming the consumer value of professional orientation in the university. Regional educational institutions of higher education are the object of observation, implementing educational programs of the bachelor's degree in the major group of directions "38.00.00 Economy and Management" in Novosibirsk in 2015-2018. The subject of the study is sustained and regular socio-economic interrelationships, found in students' professional orientation processes in economic areas of study at the Regional Universities. Scientific novelty is the development of the theoretical and applied imperatives of forming the consumer value of the professional orientation in the university. Regional educational institutions of higher education are the object of observation, implementing educational programs of the bachelor's degree in the major group of directions "38.00.00 Economy and Management" in Novosibirsk in 2015-2018. The subject of the study is sustained and regular socio-economic interrelationships, found in students' professional orientation processes in economic areas of study at the Regional Universities.

## **2. SOCIO-ECONOMIC ESSENCE OF PROFESSIONAL ORIENTATION: LITERATURE OVERVIEW**

Professional orientation as research object has been the focus of science for decades. The interest in studying this phenomenon and process, its scope, intensity and causes is not accidental, as it most vividly reflects many important processes of professionalization of able-bodied citizens, which reflect the dynamism of labor market competitiveness. An analysis of the available literature on professional orientation has highlighted three conceptual scheme that reflect the different views of the researchers on the content and essence of the phenomenon and process under consideration. Representatives of the first conceptual scheme believe that professional orientation is a factor in meeting personal labor needs (Reshetnikov, Zubkov, Chistyakova, Zakharov, Gorelov, Sharoshnikov, Pryazhnikov, Pryazhnikova, Odegov, Zhuravlev, Mudrik, Osipov, Nasonova, Krylova, Prushinskii, Zeer, Perdrix, Stauffer, Masdomati, Rossier, Vassoudi, Wheeler, and others).



Meeting personal labor needs is based on "formation of the valuable and semantic core ... of the individual, namely, i.e. the most important things " (Sharonov, 2017, p. 23), relevant to his interests and expected success, as a result of familiarizing himself with the specificity of the chosen profession (Zulunova, 2011, pp. 31-34; Nemtseva, 2004, p. 17; Kong, Chrung, Song, 2012, pp.14-16; Minchington, Thorne, 2012, pp. 14-16; Valitova, Starodubtsev, Gorianova, 2015, pp. 739-747). Supporters of the second conceptual framework the consider the professional orientation as a function of satisfying public (market) need for labour of a certain quality (Shishkina, Levitov, Klimov, Gellershtein, Bekhterev, Platonov, Konstantinovskii, Shubkin, Yakimov, Chernyaikin, Klark, Sarukhanov, Frantsuzova, Valitov, Batyshev, Kovrigin, Solov'ev, Gorianova, Starodubtsev, Valitova et al.). Professional orientation is presented as a system of rules and norms "directed to take into account the need for the optimal distribution of labor resources for the benefit of society" (Pryazhnikov, 2002, p. 34), that promotes "opporten involvement in public production, rational placement, efficient use and save to work" (Sotnikov, 2016, p. 103), "training personnel for the economics, their rational distribution and consolidation" (Mitina, 2014, p. 11), attracting talents to the economy (Perdrix, Stauffer, Masdomati, Vassoudi, Rossier, 2012, pp. 739-747). Under the third concept (Geleta, Dement'eva, Sokolova, Sotnikova, Kibanov, Nemceva, Kozlova, Minazhetdinova, Chrung, Kong, Minchington, Song, Thorne and others) the professional orientation is presented to the researchers as focused activities for "scientific and practical preparation ... for free and independent choice of profession" (Endal'tsev, 1982, pp. 31-34) "in accordance with the desires, inclinations and the developed abilities and the needs of their future specialty" (Vuorinen, 2013, pp. 24-33), as "a system of forms, methods and means of influence on the person, based on the recording and development of personal abilities and qualities necessary for successful professional activity" (Sotnikova, 2014, pp. 60-65), as "a step-by-step decision-making process by which the individual creates a balance between his interests and propensity and the needs of the division of labor system in society" (Chistyakova, 2007, p. 32), "by which increases the personality priority, responsibility for reasonableness and the results of decisions increase" (Apostolov, 2011, p. 21), choosing the direction of professional competence development (Ford, 2011, pp. 76-85) and employer brand (Kong, Chrung, Song, 2012, pp.14-16). In other words, in this context, professional orientation is a different type of activity of the subject, allowing implement for the personality choice of a profession in the system of division of labor. So, professional orientation has triad structure a "factor – function - activity", the form of the manifestation of which is "the personal need for labor - the public (market) needs for labor - the choice of profession". In other words, professional orientation be an individually informed choice of profession, reflecting the resolution of the conflict between personal and public (market) needs in professional labor. It is a choice of a significant profession for employable individual based on a clear understanding of his needs, interests, personal properties and talents, and a public (market) need for work.

### **3. VOCATIONAL ORIENTATION OF STUDENTS IN HIGHER EDUCATION: CONTEMPORARY CONCEPT**

Professional orientation in higher school - is an activity aimed at personal understanding of the students their self as a subject of professional careers within a certain educational program. Students of higher school as an object of university professional orientation are heterogeneous, they differ in the degree of personal comprehension of themselves as a subject of realization of the guaranteed right to free choice of educational program, i.e. coefficient of professional orientation. Coefficient of professional orientation of the student  $K_{pr}$  — this is an indicator of self-understanding of the individual in professional activity, reflecting the value-semantic vision of the professional community, in which it will be included in the future. Coefficient of professional orientation of the student determines the interest and focus of the student to form

their competitive advantage in the labor market, arrange a deep understanding and satisfaction of their needs and demands of a certain segment of the professional labor market. Coefficient of professional orientation of the able-bodied individual  $K_{pr}$  is functionally dependent on the personal component  $L$  i. e. depending on the maturity of professionally significant personal qualities, character traits; motivational component  $M$  - the presence of a predisposition to the reproduction of professional qualifications, awareness of its importance; activity component  $A$  - activity in overcoming emergent difficulties, the possibility of use experience in the changed educational and labor situations:



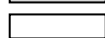
$$K_{pr} = f(L; M; A)$$

It should be noted that each student has a preferred component in its manifestation and development, which determines the ratio of the professional orientation (coefficient of the professional orientation). Depending on the value of the coefficient of professional orientation of the student, the value of it result can be divided into three types, each of which determines the dynamism (stability) and the strategy of choosing an educational program. This is the adaptive professional orientation  $K_{pr} = f(L)$ , adaptive social orientation  $K_{pr} = f(M)$ , and reproductive social-professional orientation  $K_{pr} = f(A)$  (Table 1).

*Table 1: Types of professional orientation of students depending on the consumer value of the educational program (in % to number of respondents)*

Orientation to the needs of the labor market	Orientation on satisfaction of personal need for labor		
	low	medium	high
high	Professionally-adaptive 11,9 %	Subject-creative-professional 9,3%	Personality-productive 3 %
medium	Professional-reproductive 7,3 %	Personality-reproductive 9 %	Subject-creative-social 17,4 %
low	Subeducational 2,8 %	Social-reproductive 15,4 %	Social-adaptive 28,9 %

Comment: <sub>s</sub>

-  adaptive professional orientation;
-  adaptive social orientation;
-  reproductive social-professional orientation.

At the stage of the adaptive professional orientation are 28,5% of respondents. These students are dominated by idealistic ideas about the future profession, which are characterized by a relatively weak, unstable formedness and a strong moral normalization on the part immediate circle, especially the older generations. Their professional propensity is still unstable, based on the knowledge of minor properties of professional activity (such as: relative ease of professional activity, good comfortable working conditions, guarantee of permanent employment, life in the city, good salary, as well as opportunities of working in a women's staff, male staff, mixed staff, working without much effort, making a career, etc.). As a result, there are doubts about the correct choice of profession, the level of achievements, the future of the path of professional development, the extent of the efforts made, the degree of the efforts made, the prospects for continuation or change of activities, the strategies of action after the completion of the educational institution, etc. More than half of respondents (56,7 %) are in the adaptive social orientation phase on educational program. These respondents are characterized by an earlier

development of ambitious aspirations related to the desire to achieve an appropriate material and social status. The awareness of this group of respondents clearly expresses the fact that each profession has a well-defined social status that characterizes formal and informal recognition of its necessity, importance and popularity in the labor market. For them, the prestige of the profession is a reference point that sets the direction of the real choice of the educational program. The reproductive socio-professional guidance in the education program is provided by 14,8 % of respondents. These students are characterized by a well-formed own position with respect to method and means of self-realization in vocational and educational activities. They are characterized by the adoption of the personality raison of professional activity, which includes the development of regulatory mechanisms of activity, communication and creativity. As learning activities evolve and become more complex, the focus of students on future professional activities increases. The development of individual style of professional-educational activity and formation of responsibility for the process of achievement of personal goals without constant external influence takes place. Thus, each stage of a vocational orientation differs in its degree of criticality for purposes (satisfaction of personal or market needs in work) and attributes of vocational orientation (personal, motivational, activity), and hence from character and content of university vocational guidance.

#### **4. IMPERATIVES OF STRATEGIC DESIGN OF PROFESSIONAL ORIENTATION AT A REGIONAL UNIVERSITY**

Currently, most of the regional universities offer the same educational services, and if new popular and prestigious educational programs for young people and their parents appear on the market, they are immediately adapted by other market participants. Competitive advantage in attracting students through traditional means of promoting educational programs (press, television and radio advertising, outdoor advertising, printed and souvenir products, exhibitions and fairs of educational services, open doors days, scientific conferences and seminars, Internet advertising, university website and social networks communities it becomes difficult for universities. The modern economy presents each university with the need to achieve a sustained rate of income growth and to reduce the costs of the education program, i.e., vocational guidance makes sense for a higher school if it can generate an additional value. (Kong, Chrung, Song, 2012, pp. 10-11), i.e. leads to its capitalization.

*Figure following on the next page*

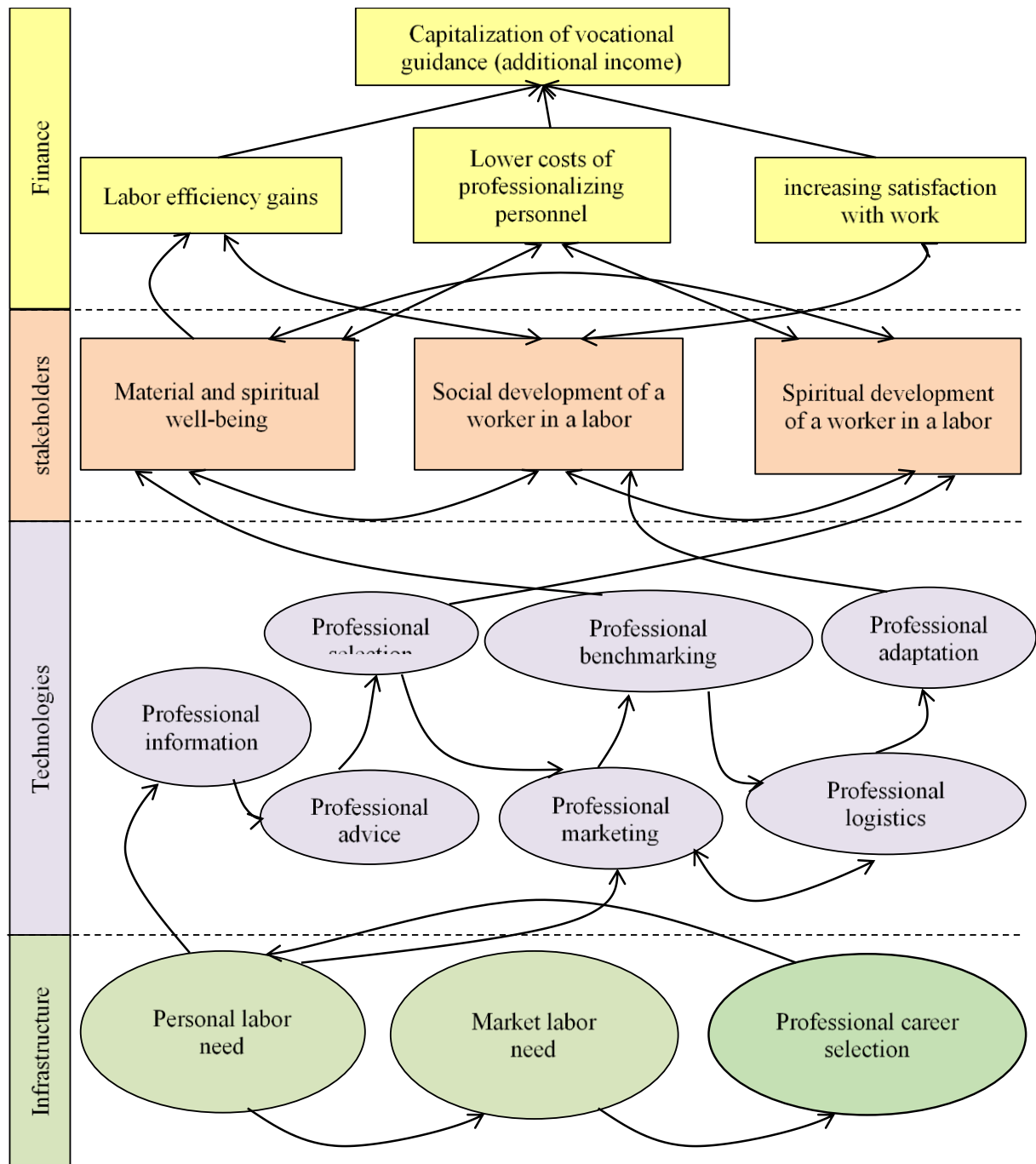


Figure 1: Graphical strategic design of professional orientation (developed by authors)

This is possible if the regional university can in a timely manner form students deep understanding of the consumer value of the educational program of higher education, considering personal and social (market) needs for professional labor. The consumer value of the educational program - these are the advantages for the professional positioning of students in the market system of division of labor, which arise in the process of forming competence of a certain level and volume in studying of the education program of higher education. Thus, the modern university professional orientation - it is a process of purposeful and organized acquisition of the university a holistic and sustainable skill to determine the needs of enrollee and students in a timely manner in the position of the labor market in order to satisfy them by

offering a certain educational program, exceeding the expectations of the labor market players, with maximum benefit. In other words, the economic purpose of professional orientation is not the profitability of the activity of the regional university and its share in the educational services market, but the consumer value of the educational program. It is precisely the proposal of the consumer value of professional orientation to the target group of labor market actors - this is the premise that intangible assets of professional orientation produce financially results (income). At that, there is no better (one and only right) impacts of vocational orientation with purpose to create the consumer value of the education program: the subject of the labor market, including the student, can achieve significant benefits due to varying technologies of professional orientation. Professional orientation as a targeted activity has an infinite number of decisions related to the formation of the consumer value of an educational program, where some solutions are more correct than others. The correctness of solution depends on the nested conceptual meaning. In this regard, the importance of building a strategic design of vocational orientation is growing. The strategic design of professional orientation - is the project planning of the capitalization of vocational orientation processes based on the system of equal interaction of labor market actors (Sotnikov, 2016, pp. 56-62) through regular and comprehensive monitoring and analysis of trends in consumer satisfaction and competitiveness of these actors. This design creates a causal set of professional orientation objectives and indicators for achieving these goals, initiatives, resources, time frames and liability, it allows us to understand how to achieve the strategic objectives of creating a stable system of views, beliefs, principles, qualities of employable people and their groups, which motivates them to choose a career (Sotnikov, 2015, pp. 126-135). This design clearly illustrates the focus and possibilities of focusing on such forward-looking directions of professional orientations as infrastructure, technology, stakeholding and finance. (Figure 1).

## 5. CONSLUSION

Thus, the modern concept of university vocational orientation represents a general ideology of formation of the consumer value of the educational program, which is designed to prepare students constantly for the changing socio-economic reality. Professional orientation is intended to become a full-fledged regulator of lifelong learning (LLL) by increasing the socio-economic efficiency of informed choice of the educational program, of the professional future of employable person, in accordance with their needs in work, abilities, motives, preferences and the needs of labor market actors. The imperatives of the strategic design of professional orientation allow, first of all, to guarantee a professional approach to investing in professional orientation at the regional university, the choice of a way of self-realization of long-term competitive advantages of students in the labor market. Secondly, consolidate the vision of a strategic personal-professional position of a student in the labor market and create the basis for its competitiveness in the labor market. Third, create the conditions for the transition from "responsibility to choose a profession" to responsibility for a professional career.

## LITERATURE:

1. Abankina, I. V. (2016). Lovushki differentsiatsii v finansirovanii rossiiskikh vuzov [Differentiation Traps in Russian Higher Education Financing]. Aktual'nye problemy ehkonomiki i prava [Current economic and legal challenges]. Vol. 10. No 2. Pp. 38-58. (Russian)
2. Apostolov, O.P. (2011) Professional'naya orientatsiya v Rossii (opyt, problemy, perspektivy) [Professional orientation in Russia (experience, problems, prospects)]. Moscow: Izdatel' IP Tatarinov Mikhail Vasil'evich (Publ.). 184 p. (Russian)

3. Chistyakova, S. N. (2007). Pedagogicheskoe soprovozhdenie samoopredeleniya shkol'nikov: metod. posob. [Teaching of self-determination of schoolchildren: methodological manual]. Moscow: Izdatel'skii tsentr «Akademiya» (Publ.). 128 p. (Russian)
4. Endal'tsev, V. S. (1982). Vybory professii. Sotsial'nye, ekonomicheskie i pedagogicheskie faktory [Choosing a profession. Social, economic and pedagogical factors]. Kiev-Odessa: Vishcha shkola. Publ. (Russian)
5. Ford, S.A. (2011). Dynamics of earning capacity. S.A. Ford. Greater Louisville Metro Attorney at Law Magazine. Pp. 10-11.
6. Grinkrug, L.S., Tolstoguzov, P.N. (2013). Regional'nyi universitet i vuzovskaya reforma [Regional university and university reform]. Akkreditatsiya v obrazovanii [Accreditation in education]. No 1 (61). Pp. 24-25. (Russian)
7. Kong, H., Chrung, C., Song, H. (2012). From hotel career management to employees' career satisfaction. The mediating effect of career competency. International Journal of Hospitality management. No 31. Pp. 76-85.
8. Minchington, B., Thorne, K. (2007). Measuring the effectiveness of your employer brand. Human Resources. October-November. Pp. 14-16.
9. Mitina, N. A. (2014). Sistema professional'noi orientatsii molodezhi na pedagogicheskie spetsial'nosti [System of vocational orientation of young people on pedagogical specialties]. Molodoi uchenyi [Young scientist]. No 4. Pp. 1037-1040. (Russian)
10. Nemtseva, U. V. (2004). Organizatsionno-ekonomicheskie osnovy upravleniya professional'noi orientatsiei molodezhi v rynochnykh usloviyakh (na primere G. Novosibirsk) [Organization-economic framework for managing the professional orientation of young people in market conditions (based on the example of Novosibirsk)]. Avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata ekonomicheskikh nauk [Autoabstract of dissertation to seek a degree of a candidate of economic sciences]. 20 p. (Russian)
11. Perdrix, S., Stauffer, S., Masdomati, J., Vassoudi, K., Rossier, J. (2012). Effectiveness of career counseling: a one-year follow-up. Journal of Vocational Behavior. No 80. Pp. 565-578.
12. Pryazhnikov, N. S. (2002). Metody aktivizatsii professional'nogo i lichnostnogo samoopredeleniya [Methods of intensifying professional and personal self-determination]. Moscow: NPO «ModehK» (Publ.). 392 p. (Russian)
13. Sarukhanov, E.H.R., Sotnikova, S.I. (1991). Problemy upravleniya professional'noi orientatsiei molodezhi na professii vysshei kvalifikatsii [Problems of managing youth professional orientation in the high qualification professions]. Leningrad. (Russian)
14. Sharonov, A. O. (2017). O kontseptsii life-long learning, rabote s soboi i vneshnim miroM, lichnoi effektivnosti [About the concept of life-long learning, working with itself and the outside world, personal efficiency]. From <http://hr-elearning.ru/lekciya-prezidentskolkovo-life-long-vuca-effectivnost>. (Russian)
15. Shchekin, G. V. (2000). Sotsial'naya teoriya i kadrovaya politika [Social theory and personnel policy]. Kiev: MAUP (Publ.). 576 p. (Russian)
16. Sotnikov, N.Z. (2015). Delovaya kar'era kak metamodel' upravleniya konkurentosposobnost'yu naemnogo personala [Business career as a meta-model for managing the competitiveness of hired personnel]. Vestnik NGUEU [Newsletter NSUEM]. No 1. Pp. 100-107. (Russian)
17. Sotnikov, N.Z. (2016). Kontseptual'nye osnovy strategicheskogo analiza delovoi kar'ery personala [Conceptual frameworks for strategic career analysis of staff]. Menedzhment v Rossii i za rubezhom [Management in Russia and abroad]. No 4. Pp. 126-135. (Russian)

18. Sotnikov, N.Z. (2016). Metodicheskii podkhod k formalizatsii strategii delovoi kar'ery na osnove sistemy sbalansirovannykh pokazatelei [Methodological approach to the formalization of a business career strategy based on a balanced scorecard system]. Vol. 5. No 4. Pp. 56-62. (Russian)
19. Sotnikova, S.I. (2001). Upravlenie kar'eroi: Uchebnoe posobie [Career Management: Tutorial]. Moscow: INFRA-M (Publ.). 408 p. (Russian)
20. Sotnikova, S.I. (2014). Strategicheskoe upravlenie kar'eroi kak instrument dostizheniya konkurentosposobnosti personala [Strategic career management as a tool for achieving staff competitiveness]. Vestnik Omskogo universiteta [University of Omsk Vestnik]. No 1. Pp. 60-65. (Russian)
21. Sotnikova, S.I. (2015). Professional'naya kar'era rabotnika: aktual'nost', sushchnost', vidy, determinanty issledovaniya [Professional careers worker: relevance, substance, types, determinants of research]. Vestnik Omskogo universiteta [University of Omsk Vestnik]. No 1. Pp. 100-107. (Russian)
22. Sotnikova, S.I. (2012). Professional'naya orientatsiya molodezhi kak instrument obespecheniya konkurentosposobnosti promyshlennykh predpriyatii [Youth professional orientation as a tool to ensure the competitiveness of industrial enterprises]. Vestnik NGUEU [Newsletter NSUEM]. No 4-2. Pp. 14-22. (Russian)
23. Valitova, E., Starodubtsev, V., Gorianova, L. (2015.). Formative personalization of student's self-determination and employability. Procedia Social and Behavioral Sciences. Pp. 739 –747.
24. Vuorinen, R. (2013). Professional'naya orientatsiya kak instrument vzaimosvyazi obrazovaniya i rynka truda v Rossii [Professional orientation as an instrument of interconnection between education and the labor market in Russia]. Vestnik TVGU [TvGU Newsletter]. No 3. Pp. 24-33. (Russian)
25. Zulunova, G. V. (2011). Proforientatsionnaya rabota v shkole [Professional guidance at school]. No 5. Pp. 31-34. (Russian)

## DETERMINANTS OF ONLINE BOOKING TRIALS FOR TRAVEL RELATED PRODUCTS: A PLS-SEM APPROACH

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### ABSTRACT

*The exploration goes for discovering Malaysian clients' recognition about internet booking and which factors propelling them to attempt this online business demonstrate. As the outcome, organizations offering web based booking administrations for travel related items can comprehend their clients better and enhance their client administration and experience. The overview has been created in view of concentrated survey of written works identified with internet booking; web based shopping, reception speculations, customer practices. The polls have been appropriated and the information has been prepared utilizing SEM-PLS to decide the connection between factors that impact Malaysian aim to attempt web based booking. Therefore, this examination is required to have critical commitment in both hypothesis and reasonableness. As far as hypothesis, this exploration effectively provided the model that exhibit the expectation to attempt internet booking which is seldom talked about in past inquires about. In term of reasonableness, this exploration gives general bits of knowledge of Malaysian online booker trademark for online travel organization working in Malaysia keeping in mind the end goal to enhance their business execution.*

**Keywords:** *Online Booking, User Interface, E-WOM, Payment Method, Promotion*

### 1. INTRODUCTION

There are numerous applications for web based business in the business these days. Hung et al (2011) recommend that web based business brings the new open door for set out offices to grow their business in light of the fact that the explorers tend to utilize web for examining data of their excursions. Web based booking has turned out to be increasingly well known strategy to offer travel items and is broadly acknowledged in created nations. Despite the fact that this idea has been presented in Malaysia for as far back as couple of years, there are half of air tickets is sold online right now. There are different inquires about led concentrating on the elements impacting individuals goal to receive internet booking. However, there are very few looks into concentrate on the expectation to attempt web based booking. This aim to attempt is essential since individuals prefer to attempt in the first place, at that point they will assess their trial encounter, thus, embrace or reject web based booking innovation. In this way, this exploration stresses on discovering factors that impact individuals aim to attempt web based booking. Then again, there is a critical number of web clients have changed to cell phones and tablets as their real web association gadgets. Therefore, this exploration is likewise concentrate on discovering the contrasts between each kind of web association gadgets on web based booking trial choice. In rundown, internet business advancement on the planet is growing quickly since the most recent 5 years. Web based business has numerous ramifications in various plans of action. In tourism industry, internet business has made awesome open doors for make trip organizations to achieve their potential clients to build their deals.



Thus, there will be a huge number of explorers book their trek online as opposed to booking from conventional travel organizations. The fame of web based booking is not occurring in North America and Europe as it were. There is a centrality development of this innovation in Pacific Asia nations, for example, China, Japan, Singapore and even some creating nations in South East Asia, for example, Malaysia, Indonesia, Malaysia, Thailand, and Philippines. In ASEAN locale, air tickets and inn rooms are well known items sold on the web, and Malaysia has 25% of online customers has picked web based reserving for inn rooms and air tickets for their excursion. Despite the fact that there is an extensive number of web clients in Malaysia have changed to web based booking, nonetheless, there are 75% of regardless them pick customary booking technique. The following piece of this part will examine about the web based booking issues in Malaysia. Subsequently, the exploration goes for discovering Malaysian clients' recognition about internet booking and which factors propelling them to attempt this online business demonstrate. As the outcome, organizations offering web based booking administrations for travel related items can comprehend their clients better and enhance their client administration and experience. The overview has been created in view of concentrated survey of written works identified with internet booking; web based shopping, reception speculations, customer practices. The polls have been appropriated and the information has been prepared utilizing SEM-PLS to decide the connection between factors that impact Malaysian aim to attempt web based booking. Therefore, this examination is required to have critical commitment in both hypothesis and reasonableness. As far as hypothesis, this exploration effectively provided the model that exhibit the expectation to attempt internet booking which is seldom talked about in past inquires about. In term of reasonableness, this exploration gives general bits of knowledge of Malaysian online booker trademark for online travel organization working in Malaysia keeping in mind the end goal to enhance their business execution.

## 2. LITERATURE REVIEW

This process is developed based on the innovation – decision process provided by Rogers (1983). The “Awareness” stage (1) of this model is equivalent with knowledge stage in Rogers' model due to they all represent awareness knowledge suggested by Rogers (1983). “Interest” (2) and “Evaluation” (3) is suggested to replace Rogers' “Persuasion stage”. The “interest” can be related to relative advantages since they offer many opportunities that may create the attitude towards the innovation (Rogers, 1983). Vrechopoulos (2001) suggests that Rogers' “Decision” stage should be split into 3 categories as “Rejection”, “Purchase” and “Trial”. This is sufficient because the users might try the product if they have trialability. It is suggested that products that offer trialability are easier to be adopted (Rogers, 1983). Stage (5), (6), and (7) are got the agreement between Rogers (1983) and Vrechopoulos (2001). In synopsis, this exploration concentrates on discovering which factor that impact Malaysian online customers to attempt internet reserving for voyaging, consequently, the learning stage, influence stage and choice stage are the real focus for researching this issue. As the objective populace is online customers so they may know about web based business. Subsequently, this examination will concentrate on the relative advantage, compatibility, complexity, triability, and observability.

### 2.1. Factors Influencing the Trial of Online Booking

The escalated survey of writing has been directed after dissemination of advancement hypothesis and research led by VECITA (2015) with a specific end goal to discover the elements that impacting Malaysian choice to attempt internet booking as following:

- People influence: According to Rogers (1983), individuals' development appropriation has three sorts: discretionary advancement choice, aggregate development choice, and specialist development choice. Among these sorts, aggregate advancement alludes to the way a man

embraces or rejects a development depending on the consensus among individuals from a framework. These kinds of individuals are characterized as collectivist and they are for the most part from Asian nations (Sun et al, 2004; Hisotugi, n.d.). Malaysia is an Asian nation so this issue ought to be considered in this exploration.

- **Promotion:** Rogers (1983) states that advancement can accelerate the selection of a development. There are numerous advancement procedures that can accelerate dissemination of development, for example, spreading the learning and the relative points of interest of the development (Rogers, 1983); which is web based booking for this situation. Then again, Reid (2009) additionally recommends diverse methods, for example, vouchers, pamphlets, rebates, client reliability program, referral program, and sweepstakes as productive devices for web based booking. Likewise, Leung et al (2015) recommends that informal organizations are a standout amongst the most capable instrument to convey these advancements to clients these days.
- **Payment Method:** VECITA (2013) brings up that 37% of Malaysian web clients would prefer not to convey internet business because of the installment strategy. IFC (2014) affirms that 75% of business studied in Malaysia is not inspired by online installment because of the low appropriation of Malaysian client. Phi (2015) shows that there are just 2.43 million MasterCard clients in Malaysia back to 2013. The number is very low contrasted with different nations on the planet. As charge card is the key point for online installment strategy, the low number of Visa clients clarifies the low rate of online installment appropriation in Malaysia.
- **Vendor's reputation:** According to VECITA (2014), Malaysian online purchasers have a tendency to pick online merchants that have great notoriety to evade dangers. As specified above, there are many tricks and fakes occurred in Malaysia identified with online installment. Indeed, even exceedingly notoriety organizations which are controlled by the legislature, for example, Malaysia Airlines, Vietcombank are likewise got issue with online security (Sy et al, 2016; Phuong, 2016). Therefore, a large portion of Malaysian online seller tend to utilize COD installment technique to stay away from the security dangers, in any case, that is not a long haul arrangement (PCWORLD Malaysia, 2015). Keeping in mind the end goal to make web based business take off, building the notoriety for online sellers is more imperative.

### 3. METHODOLOGY

This exploration gathers both primary and secondary data. The optional information is gathered by means of course readings, research journals, text books, online magazines and newspapers from licensed sources. The essential information is gathered utilizing survey disseminated on the web. The poll is created in light of the escalated survey of writings. There are 50 surveys circulated to members for pilot testing. The dependability of pilot testing has been figured utilizing Cronbach's Alpha technique, and the Alpha outcome is over 0.7 which is worthy. After pilot testing, 600 surveys have been conveyed and 380 gathered back. After information screening process, there are 326 cases is utilized for breaking down the aftereffect of this exploration.

### 4. RESULTS

Hypothesis testing is applied using SEM-PLS conducted via Smart PLS version 3. The structural equation model shows the result that some hypothesis is supported and some are not supported as following table:

*Table following on the next page*

Table 1: Hypothesis testing SEM-PLS

Hypothesis	Direct Effect Path	Weigh	P Values	Result
H1	PI → INTT	.247	.000	Supported
H2	PRO → INTT	.249	.000	Supported
H3	PAY → INTT	.264	.047	Supported
H4	REP → INTT	.184	.000	Supported

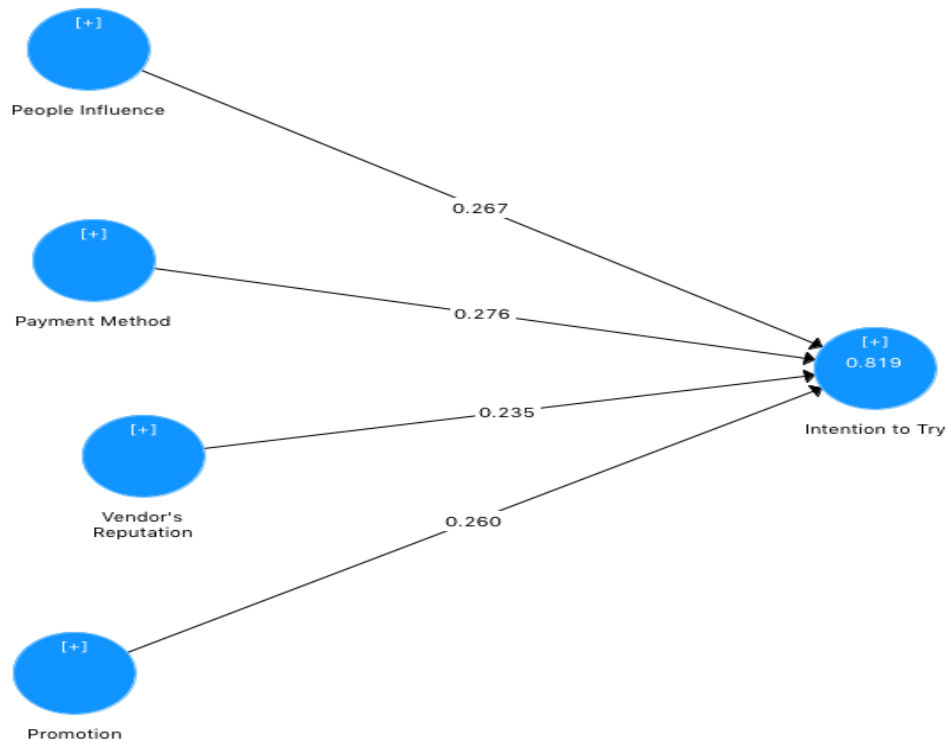


Figure 1: Structural Equation Model

The table above shows that only hypothesis H4 and H5 is not supported due to  $p > 0.005$ . Among those other hypothesis, people influence, payment method and frequency of past trying has strongest effect on intention to try online booking. On the other hand, promotion, booking device and vendor's reputation also effects on intention to try online booking. As a result, the complete variable relationships model is illustrated in following figure. A few SEM-PLS test has been directed in view of the auxiliary condition show with a specific end goal to discover the distinctions from individuals who are utilizing diverse booking gadgets, for example, PC, Laptop, Smart Phones, and Tablets has been led. The aftereffect of this test is as following table:

Table 2: Factors influence intention to try online booking

	PC	Smart Phones	Tablets	Laptop
PAY → INTT	.281	.229	.495	.340
PI → INTT	.218	.297	.275	.161
PRO → INTT	.271	.246	.296	.313
REP → INTT	.270	.261	.090	.197

The table above demonstrates the contrasts between various booking devices and the client aim to attempt web based booking. For PC clients, the four elements are very adjust going from 0.218 to 0.281. If there should arise an occurrence of advanced smart phone clients, people influence is the most imperative factors that inspire this gathering to attempt web based booking.

There is a noteworthy diverse in the gathering of tablet clients, they are considered about payment method twofold than different gatherings and they are not by any means affected by merchant's vendors' reputation. Finally, the gathering of portable PC clients is considered generally about payment method and promotion.

## 5. DISCUSSION

In the previous couple of years, web based booking has turned out to be increasingly famous in tourism industry. There are many investigates have been led attempting to discover which factor affecting individuals to embrace this new innovation. The aftereffect of this examination demonstrates that payment method has the most astounding impact on Malaysian choice to attempt web based booking. This can be clarified by a great deal of embarrassments identified with online installment as of late in Malaysia. Indeed, even some high notoriety enterprise keeps running by the administration, for example, Malaysia Airlines, CIMB, Maybank got issue with online installment and information protection (Phi, 2015; Sy et al, 2016). People influence has the second most grounded impact on individuals' goal to attempt web based booking. Malaysian web users are additionally worry about payment method. Moreover, they are likewise affected by the promotion, and seller's reputation. This outcome mirrors the discoveries from Hisotugi (n.d) that Asian individuals are less demanding impacted by their companions, family and even entire outsiders. Promotion likewise assumes an imperative part to persuade individuals to attempt a development (Rogers, 1983). The aftereffect of this examination calls attention to a few gatherings of web clients are emphatically affected by promotional strategies. It is plausible on the grounds that a considerable measure of aircrafts working in Malaysia has utilize this strategy to pull in new clients, for example, Vietjet Air, Jetstar Pacific, Airasia, and so on. Vendors' reputation is likewise a matter of concern, notwithstanding, the vast majority of Malaysian book air tickets online which are significantly appropriated by Malaysia Airlines, Vietjet Air and Jetstar Pacific and every one of them are syndication in this market. Along these lines, this factor ought to have less concern contrasted with different variables. In outline, the outcome from this examination calls attention to factors that impact the goal to attempt web based booking of Malaysian. The most essential components are people influence and payment method. Subsequently, business can depend on this exploration to plot some appropriate systems keeping in mind the end goal to pull in more individuals to attempt web based booking since the e-commerce in Malaysia is developing quickly. It is recommended that future researchers may inquire about the effect electronic verbal (EWOM). On the other hand, it is endorsed future researcher to coordinate further research related to this field in perspective of more ebb and flow theories, for instance, Theory of Trying (Bagozzi et al, 1990). In addition, the association between online shopping and online booking should be investigated. It is recommended that the association between restricted time systems from electronic shopping may incite desire to endeavor online booking should be investigated. Finally, this research show should be upgraded later on by including more factors and theory. Besides, testing the association between people affects, progression, UI, booking contraptions, trader's reputation and repeat of past endeavoring is similarly exceedingly proposed.

## LITERATURE:

1. Adam P. Vrechopoulos. George J. Siomkos Georgios I. Doukidis, (2001), "Internet shopping adoption by Greek consumers", *European Journal of Innovation Management*, Vol. 4 Iss 3 pp. 142 - 153
2. Afthanohan W. (2013). A Comparison Of Partial Least Square Structural Equation Modeling (PLS-SEM) and Covariance Based Structural Equation Modeling (CB-SEM) for Confirmatory Factor Analysis. *International Journal of Engineering Science and Innovative Technology (IJESIT)* Volume 2, Issue 5, September 2013

3. Ajzen, I., & Fishbein, M. (1988). Theory of reasoned action-Theory of planned behavior. *University of South Florida*.
4. Al-Gahtani, S., & King, M. (1999). Attitudes, satisfaction and usage: Factors contributing to each in the acceptance of information technology. *Behaviour & Information Technology*, 18(4), 277–97.
5. Alghamdi R. A. (2012). Diffusion of adoption of online retailing in Saudi Arabia. Ph.D thesis, Griffith University.
6. Alreck P. L., Settle R. B. (1995). The survey research handbook. (2 ed.) USA: McGraw-Hill
7. Alsughayir, A., & Albarq, A. N. (2013). Examining a theory of reasoned action (TRA) in internet banking using SEM among Saudi consumer. *International Journal of Marketing Practices*, 1(1), 16-30.
8. Andrew Duffy, (2015), "Friends and fellow travelers: comparative influence of review sites and friends on hotel choice", *Journal of Hospitality and Tourism Technology*, Vol. 6 Iss 2 pp. 127 - 144
9. Bagozzi, R., et al., 2002. *The Social Psychology of Consumer Behaviour*. Buckingham: Open University Press.
10. Bagozzi, R., Yi, Y. (1988). On the evaluation of structural equation model. *Academy of Marketing Science*, 16(1), 74-94.
11. Calin Gurau Ashok Ranchhod, (2009), "Consumer privacy issues in mobile commerce: a comparative study of British, French and Romanian consumers", *Journal of Consumer Marketing*, Vol. 26 Iss 7 pp. 496 - 507
12. Chen, C-C., & Chang, S-C. (2005). Discussion on the behavior intention model of consumer online shopping. *Journal of Business and Management*, 11 (1), 41- 57.
13. Chuchinprakarn, S. (2005). Application of the Theory of Reasoned Action to On-line Shopping. *Knowledge Center E-paper Bangkok University*, 1-7.
14. Chuttur, M. Y. (2009). Overview of the technology acceptance model: Origins, developments and future directions. *Working Papers on Information Systems*, 9(37), 9-37.
15. Cohen, W. and Levinthal, D. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35, pp. 128-52.
16. Davis, F., Bagozzi, R., & Warshaw, P. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–1003.
17. Dileep K. M., Harvi S., Normala S. G. (2015). Malaysian consumer research: Does computer literacy affirmative towards e-commerce activities?. *Journal of economics and behavioral studies*. Vol 7., No. 1, February 2015. ISSN: 2220-6140.
18. Dopfer, K., Foster, J. and Potts, J. (2004), "Micro-meso-macro", *Journal of Evolutionary Economics*, Vol. 14, pp. 263-79.
19. Efthymios Constantinides, (2004), "Influencing the online consumer's behavior: the Web experience", *Internet Research*, Vol. 14 Iss 2 pp. 111 - 126
20. Gajendra Sharma Wang Lijuan , (2015), "The effects of online service quality of e-commerce Websites on user satisfaction", *The Electronic Library*, Vol. 33 Iss 3 pp. 468 - 485
21. Hofstede, G. (1980), *Culture's Consequence: International Differences in Work-Related Values*, Sage Publications, Boston, MA.
22. Hui-Chun Huang Ya-Ting Chang Che-Yi Yeh Chung-Wei Liao , (2014), "Promote the price promotion", *International Journal of Contemporary Hospitality Management*, Vol. 26 Iss 7 pp. 1065 - 1082
23. Hung Y. C., Yang Y. L., Yang H. E., Chuang Y. H. (2011). Factors affecting the adoption of e-commerce for the tourism industry in Taiwan. *Asia Pacific Journal of Tourism Research*, Vol. 16, No. 1, February, 2012. ISSN: 1094 – 1665

24. Intentions model: the role of intention to search. *Journal of Retailing*, 77, 397- 416.
25. Karahanna, E., Agarwal, R., & Angst, C. (2006). Reconceptualizing compatibility beliefs in technology acceptance research. *MIS Quarterly*, 30(4), 781–804.
26. Kelley O'Reilly Sherry Marx, (2011), "How young, technical consumers assess online WOM credibility", *Qualitative Market Research: An International Journal*, Vol. 14 Iss 4 pp. 330 - 359
27. Kline, R.B. (2005), *Principles and Practice of Structural Equation Modeling* (2nd Edition ed.). New York: The Guilford Press.
28. Kotler P., Keller K. (2012). *Marketing Management* (14<sup>th</sup> Edt.). Prentice hall. USA.
29. Krlshnamacharyulu C.S.G., Ramakrishnan L., (2009). *Business communication*. Himalaya Publishing House.
30. Loredana Di Pietro Francesca Di Virgilio Eleonora Pantano, (2012), "Social network for the choice of tourist destination: attitude and behavioural intention", *Journal of Hospitality and Tourism Technology*, Vol. 3 Iss 1 pp. 60 - 76
31. Luo, M. M., Remus, W., & Sheldon, P. J. *Technology Acceptance of a Travel Website: An Exploratory Study*.
32. Mei Cao Qingyu Zhang John Seydel, (2005), "B2C e-commerce web site quality: an empirical examination", *Industrial Management & Data Systems*, Vol. 105 Iss 5 pp. 645 - 661
33. Min Li Z.Y. Dong Xi Chen, (2012), "Factors influencing consumption experience of mobile commerce", *Internet Research*, Vol. 22 Iss 2 pp. 120 - 141
34. Ming-Chuan Pan Chih-Ying Kuo Ching-Ti Pan Wei Tu, (2013), "Antecedent of purchase intention: online seller reputation, product category and surcharge", *Internet Research*, Vol. 23 Iss 4 pp. 507 - 522
35. Mohamed Khalifa Kathy Ning Shen, (2008), "Explaining the adoption of transactional B2C mobile commerce", *Journal of Enterprise Information Management*, Vol. 21 Iss 2 pp. 110 - 124
36. Rama Yelkur Maria Manuela Nêveda DaCosta, (2001), "Differential pricing and segmentation on the Internet: the case of hotels", *Management Decision*, Vol. 39 Iss 4 pp. 252 - 262
37. Reid R., Bojanic D. (2009). *Hospitality Marketing Management* (5<sup>th</sup> Edt.). John Wiley & Sons Inc. USA.
38. Rogers E. M. (1983). *Diffusion of Innovation*. 3<sup>rd</sup> Edt. The Free Press. USA
39. Sahin I., (2006). The detail review of Rogers' diffusion of innovation theory and educational technology - related study based on Rogers' Theory. *The Turkish Online Journal of Educational Technology – TOJET*, Vol. 5, Is. 2, Article 3. ISSN: 1303 – 6521.
40. Sekaran U., Bougie R. (2014). *Research Methods for Business*. 6<sup>th</sup> Edition. Wiley.
41. Sevgi Özkan Gayani Bindusara Ray Hackney, (2010), "Facilitating the adoption of e-payment systems: theoretical constructs and empirical analysis", *Journal of Enterprise Information Management*, Vol. 23 Iss 3 pp. 305 - 325
42. Shim, S., Eastlick, M.A., Lotz, S.L., & Warrington, P. (2001). An online prepurchase
43. Solomon, M., *et al.*, 2006. *Consumer Behaviour: A European Perspective*. 3rd ed. Harlow: Prentice Hall.
44. Stephen J. Gould, Franklin S. Houston, and JoNel Mundt (1997) , "Failing to Try to Consume: a Reversal of the Usual Consumer Research Perspective", in *NA - Advances in Consumer Research Volume 24*, eds. Merrie Brucks and Deborah J. MacInnis, Provo, UT : Association for Consumer Research, Pages: 211-216.
45. Talukder M. (2014). *Managing innovation adoption*. Gower. United Kingdom.

46. Tao Sun Marty Horn Dennis Merritt, (2004), "Values and lifestyles of individualists and collectivists: a study on Chinese, Japanese, British and US consumers", *Journal of Consumer Marketing*, Vol. 21 Iss 5 pp. 318 – 331
47. Teo T. H. S., Liu J. (2005). *Consumer trust in e-commerce in USA, Singapore and China*. Omega 35 (2007) 22 – 38. Elsevier Ltd.
48. Timothy J. R., Ashutosh T., (2014). *Social Networks and Restaurant Choice*. Selected Paper prepared for presentation at the 2014 AAEA/EAAE/CAES Joint Symposium "Social Networks, Social Media, and the economics of Food".
49. Toh Tsu Wei Govindan Marthandan Alain Yee-Loong Chong Keng-Boon Ooi Seetharam Arumugam, (2009), "What drives Malaysian m-commerce adoption? An empirical analysis", *Industrial Management & Data Systems*, Vol. 109 Iss 3 pp. 370 - 388
50. Toh, R. S., Raven, P., & DeKay, F. (2011). Selling rooms: Hotels vs. third-party websites. *Cornell Hospitality Quarterly*, 52(2), 181-189.
51. Wilson, H.; Daniel, E. and Davies, I. (2008). The diffusion of e-commerce in UK SMEs. *Journal of Marketing Management*, 24(5-6), pp. 489–516.
52. Wong, K. K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, 24(1), 1-32.
53. Xi Yu Leung Seyhmus Baloglu , (2015), "Hotel Facebook marketing: an integrated model", *Worldwide Hospitality and Tourism Themes*, Vol. 7 Iss 3 pp. 266 - 282
54. Xi Yu Leung Seyhmus Baloglu, (2015), "Hotel Facebook marketing: an integrated model", *Worldwide Hospitality and Tourism Themes*, Vol. 7 Iss 3 pp. 266 - 282
55. Xinyuan (Roy) Zhao Liang Wang Xiao Guo Rob Law, (2015), "The influence of online reviews to online hotel booking intentions ", *International Journal of Contemporary Hospitality Management*, Vol. 27 Iss 6 pp. 1343 - 1364
56. Yang Y., Wang C. C., Lai M. C. (2012). Using bibliometric analysis to explore research trend of electronic word-of-mouth from 1999 to 2011. *International Journal of Innovation, Management and Technology*, Vol. 3, No. 4, August 2012.
57. Yin, R. K. (1994) *Case Study Research: Design and Methods*. Sage.
58. Yu-Hui Chen Stuart Barnes, (2007), "Initial trust and online buyer behaviour", *Industrial Management & Data Systems*, Vol. 107 Iss 1 pp. 21 - 36
59. Zikmund W. G., Babin B. J., Carr J. C. (2009). *Business Research Methods*. 8<sup>th</sup> Edition. Cengage Learning.

## THREE LEVELS OF HEALTH PRESERVATION: A SOCIOLOGICAL PERSPECTIVE

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### ABSTRACT

*The article describes the results of an empirical study of the health preserving practices for mega cities residents. The problem of health preservation in foreign and domestic sociology is studied at the macro and micro social levels. The practice of health preservation being collective in its nature is developed at three levels – institutional, interpersonal and individual. The institutional level is represented by a variety of collective practices, including medical, social, political, economic, legal, scientific, cultural. The interpersonal level involves doctor-patient interaction. The practice of health preservation at the individual level is based on the health-saving culture. In order to examine how health practices unfold in real life at the institutional, interpersonal and individual levels, a study of the mega city's residents was conducted.*

**Keywords:** *doctor, health, health preservation practice, health-saving culture, management, patient*

### 1. INTRODUCTION

In modern society, the health of the individual is not exclusively an individual practice. The individual's health preservation, along with a healthy lifestyle, is a collective social practice. The health of each person is mostly determined by the quality of the natural, social, economic, political and cultural environment. In order to preserve health and maintain a healthy lifestyle, a system of public health guidelines is required, providing the individual with information about how to achieve it. Thus, health from the sociology viewpoint is a social phenomenon, directly depending on the environment of a human activity, on the collective and individual cultural norms, values and ideas of health. The actual practice of preserving health develops at three levels – institutional, interpersonal and individual, which are not yet sufficiently coordinated. When briefly examining each of the levels, from our point of view, the institutional level is represented by a variety of collective practices, including medical, social, political, economic, legal, scientific, cultural. Not being able to fully present all the components of this level, we will limit ourselves to a brief description of them. Thus, medical practices include a system of institutions, ranging from higher education medical institutions to health care organizations. The political component of the institutional level is based on the respect of the rule of law, the right of citizens to freedoms. Thanks to a healthy legal system, moral health is maintained in society. Economic practices at the institutional level include social and economic norms providing the optimal conditions ensuring health preservation of the working population. The scientific component of the institutional level plays a significant role in the justification of the need to preserve health and maintain a healthy lifestyle on the basis of a set of knowledge in different branches of sciences and the latest methodology for health preservation. A healthy cultural system contributes to the maximum spiritual development of each person. In this article, we will limit ourselves to medical practices, including public and commercial health care organizations. The interpersonal level involves doctor-patient interaction. As we have already pointed out, health preservation is a collective practice. An individual can be healthy and preserve their health only in close cooperation with a doctor. In general, it seems to us that it is the doctor who has the opportunity to significantly shape patients' conscious development of health preserving social practices, healthy lifestyle strategies, ways of their



implementation. It is the doctor who is able to guide patients to the goal of «being healthy» and to consistently create paths to health. At the individual level, the practice of health preservation is based on the culture of health saving, the culture of self-preservation, on the individual's ideas about how to preserve and strengthen their health. At the individual level, the state of health is a complex of personal and social characteristics. This complex is based both on the person's subjective perception of their existence, and on collective cultural traditions, worldviews, behavioural stereotypes. Analyzing the individual level we can see that it is highly dependent on the mass health culture, which in its turn is predetermined by the norms of consumer society. As a result, in the absence of an established and sustainable mass culture of health at the individual level, in some social groups being healthy also means being successful in social, professional and personal aspects. It has become fashionable and prestigious to be healthy. In this regard, to prove their belonging to a certain social group individuals faced the need to maintain not just a healthy lifestyle, but to use services and goods aimed at maintaining health. This practice was seen as an opportunity for self-identification, as a way to belong to a particular social community. While the interest in health and wellness practices is increasing, today we can generally note a significant deterioration in public health, expressed in quantitative terms. Researchers talk about institutional health risks for patients (Shilova 2016). The decrease in individuals' social activity in the sphere of individual health preservation reflects the individual level of health preservation practices in the population.

## 2. CHAPTER 2

In foreign sociology, the study of health originates in the works of E. Durkheim (Durkheim 1995), whose teaching about the differences between normal and pathological in society, about social disorders and their treatment is still relevant. Health, according to E. Durkheim, is a normal development of life forces of the individual, group or society, contributing to adaptation to environmental conditions, the possibility to use them for the development. The problem of health preservation practices is based on the basis of studies by M. Weber, who first raised the question of the typology of social action (Weber 1990). T. Parsons introduced a new interpretation of the «sick role.» He proposed to consider it a special kind of deviant behavior of a person, since the patient has customary rights and obligations. The scientist developed the idea of the possible preservation of social balance through the mechanism of social control (Parsons 2002) in the implementation of which both medical institutions and doctors participate. P. Bourdieu (Bourdieu 1998), B. Turner (Turner 2001) considered the problem of excessive social control in the activities of medical institutions, thus laying the foundation for the theory of medicalization of society. In general, this has influenced the formation of a radical critical view on health practices at the institutional level. The research at the microsocial level creates opportunities to take a fresh look at health practices. The contribution of W. Cockerham is that he focuses on a personal responsibility for their health. This responsibility in one way or another is conditioned by the social and cultural norms of social groups. There is a collective pattern of health behaviour, choices that are limited by gender, age, nationality, social class, etc. (Cockerham 1997). P. Bourdieu (Bourdieu 1998) introduces the concept of «habitus», essential for the understanding of individual health practices. «Habitus» is defined as a system of social relations, the set of individual dispositions and perceptions. The habitus helps to explain the behaviour of the individual, reproducing the socio-cultural rules, «styles of life» of different social groups, including rules regarding the health preservation. The habitus tends to ensure its own constancy and its defence against change through the selection it makes within new information by rejecting information capable of calling into question its accumulated information. This is what makes habitualized health practices so difficult to change. Medicine, in the terminology of P. Bourdieu, carries out «symbolic violence», imposing its system of meanings, symbols, hierarchy of values, which then acquire a natural, indisputable character.

In his book «Distinction» P. Bourdieu shows how habitus forms a particular attitude towards health (Bourdieu 1984). Understanding the rationality of everyday life is important for health preservation (Garfinkel 2002), «communicative rationality» (Habermas 2000). A. Giddens showed the importance of studying the actions of individuals, «shading-off» into social structures (Giddens 2001). Equally important is the process of social construction of reality according to P. Berger and T. Luhmann (Berger, Lukman 1995), including in relation to the personal health practices. D. Armstrong (Armstrong 1995, 2002) and M. Fitzpatrick (Fitzpatrick 2008) described a new phenomenon - «health market» - in terms of sociology of consumption. In Western sociology, there are many different areas of research trends in health practices. We will indicate some of them. So, the main idea of B. link and J. Phelan is concerned with social conditions as the fundamental causes of disease (Link, Phelan 1995). G. Steinkamp believes that the deterioration of health, proved in many scientific works, depends on the conditions and quality of life, material well-being of the individual, social inequality (Steinkamp 1999). M. G. Marmot (1986), Macinko (2003) examine in their works social inequality and the impact of the social environment on health. O. Solar, A. Irwin study the conceptual framework for action on the social determinants of health (Solar, Irwin A 2007). A. R. Jadad elaborates on a long, healthy and happy life (Jadad 2013). J. Kantola with colleagues examine the significance of a health status in a broader aspect for the achievement in the field of human factors, business management, training and education (Kantola 2017). In the national science of health, culture of self-preservation emerged rather recently and continues to develop. Thus, A. I. Antonov, V. M. Medkova (Antonov, Medkov 1996), I. V. Zhuravleva (Zhuravleva 1988), L. S. Shilova (Shilova 2012, 2016, 2019) N. M. Rimashevskaya (Rimashevskaya 2010) addressed the issue of «self-preservation behaviour». The number of studies devoted to understanding the forms of patients' social activity and sociocultural contexts of their actions aimed at protection of the rights and interests has increased (Brown, N. Rusinova 1993, 1999). The studies of doctor's activities from the sociological viewpoint have been published. Thus, N. G. Osipova, T. V. Semina (Osipova, Semina 2017) investigated the issue of professional deformation of the doctor's personality. V. A. Mansurov, O. V. Yurchenko (Mansurov, Yurchenko 2005) studied the prospects of professionalization of Russian doctors in the reforming society. Many scientists, including N. V. Bredikhina (Bredikhina 2006), E. A. Istyagina-Eliseeva (Istyagina-Eliseeva 2015) addressed the analysis of attitude towards a healthy lifestyle. A. A. Shabunova, V. R. Shuchatowitz, P. S. Korchagina (Shabunova, Shuchatowitz, Korchagina 2013) conducted a study of health-preserving activity, which is considered as a health factor. Medico-sociological analysis of public health and health care was conducted By V. A. Medik, A. M. Osipov (Medik, Osipov 2012). L. V. Panova, N. L. Rusinova (Panova, Rusinova 2005) started the discussion of social inequality issues and the accessibility of health care for different population groups. A.V. Reshetnikov, O. A. Shapovalova (Reshetnikov, Shapovalova 2008), E. N. Novoselova (Novoselova 2017) revealed new social contexts of health, illness, care, prevention. S.V. Sitnikov (Sitnikov 2014), N.B. Belenok (Belenok 2017) examined the axiological aspects of health preservation. It is worth pointing out that a variety of studies has been conducted, including the attitude towards medical examination (Attitude towards Health 2015). Despite the fact that sociology has developed an interest in social processes and cultural trends characterizing health practices, the issue remains urgent and requires analysis. To some extent, the article aims to fill this gap.

### 3. CHAPTER 3

#### 3.1. Research methodology

To study what is embodied in real practices of health preservation at three levels, we conducted a research of Novosibirsk residents' opinion. The study was conducted under the guidance of the author in June 2019 (N=771, 399 women and 372 men).

A questionnaire survey was used, the questionnaire contained three blocks of questions, each allowed us to analyse the levels of health preservation practices. The sample is formed through a three-stage selection of territories. At the first stage all administrative city districts were selected, at the second – streets and houses, at the third – respondents with observance of quota by sex and age. Calculation of quotas is carried out based on statistical data on the sex and age composition of Novosibirsk population.

### **3.2. Measuring instruments**

It should be noted that it is important to study the institutional level not only using objective indicators (life expectancy, morbidity rates, the number of medical institutions, etc.), but also subjective assessments by city residents. Without claiming to be complete, we asked a number of questions that examined some aspects of the institutional level. These included, for example, the following: «Do you consider health to be the most important social problem», «In your opinion, what health problems do you consider to be most significant», «In your opinion, what attention is paid to health care by the local administration in the region of your residence?», «Are you satisfied with the medical care in the area of your residence as a whole?», etc. Interpersonal level was assessed through the following questions: «What are the most important qualities a good health professional should possess?», «Have you faced the fact that the doctor prescribes the wrong treatment?», «Did you consult other doctors in case of incorrect treatment?», «Have there been cases when the doctor prescribed you treatment and the prescribed drugs could only be bought in certain pharmacies?», etc. The assessment of the individual level was carried out with the help of the following questions: «Please rate the level of your health», «Do you improve your health?», «Do you do sports?», «Do you follow your diet?», «Do you smoke?», «Do you undergo preventive examinations, medical examination?», «How often do you visit medical facilities?», «When having symptoms of cold/pains do you...», «What medical conditions have you had most often in the last year?».

### **3.3. Research results**

#### *3.3.1. Institutional level assessment*

We consider the institutional level of health preservation in the context of medical practices as a complex of state (municipal) institutions and commercial health care organizations. It turned out that women equally prefer to apply to health care organizations of both forms of ownership (51.3% - public, 48.7% - commercial). Women explain their choice in favour of public institutions by the fact that «public institutions are equipped as good as private clinics», «public institutions offer the same range of services as paid clinics», «proximity to home». The choice of commercial organizations is due to the fact that «private clinics' personnel is eager to listen to and devote enough time to the patient», «have individual approach in treatment», «level of service, availability, qualification of specialists». Men are more likely to prefer public health care facilities (62.6%-public, 37.4%-commercial). Respondents explain their choice in favour of public health care organizations by the fact that «free medicine, according to the social guarantees of the state, comes from my own taxes». Commercial health care organizations attract men for the following reasons: «individual approach and good attitude», «I earn enough to ensure my family gets quality services». The presented results may indicate that the activities of medical doctors in relation to public health preservation are carried out in both public and commercial health care organizations. The problem of effective implementation of these activities is the inefficient management of public organizations.

#### *3.3.2. Interpersonal level*

This article covers only some aspects that reflect the interaction between a doctor and a patient. Respondents were asked the question «What are the most important qualities a good health care

professional should have?». According to women, a doctor should have a high level of education (65.8%), competence (42.5%), attentiveness (34.1%). Men point out a high level of education (64.2%), competence (37.2%), as well as having a long work experience (37.5%). It is significant that for the respondents such qualities as modesty, inter-personal skills, tolerance, kindness were not so important. However, at the same time, the results of the study show that these qualities are often very important in combination with education and competence. The problem of health preservation at the interpersonal level, as we can see, is most often based on the professionalism and competence of a doctor. If these facts are interpreted in a broader perspective, we can say that there are problems at the intersection of institutional and interpersonal levels. Thus, the practice of health preservation at the interpersonal level affects such important aspects as the professionalism of doctors. However, for the successful implementation of health preservation practices at the interpersonal level, from our point of view, there is a need for the formation of social responsibility of both the doctor and the patient. It is important that doctors are motivated to improve their training also in the aspect of interaction with the patient, in the aspect of redirecting the patient from risky behaviour to health-saving behaviour. Speaking of health risky behaviour, we note that U. Beck in the book «Risk society. Towards a new modernity.» (Beck 2000) provides data that today people who are born «healthy» constitute only about a tenth of the world's population. And 61% are in the so-called «third state» between illness and health, i.e., have chronic diseases, without losing the ability to work.

### 3.3.3. Individual level

The health care system is not able to provide a high level of health without the direct active participation of individuals. Self-perception of individuals of their health is very important. According to the survey, 52.3% of women and 49.2% of men rated level of their health as good. Based on the results of the study, it can be seen that men are less likely than women to engage in health improvement. About 27% of women and 40% of men do nothing in this respect. In general, this may indicate passive behavioural practices in relation to one's health. It is worth noting that society creates «samples» of a healthy lifestyle, determining what is necessary for a person to be healthy. Doing sports can be such a sample. The answers to the question «Do you do sports?» were answered in the following way. About two-thirds of the respondents in one way or another improve their health through sports practices. The practice of health preservation also includes healthy eating practices. Healthy eating practices are followed by 38.5% of women and 31.5% of men. A third of respondents in each group independently determine what they will consume and what they can refuse. Health practices are closely linked to tobacco cessation. It is significant that only 13.4% of women and 25.4% of men smoke. The rest of the respondents either quitted smoking, or did not smoke at all. 22.9% of women and 31.3% of men gave up smoking. This may indicate that a healthy lifestyle culture regarding tobacco consumption is being introduced in society. The question «What medical conditions have you had most often the last year?» characterizes the problems of health preservation at the individual level. One of the most common types of diseases inhabitants of metropolises suffer from are respiratory diseases (44.3% and 55.9%, respectively). Much less often respondents experience discomfort due to diseases of the cardiovascular (23.2% and 15.9%) and musculoskeletal (15.7% and 11.8%) systems. It is significant that every tenth respondent visited major medical centres located in Novosibirsk (V. Tsivyan Research Institute of Traumatology and Orthopedics Meshalkin National Research Institute, etc.). The study of the individual level indicates that it is necessary to motivate people to be more active in health preservation practices.

#### 4. CONCLUSION

For the actual implementation of health preservation practices, the system management of all selected levels is required. A set of measures that can change the current condition of health preservation is important. The institutional level economic component should be aimed at creating the awareness that the health of the population is a part of the labour potential. The scientific component of the institutional level should be based on interdisciplinary studies of health and healthy lifestyles. It is important to extend not only medical, but also psychological studies of health preservation, as well as the development of health-saving technologies, taking into account the best world examples in this area. Thanks to mass popular health-saving culture, standards of healthy and unhealthy lifestyles should be set; awareness of the value of health should be constituted; samples and patterns of healthy behaviour, specific ways of achieving health and health preservation practices should be created. In general, the system of public health management should be developed. This system affects the institutional, interpersonal and individual levels. Effective state programs aimed at preventive and health improvement measures should be introduced. The involvement of the media in promoting new cultural values and health norms is important in this regard. Regular sociological monitoring is also required to identify healthy and risky behavioural health strategies. At the individual level, it is important not only to meet the fashion trends of the consumer society, but to form sustainable values and health norms.

#### LITERATURE:

1. Antonov, A. I., Medkov, V. M. (1996) *Family Sociology*. Moscow: Moscow State University Publ.
2. Armstrong, D. (1995) The problem of the whole-person in holistic medicine. *Health and Disease*. Philadelphia: Open University Press: 45-49.
3. Armstrong, D. (2002) Conceptualising the Patient. *J. Health Serv. Res. Policy*, 7 (4): 245-246.
4. Beck, U. (2000) *Risk society. Towards a new modernity*. Moscow: Progress-Traditsiya Publ.
5. Berger, P., Lukman, T. (1995) *Social Construction of Reality. A Treatise on sociology of Knowledge*, Moscow: Medium Publ.
6. Bourdieu, P. (1984) *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge.
7. Bourdieu, P. (1979) Structures, habitus, pratiques. *Le Sens pratique*. Paris: Minuit.
8. Bredikhina, N. V. (2006) Population orientation to a healthy lifestyle: regional aspect. *Extended Abstract of Cand. Sci. (Sociology) Dissertation*, Chelyabinsk.
9. Brilenok, N. B. (2017) *Healthy lifestyle: social and philosophical analysis*. Extended Abstract of Cand. Sci. (Philosophy) Dissertation, Saratov.
10. Brown, J., Rusinova, N. (1993) Personal connections in the health care system and «career illness». *Sociological research*, no. 3, pp. 30-35.
11. Brown, J., Rusinova, N. L. (1999) Social inequalities in health. *Journal of sociology and social anthropology*, no. 2 (1), pp. 103-114.
12. Cockerham, W., Rutten, A., Abel, T. (1997) Conceptualizing contemporary health lifestyles: moving beyond Weber. *The Sociological Quarterly*. 38 (2): 321-342
13. Dmitrieva, E. V. (2002) *Sociology of health: methodological approaches and communication programs*. Moscow: Center.
14. Durkheim, E (1995) (ed.) *Sociology. Its object, method, purpose*. Moscow: Canon.
15. Fitzpatrick, M. (2008) *The Tyranny Of Health: Doctors and Regulation of Lifestyle*. L.: Routledge.

16. Garfinkel, G. (2002) Studies of the routine grounds of everyday activities. *Sociological review*, vol. 2, no. 1, pp. 3-19
17. Giddens, A. (2001) *Sociology*. Cambridge: Polity Press.
18. Istyagina-Eliseeva, E. A. (2015) Analysis of attitudes to healthy lifestyles, physical culture and sports in modern Russia. *Historical and socio-educational thought*, no. 3, pp. 34-56.
19. Jadad, A.R. (2013). On Living a Long, Healthy, and Happy Life, Full of Love, and with no Regrets, until Our Last Breath. *Verhaltenstherapie*, 23 (4): 287–89.
20. Kantola, J. et al (2017). *Advances in Human Factors, Business Management, Training and Education*. SpringerLink. Advances in Intelligent Systems and Computing.
21. Link, B., Phelan, J. (1995) Social Conditions As Fundamental Causes of Disease. *Journal of Health and Social Behavior*. (Extra Issue): 80-94.
22. Macinko, J et al, (2003). Income Inequality and Health: A Critical Review of the Literature. *Medical Care Research and Review*, 60 (4):407-452
23. Mansurov, V. A., Yurchenko, O. V. (2005) Perspectives of professionalisation of Russian doctors in the reforming society. *Sociological research*, no. 1, pp. 66-77.
24. Marmot, M.G. (1986) Social inequalities in mortality: the social environment. *Class and Health*. London and New York: Tavistock, 21-33
25. Medik, V. A., Osipov, A. M. (2012) *Public health and health: medical-sociological analysis*. Moscow: OIOR; TNFRA-M, 358 p.
26. Novoselova, E. N. (2017) On the role of sociology in studying and preserving the health of the Russian population. *Moscow University Vestnik*, ser. 18. *Sociology and political science*, no. 3, pp. 30-57.
27. Osipova, N. G., Semina, T. V. (2017) Doctor's personality in modern society: perfect style and professional deformation. *Moscow University Vestnik*, ser. 18. *Sociology and political science*, no. 3, pp. 4-29.
28. Do people care about their health? And how often do they undergo medical examination? (2015) *FOMnibus*. Available at: [<http://fom.ru/Zdorove-i-sport/12324>] (accessed 25.08.2019).
29. Panova, L. V., Rusinova, N. L (2005) Inequalities in access to primary health care. *Sociological research*, no. 6, pp. 127-136.
30. Parsons, T. (2002). *The Social System*. Moscow: Academic project.
31. Reshetnikov, A. V., Shapovalova, O. A. (2008) *Health as a subject of study in the sociology of medicine*. Moscow: Geotermica.
32. Rimashevskaya, N. M. (2010) Social policy of the people's savings: a radical change in the negative health trend of the Russian population. *Economic and social change: facts, trends, forecast*, no. 4, pp. 48-61.
33. Shabunova, A. A., Shukhatovich, V. R., Korchagina, P.S. (2013) Health-saving activity as a health factor: gender perspective. *Economic and social change: facts, trends, forecast*, no. 3, pp. 75-86.
34. Shilova, L. S. (2012) *Self-preservation behavior of patients in the conditions of modernization of the Russian primary medical care*. Extended Abstract of Cand. Sci. (Sociology) Dissertation. Moscow.
35. Shilova, L. S. (2016) The institutional risks to the health of patients. *X international scientific conference «Sorokin readings «« Health of Russian society in the XXI century: sociological, psychological and medical aspects»*. Moscow: Moscow University Publ., pp. 194-196.
36. Shilova, L. S. (2019) Transformation of conditions of professional activity of doctors in the process of optimization of health care. Part 2. *Sociological science and social practice*, no. 2, pp 117-131.

37. Sitnikova, S. V. (2014) Axiological aspects of health of the modern citizen. *News of the Saratov University. New series. Sociology Series. Political science*, no. 4, pp. 23-28.
38. Solar O., Irwin A. A (2007) *Conceptual Framework for Action on the Social Determinants of Health. Discussion Paper*. Geneva: World Health Organization, Commission on Social Determinants of Health.
39. Steinkamp, G. (1999) Death, disease, and social inequality. *Journal of sociology and social anthropology*, vol. 2, no. 1, pp. 115 - 154.
40. Tikhomirova, I. A. (2007) *Physiological basis of health: short course of lectures on valeology*. Yaroslavl.
41. Turner, B. S. (2001) *Medical power and social knowledge*. Kazan: Kazan University Publ., pp. 68-73.
42. Weber, M. (1990). *Selected works*. Progress Publ.
43. Zhuravleva, I. V. (1988) Health and self-preservation behaviour. *Population and social development*. vol. 2, Moscow.

# THE APPROACH TO THE EFFICIENCY ESTIMATION OF THE MANAGEMENT SYSTEM OF HIGH-TECH INDUSTRY ORGANIZATIONS

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## ABSTRACT

*For organizations in high-tech industries that are characterized by short life cycles of products and technologies, high speed cloning of innovations by other players, and blurred boundaries of markets, a conceptual model of management based on the differentiation of classical and intelligent control subsystems was proposed. This division of control subsystems due to their contribution to the creation of competitive advantage: classical management subsystems provide competitive advantages of a low order, but intelligent subsystems – the advantages of a high order. The letter will cover: strategic understanding of stakeholders' expectations in a turbulent environment; industrial, organizational, managerial know-how, etc., that provide better control over business processes, collective learning, information and communication processes; the system of interaction with stakeholders; innovative activity. A source of competitive advantage is a high order intellectual capital. Accordingly, the proposed model of evaluating the effectiveness of the management system of the organization through the assessment on the principles of benchmarking the level of competitive advantages provided as components of intellectual capital (market, structural, human) and control sub-systems. For example, mobile operators demonstrated the results of applying the proposed tools – a competitive profile of OJSC "MTS" and OJSC "MegaFon" is formed, as well as the competitive profile of the industry in general (based on the data of 2012). It was demonstrated that classical management subsystems for this market (marketing; financial; social; industrial technology; logistics; subsystem of business units; subsystem of HR management; subsystem of internal corporate information and communication networks; portfolio subsystem) reproduce a competitive profile of industry in general and only intelligent subsystems create some advantages. This situation is due to the relatively close value of the levels of development of intellectual capital (only JSC "MTS" demonstrates a higher level of human capital development due to the advantages its motivational system).*

**Keywords:** *competitive advantages, intellectual capital, strategy*

## 1. INTRODUCTION

The Russian high-tech organizations' management is paying more and more attention to the analysis of the competitive advantages sustainability in the process of developing elaboration strategies. The book "Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant" by W. Chan Kim and Renée Mauborgne had a great influence here (Kim, Moborn, 2014). Many scientific and practical conferences, strategic sessions, trainings and other events were held on this issue with the aim of developing ideas and



technologies for creating “blue ocean strategies” in Russian management practice. Nevertheless, there is a significant gap between the stated strategic objectives based on sustainable strategic advantages and tactical actions that lead to their loss. This, above all, refers to the objects of intellectual property and, in general, the elements of intellectual capital, whose level of development determines the competitiveness of hi-tech organizations. The authors of this article propose to assess the sustainability of competitive advantages in the context of classical and intellectual management subsystems of an organization, based on the methodology of the “blue ocean” strategy, because only these systems allow creating a unique value curve.

## **2. RESEARCH METHODOLOGY**

Hi-tech industries are characterised by short cycles of technologies and products, high rate of copying innovations by other participants (including related and non-related industries), blurred market boundaries. The unique patented technology and products, the brand and reputation of the manufacturer, the price-quality ratio of the products, etc. are considered to be the competitive advantages (Novgorodov, 2018; Janaskaite, Uziene, 2018; Nikiforova, Sviridenko, 2011; Kovalenko, Tsurikov, 2008). However, these advantages are determined by the main organization competencies. The organization needs to be innovative and to identify various elements of intellectual capital and manage it in order to create and use new opportunities for development. The development of main key competencies of high-tech organizations, which determine the organization’s strategy and are, in their turn, a result of the previous strategic decisions, is provided by three components of intellectual capital (Corsi, Prencipe, 2019; Kengatharan, 2019):

- market capital;
- human capital;
- structural (or organizational) capital.

The intellectual capital is a result of the specific management function implementation, which provides the development of not only comparatively detached elements of human, market and structural capital, but, first of all, the formation and development of relations between them, creating a synergetic effect. The market capital structuring, which determines the effectiveness of organization’s interaction with external stakeholders, is based on the following principles. First, customer relations and network model of business process’s organization become the epicenter of business. Second, modern computer technologies contribute to the spread of not only the knowledge created by an organization, which is directed to the external environment, but also the knowledge which constitute the organization’s know-how and competitive advantage, but at a certain stage is lost due to various reasons (specialists’ leaving, downfalls in the exhibition activities, etc.). That is why the market capital includes both recognized elements (client base, uniqueness of produced goods and services, organization’s image in the market, “the strength of a trademark (brand)”), and the elements to be attributed to its structural capital. A trademark is associated with customer’s perception only, because a customer-oriented business model creates emotional connections with the customer, and visual messages about the organization’s trademark (advertising, slogan, color combination and design, etc.) do not form the market capital themselves, but bear the costs of its formation. In this case, the clients’ positive experience, which is formed due to the fact that the organizational culture supports this constant consumer orientation and contributes to the formation of new customer service forms, acts as a capital. It should be added that the intellectual property copyright determining the originality and uniqueness of technologies and products, applied methods, models and technologies of business processes, organizational culture, strategic alliances and the organization’s position in the network structure is the market capital component, too.

This is a consequence of the knowledge about these elements being open and being impossible to keep it as the organization's knowledge. As a matter of practice, the organizational culture, applied methods and technologies of business processes are related to structural capital. However, in the conditions of knowledge economy, network structures development, innovative business processes non-linearity are taken into consideration, these elements are explored by other market participants (partners, competitors, consumers, etc.). The authors strongly believe that these elements reduce the uncertainty of the competition landscape and guarantee the potential needs satisfaction for the nearest and distant future. When consumers discuss in social networks the goods and services quality, respond to company novelties, level of service, culture, performance of certain employees, etc., the open opinion of former employees about the technologies and management methods applied by the organization become publicly available. The IT development contributes to consumers' activity to initiate an interactive process of forming the organization's knowledge base about themselves and their preferences. The system of relations between the organization and its customers becomes individualized. The consumer knowledge base becomes "self-learning" and "self-sustaining", because each individual consumer manages his/her own relations with the organization, participates in the knowledge base formation and adds new information to it, determining his/her preferences. The information to be relevant for the consumer becomes available. The personalization (which is a combination of modern information technology and consumer information; its aim is to create individual relationships between an organization and an individual consumer using electronic commerce technologies; it should be noted that the transactions require a little time and provide a consumer with the most suitable products) and individualization (a process of product development, in which consumers participate by reporting their requirements to a product/service) technology contributes to the implementation and reprocessing of the organization's market capital in goods and services production. In the process of developing a strategy and making strategic and tactical decisions in definite areas of its activity not only the organization itself, but its competitors, partners, potential investors and other entities evaluate the organization's activity in their turn.

The parameters to be evaluated are:

- its progressiveness;
- resource endowment;
- ability to solve problems creatively, including complicated ones;
- marketing activity;
- leadership in a certain area;
- leading specialists' competence;
- quality of products and services;
- consumer confidence in the organization;
- competitive prices for products, services, work;
- degree of specialization (diversification) in certain areas.

Thus, the existing methods, models and technologies for the implementation of business processes, organizational culture are not only the factors of the internal environment of the organization. Such elements as service quality, staff loyalty to the organization, the participation in the processes of generating and transferring knowledge can be categorized as the elements of human capital, which are manifested in the process of organization's performance and determine the effectiveness of business processes. It should be specially noted that employees' leadership qualities make the strategic changes possible and provide the staff's activity and ability to generate creative solutions.

Structural capital is identified only in the context of achieving the organization's competitiveness in the long term perspective and characterizes the organization's ability:

- to manage information flows and knowledge systems, which means the determination of the optimal ratio between explicit and implicit knowledge; between knowledge to be “released” into the external environment, and knowledge of organization's know-how and key competencies;
- to adopt itself to the application of new knowledge and ensuring the innovation of value, providing appropriate changes in organizational design and organizational culture in the conditions of extreme time restrictions.

The introduction of the elements of “TOP competence”, “innovation potential” and “adaptation potential” into the intellectual capital structure is due to a qualitative change in the system of strategic management of the generally accepted structural capital elements such as mission and vision, definition of objectives, organizational structure of management, financial and communicational management, etc. The necessity of knowledge systems management and its transformation into commercially successful innovations in conditions of limited resources (first of all, time-bound) contributed to getting new knowledge, skills and abilities - TOP competencies – so as to identify the emerging opportunities for the organization's development (both inside the organization and outside it), assessing its readiness for their application, formation and implementation of the situational modernization model. The adaptation potential refers to the ability of the system to follow the accepted development strategy with the use of reactive control and its own resources. The innovation potential means the ability to implement unique strategic initiatives, preventing crises and using new opportunities with the use of proactive management and attraction of both internal and external resources. TOP competencies. Adaptive potential and innovative potential determine the organization's dynamic abilities to be used for knowledge development and innovations implementation. Thus, those are intellectual subsystems of management which provide the formation of unique competitive advantages of organizations (Zhang, Lettice, Pawar, 2019; Shashkova, Nikiforova, 2013; Cherednikova, 2008). It is important to note that hi-tech organizations' competitive advantages can be divided into low-order and high-order ones. The low-order ones are “clone” advantages which means that the ideas they include can be reproduced by other market subjects, while the high-order ones characterize the advantages of intellectual capital components management. The authors consider the following as the high-order advantages:

- strategic understanding of stakeholders' expectations in a turbulent environment;
- production, organizational, managerial and other know-how (patents themselves are an explicit knowledge which is available to all players of different markets), providing better management of business processes, collective learning, info-communication processes;
- system of interaction with stakeholders;
- innovative activity which ensures the full use of intellectual capital, as well as the mechanisms and tools of its development.

Process management systems for creating high-order competitive advantages implement non-equilibrium system mechanisms such as “mutual gain loops”, “restriction loops”, “locking mechanisms”, etc. (Nikiforova, 2011). The management of hi-tech organizations focuses on endogenous resources of high-tech industries, allowing to generate sustainable competitive advantages: “a resource must create economic value and be rare, difficult to replicate, irreplaceable and not freely available in the market of production factors; priority of value creation instead of the minimization of costs, as well as the focus not on suppressing a rival in the market competition at all costs, but on creating your own competences that are difficult for other enterprises to replicate are pledge of leadership in business” (Katkalo, 2007, p. 30).

Intellectual capital is a priority endogenous strategic resource ensuring the formation and development of dynamic abilities and sustainable competitive advantages of hi-tech organizations. The role of management subsystems is different in sustainable competitive advantages creation. It must be emphasized that there are classical management subsystems (marketing, operations, logistics, finance, human resource management, etc.) and intellectual management subsystems. Classical subsystems provide the quality of routine processes (sub-processes) management regardless of the industry sector of the organization. These subsystems are traditionally formalized in the form of functional structural units (HR department, accounting department, etc.), and this requires considerable efforts to harmonize their goals and objectives in the context of corporative priorities. According to H. Mintzberg's theory (Mintzberg, Alstrend, Lampel, 2001), intellectual management subsystems are embodied in subsystems of adhocracy decision making, "working constellation systems", subsystems of informal info-communications that contribute to the generation of new knowledge and their spread within the organization, reduction of barriers within the organization. The authors classify the following management subsystems into the following management subsystems:

- external communication network;
- knowledge;
- innovative projects investments;
- harmonization of routine and innovative business processes;
- processes of corporate structures adaptation (organizational design).

The management system of hi-tech organizations is a reflexive control system that ensures the restructuring and self-organization of models, systems and algorithms of knowledge. Suggested by the authors conceptual approach to the functioning of hi-tech organizations Shashkova, Nikiforova, 2013; Nikiforova, Kharchenko, 2010; Cherednikova, 2008; Tsurikov, Korotkova, 2007) is presented in Figure 1. It should be noted that the process of evaluating the effectiveness of organization's functioning is not an end in itself, but acts as a mechanism for self-learning, self-development of the organization in a turbulent environment, a source of new knowledge resulting from the estimation of market growth, human and structural (organizational) capital, the contribution of each subsystem to ensuring the sustainability of competitive advantages. Additionally, the evaluation results are used in public reporting for external and internal stakeholders to increase their loyalty.

*Figure following on the next page*

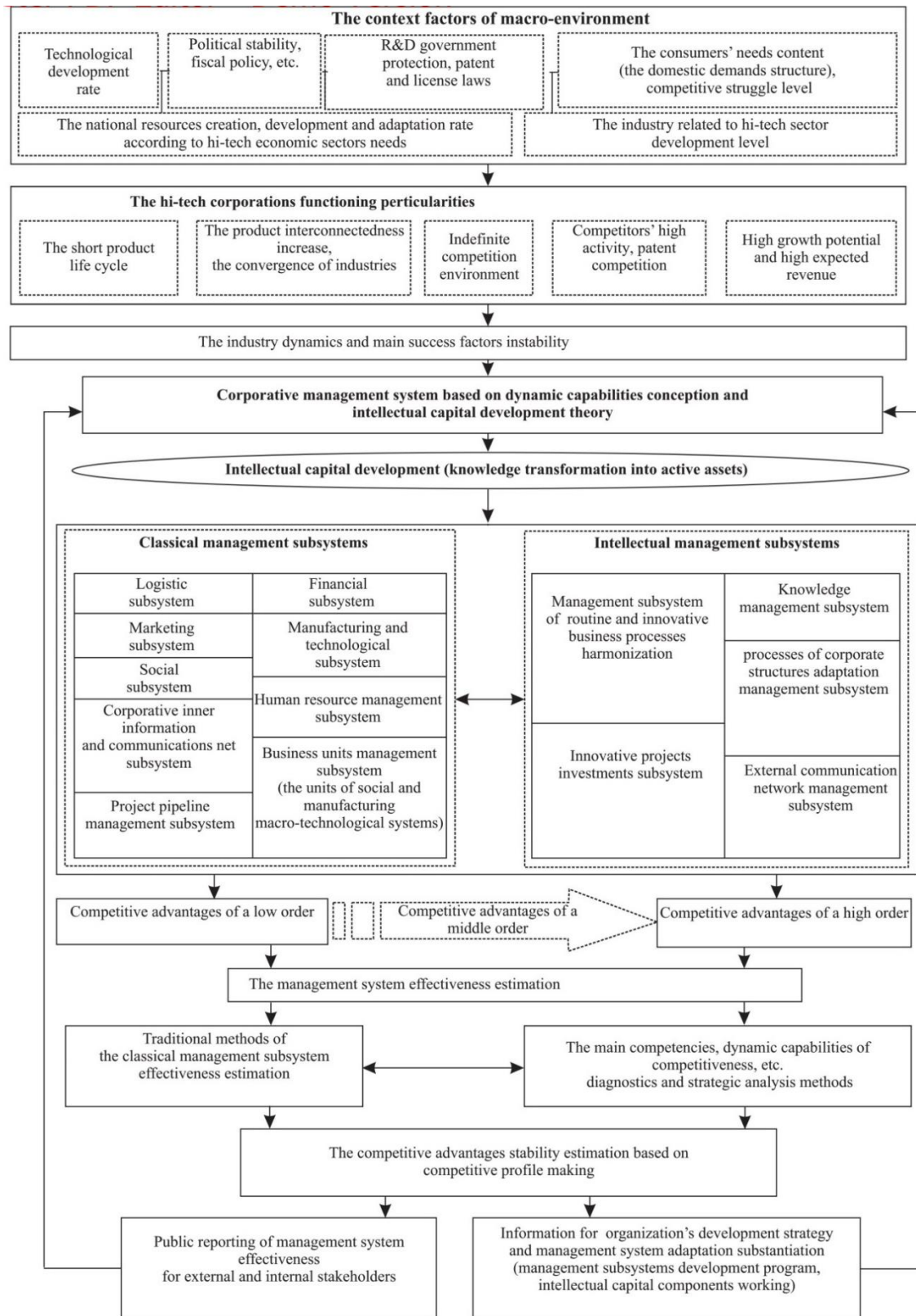
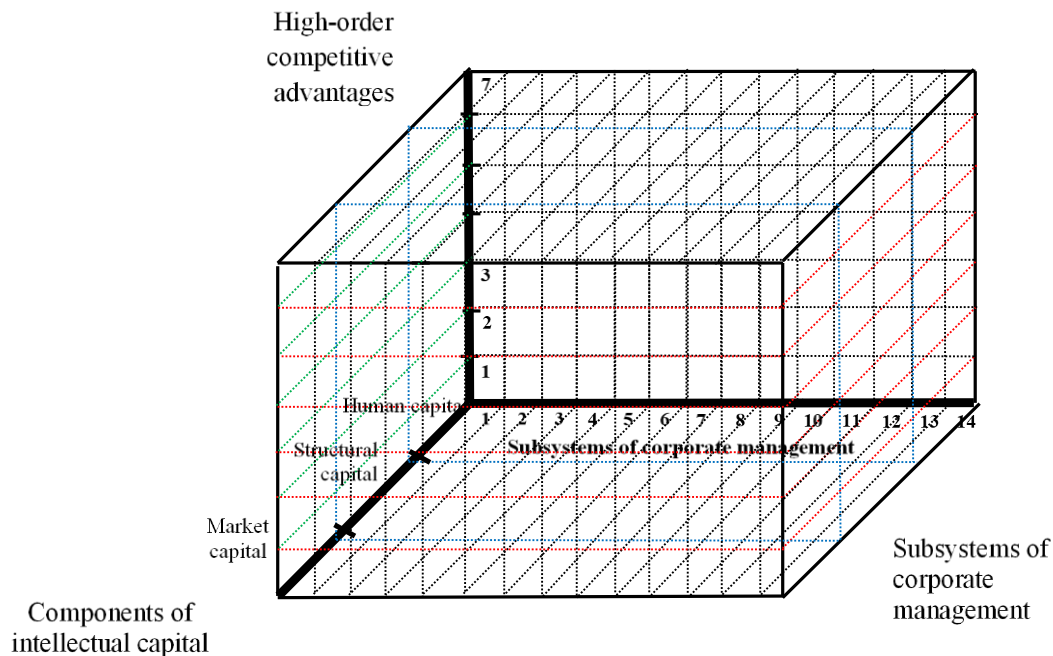


Figure 1: Illustration of the concept model of hi-tech organization management based on the classical and intelligent control subsystems differentiation (by the authors)

Key Performance Indicators (KPI) are the most appropriate tools for the effectiveness of the organization assessment which make the estimation comprehensive (Sanchez-Marquez, Albarracin Guillem, Vicens-Salon, 2018).

In general, the multidimensional system of indicators provides the evaluation of the development level of high-order competitive advantages resulting from both individual subsystems of the organization's management and the components of intellectual capital (Fig. 2).



*Figure 2: Multi-dimensional model for assessing the effectiveness of hi-tech organizations' management system (by the authors)*

The steps of the system implementation are:

1. Designing a set of management system performance indicators taking into account the industry/market specifics of the organization.
2. Detailing the list of indicators for the management system's effectiveness assessing in context of high-order competitive advantages, the corporate management subsystems and intellectual capital components.
3. Validation of reference values of indicators based on expert assessments and benchmarking.
4. Evaluation of the management system effectiveness within the context of high-order competitive advantage, corporate management subsystems and intellectual capital components.
5. A competitive profile design and a comparative assessment of hi-tech organizations' effectiveness according to the selected standard.
6. Analysis of the results of the corporate management system's comparative efficiency evaluation in order to substantiate the adjustment/change of the organization's development strategy and adapt the corporate management system.

### 3. RESEARCH RESULTS

The results of the suggested approach application are illustrated by MTS OJSC and Megafon OJSC. The results are introduced in Tables 1–2, Figure 3. The industry averages were determined by means of the analysis of the leading mobile operators' activity in Novosibirsk (VimpelCom and Tele2 activity was analyzed too).

*Table 1: The assessment of the mobile operators' management system performance based on the assessment of the high-order competitive advantages development level (Authors' analysis)*

High-order competitive advantage	Index	Competitive advantage development level, points		
		MTS OJSC	Megafon OJSC	Average level
Strategic understanding of consumer, society, state expectations in a turbulent environment	$S_1$	7,40	6,25	6,26
Unique character of the product offer	$S_2$	3,65	7,50	5,41
Strategic operational areas management efficiency	$S_3$	8,85	8,23	7,84
Operations effectiveness	$S_4$	6,69	6,11	6,55
Interaction with partners contributing to the development of high-technology industry organizations' effectiveness (investment activity)	$S_5$	9,83	6,40	7,48
Unique key competences	$S_6$	8,86	8,14	8,2
Innovation activity	$S_7$	9,00	9,76	9,2

*Table 2: The assessment of the development level of corporate management intellectual subsystems of mobile operators (Authors' analysis)*

Subsystems	Index	Subsystems' development level, points		
		MTS OJSC	Megafon OJSC	Average level
External communication network management	B1	9,46	7,59	8,33
Knowledge management	B2	7,85	7,14	7,1
Financial support of innovative projects	B3	7,90	10,00	8,4
Management of the processes of harmonization and stabilization of routine and innovative internal business processes	B4	6,13	6,14	6,77
Management of the processes of corporate structures' adaptation	B5	10,00	9,00	9,75

The development of market competencies which contributes to the enhancing of market position by means of introducing new products and services, is typical of Megafon, so that there is its insignificant superiority over the market leader in terms of market capital development (Fig. 3). MTS OJSC demonstrates a higher level of human capital development due to high staff loyalty (top-managers pay much attention to the development of motivation systems). The comparative assessment of management subsystems' development level shows that it is rather difficult to achieve superiority in classical management subsystems in the mobile communication market (in marketing, human resource management, etc.), which are easily cloned. The only superiority in intellectual management subsystems' development provides an organization with leadership in the short- and long-term perspective.

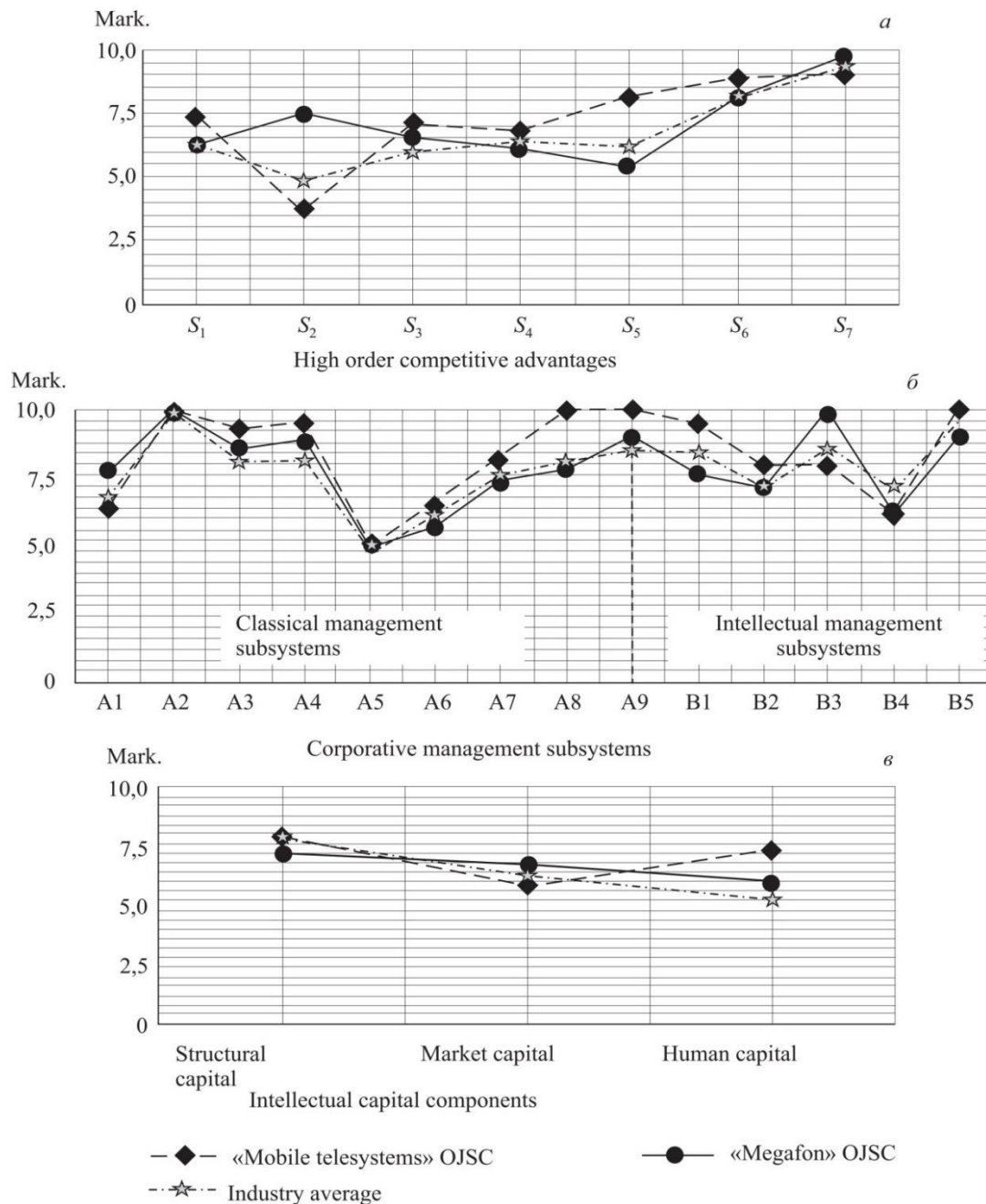


Figure 3: The organizations' competitive profile: the level of high-order competitive advantages' implementation, the corporate management subsystems and intellectual capital components' development (A1 – Marketing subsystem; A2 – Social subsystem; A3 – Engineering and manufacturing subsystem; A4 – Subsystem of business units (units of production macro-technical systems); A5 – Logistic subsystem; A6 – Financial subsystem; A7 – Human resource management subsystem; A8 – Corporate internal information and communication networks' subsystem; A9 – Project portfolio subsystem

#### 4. CONSLUTION

The multi-dimensional assessment of the efficiency of management subsystems' functioning and the presentation of the results in a form of a competitive profile gives an opportunity to reveal strategic gaps both in management subsystems' development level and in the realization of potential of structural, market, human capital implementation level for both the market leader and the competitors.



## LITERATURE:

1. Cherednikova L.E. (2008). The intellectual resources of a modern enterprise monitoring. *Siberian financial school*, 3, 124-132.
2. Corsi, C., Prencipe, A. (2019). High-tech entrepreneurial firms' innovation in different institutional settings. Do venture capital and private equity have complimentary or substitute effects? *Industry and Innovation*, 26 (9), 1023-1074.
3. Janaskaite, V., Uziene, L. (2018) Intellectual Capital as a Factor of Sustainable Regional Competitiveness. *Sustainability*, 10 (12), paper No. 4848.
4. Katkalo V.S. (2007). *The theory of strategic management evolution* (abstract for doctoral dissertation). V.S. Katkalo.
5. Kengatharan, N. (2019). A knowledge-based theory of the firm Nexus of intellectual capital, productivity and firms' performance. *International Journal of Manpower*, 40 (6, SI), 1056-1074.
6. Kim, W. Chan, Moborn, R. (2014). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Moscow: Mann, Ivanov and Ferber.
7. Kovalenko A.A., Tsurikov S.V. (2008). The system of organization's innovative development factors. *Siberian financial school*, 2, 96-100.
8. Mintzberg G., Alstrend B., Lampel D. (2001). *School of strategies*. St. Petersburg: PETER.
9. Nikiforova L.E. (2011). *The organization's strategic management methodology based on the intellectual capital development* (doctoral dissertation). L.E. Nikiforova.
10. Nikiforova L.E., Kharchenko A.A. (2010). The organizational changes management: the compliance of organizational design with strategic goals and situational characteristics assessment. *Siberian Financial School*, 4, 116-127.
11. Nikiforova L.E., Sviridenko D.I. (2011). The innovative organizations management: a strategic approach. *Siberian Financial School*, 6, 17-29.
12. Novgorodov, P. (2018). Efficiency of Universities Performance: From Monitoring and Ranking to Intellectual Capital Evaluation. *Upravlenets-The Manager*, 9 (1), 48-55.
13. Sanchez-Marquez, R., Albarracin Guillem, J.M., Vicens-Salon, E. (2018). Intellectual Capital and Balanced Scorecard: impact of Learning and Development Programs using Key Performance Indicators in Manufacturing Environment. *Diression y Organizacion*, 66, 34-49.
14. Shashkova M.V., Nikiforova L.E. (2013). The effectiveness of high-tech organizations corporate management system assessment based on building a competitive profile: conceptual and methodical approaches. *Siberian Financial School*, 5 (100), 99-115.
15. Tsurikov S.V., Korotkova E.A. (2007). Special economic zones of technology-innovative type in Russian innovation system. *Siberian financial school*, 4, 104-110.
16. Zhang, M., Lettice, F., Pawar, K. (2019). Effects of intellectual capital and university knowledge in indigenous innovation: evidence from Indian SMEs. *Production Planning & Control*, 30 (10-12), 799-812.

# DETERMINANTS OF SME FINANCE IN THE PHILIPPINES: GLOBAL VALUE CHAINS, TRADE REGULATIONS, AND INSTITUTIONAL ENVIRONMENT

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## ABSTRACT

*Access to finance is crucial to economic development. The important policy question is: What determines firms' access to finance? This paper seeks to address this question by exploring the impact of GVC participation, trade regulations, and institutional environment on firms' access to external finance, as measured by firms' reliance on bank credit, non-bank financial credit, and informal credit for external financing of working capital, using the firm-level panel data set of the World Bank Enterprise Survey in the Philippines for 2009 and 2015. Preliminary results provide unprecedented empirical evidence that the firm's access to bank and non-bank credit is determined by firm-specific characteristics such as the firm's size, age, female ownership, technological characteristics, and spending on "informal" activities that the firm has to incur as "additional costs" to facilitate its operations in an environment of weak institutions. Meanwhile, firm-level characteristics are not significant determinants of informal credit given that financial sources of this kind are known to be less sensitive to firm characteristics than formal institutions, which extend credit based on observable firm characteristics to mitigate information asymmetry problems.*

**Keywords:** Global, Finance, Trade regulations, Value chains

## 1. BACKGROUND

A well-functioning financial sector is instrumental in providing financial services to firms with prodigious potential that leads developing economies to grow and meet the high-income levels of more-developed economies. It is not only about the total volume of lending: what is vital is which firms are financed and on what terms, depending on the firms' credit scores, both for established and emerging businesses to have extensive access to finance at realistic costs. In developing economies, it is access to external finance that is the primary challenge for firms. Indeed, it is this aspect of finance that receives the most attention in cross-country regressions (Demirguc-Kunt, Honohan, and Beck, 2008). The availability of external financing is crucial not only in the firm's potential for growth and development, but also in the efficiency of its operations (Gonzalez et al., 2007). According to research, the establishment and expansion of firms become successful in countries that provide a supportive environment, which includes among other things, easy access to finance. Financial access also aids existing firms to grow more by helping them utilize investment opportunities, expand their business operations, provide new products, perform crucial research and development activities, and acquire the latest advancements in equipment and technology (Pretorius and Shaw, 2004). Indeed, access to finance, unhampered by institutional weakness or frictions, aids growth as financial resources are distributed towards the most efficient uses, thereby enabling emerging businesses – especially small firms – and even existing firms to continuously develop (GPFI and IFC, 2011). Firms across countries have different financial structures to finance their operations and development. The different financial structures are influenced mainly by firm-specific characteristics and also by the limitations encountered depending on the countries' level of financial growth and financial environment (Claessens and Tzioumis, 2006). In addition, these are highly affected by the firm's choices and the options presented to them. In what form, from whom, how successfully, and at what cost firms are financed depend on an array of external

and internal factors. External financing depends on the ability of an entrepreneur to present a credible proposal, the nature and feasibility of the business plan, and the possible risks that come with it (Demirguc-Kunt, Honohan, and Beck, 2008). In the case of perfect capital and credit markets, Modigliani and Miller (1958) suggest that the investment behavior of a firm is irrelevant to its financing decisions and vice-versa. However, due to market imperfections, any financing constraint will affect firms' investment decisions, which can be identified through the sensitivity of investment with respect to internal sources of finance. A higher sensitivity of investment to internal funds indicates the presence of financing constraints (Claessens and Tzioumis, 2006). Access to finance or outreach of the financial system is often cited as one of most constraining features of a business environment that is favorable to firm growth, performance, and competitiveness (Beck, 2007; Aldaba, 2011). Along with corruption and uncertainty, access to finance is rated as a major constraint to firm growth by small and medium enterprises in both developed and developing countries (Aiyagari, Demirgüç-Kunt and Maksimovic, 2006; Beck, 2007). A lack of access to external finance indicates that a significant number of firms will not be able to outsource financing from formal financial institutions such as banks and other informal sources in order to start up, innovate, and develop (Aldaba, 2011). Firms in developing countries are hindered by a lack of access to financial services. While the use of financial services—often indicated by the existence of deposit accounts with banks—reaches over 90% in most high-income countries, this is but a small number in many low- and even middle-income countries where the use of formal financial services is still restricted to a small number of firms and households (Beck and dela Torre, 2006). In the Philippines, Aldaba et al. (2010) find that a shortage of working capital to finance new business plans, difficulties in obtaining credit from suppliers and financial institutions, insufficient equity, and the expensive cost of credit are some of the financing problems faced by firms. As in other developing countries, access to financial services should be a major concern for policymakers.

## 2. OBJECTIVE

Since access to finance is crucial to firm growth and development, the important policy question is: What determines firms' access to finance? To date, the literature has examined a variety of macroeconomic and microeconomic factors that influence firm financing—both firm-specific and external alike. However, less has been cited on how the changing global economic environment has affected access to finance by firms in developing economies. Needless to say, an increasingly globalized economy will bring more internationalization for small and medium enterprises (SMEs) to be integrated into a larger network of global value chains (GVCs) particularly for those in supporting industries, and bring new financing demands from SMEs. To support innovative financing models that are accessible to SMEs, national policymakers need to use more flexible and holistic policy approaches to SME financing, beyond measures already established. This research aims to contribute to the literature by examining the various factors that influence access to external finance of small and medium enterprises in the Philippines. Specifically, this study aims to shed light on the following research questions:

1. How does GVC participation affect SME's propensity to access and use external finance in the Philippines? What are the linkages?
2. How does the efficiency of customs and trade regulations affect SME's use of and access to external finance in the Philippines?
3. How does the quality of institutional environment influence the use of and access to finance of small and medium-size firms in the Philippines?

This research proposal proceeds as follows: Section III gives a brief survey of the literature on significant firm characteristics—i.e., firm's GVC participation among others, customs and trade regulations, the institutional environment, and how these variables are related to firm financing.

Section IV lays out the analytic framework and how we estimate an empirical model to examine the relationship between SME finance and its determinants. Section V describes the data to be used, as well as how variables are constructed. Section VI outlines the expected results, while Section VII provides expected policy recommendations.

### **3. REVIEW OF LITERATURE**

The literature suggests several possible determinants that may affect firms' access to finance. For one, constraint in financial access is the result of high transactions costs and institutional failures. Tendulkar and Bhavani (1997) state that behavioral and production risks and higher lending costs restrict small firms from gaining access to capital markets, which is essential to growth. OECD (2006) underlines the importance of a well-defined and well-enforced legal, institutional and regulatory framework in determining the firm's financial access. Indeed, Malhotra et al. (2007) argue that small firms' financial access is limited by great risks, information asymmetries and lack of knowledge regarding policy distortions. Zavatta (2008) claims that constraints to financial access are influenced by asymmetric information, high risk, transactions costs, and lack of collateral. In addition, some find firm-level characteristics to be the crucial determinants. For instance, Beck et al. (2004) find that firm size, age and ownership are some of the factors that affect firm's access and use of external finance.

#### **3.1. Firm Size**

Access to external financing is immensely being influenced by the firm's size; it is vital to determine the proportion between the firm's debt and its real assets (Burkart and Ellingsen, 2004). Larger firms are operationally diverse which provides them stability; thus, they are also least likely to collapse (Honohan, 2009). Cassar (2004) stipulates that small firms have difficulty in solving problems due to information asymmetry. Starting up and growing these firms is a struggle because of shortage of finance. Fatoki and Asah (2011) find that large firms are highly being favored for debt financing by commercial banks than small firms; therefore, firm size is of huge importance. Studies show that even after controlling for other firm characteristics, small firms report higher financing obstacles compared to medium and large firms (Beck, Demirgüç-Kunt, Laeven and Maksimovic, 2006). In some countries, the likelihood that a small firm reports access to finance as a major obstacle is 39%, while the probability for medium-size firms is 36% and 32% for large firms. Moreover, these findings somehow reflect the variation on firms' financing structures based on firm size. In terms of investment financing, 30% of large firms use bank credit, compared to 12% for small firms (Beck, 2007).

#### **3.2. Legal Status of the Firm (Incorporation)**

According to Dietmar et al. (1998), firms with limited liability are most likely to progress than firms with unlimited liability. The relationship between incorporation and access to external finance has many facets. One, the corporate entity being separate from its owners can boost the commitment of the managers to the firm's goals. Two, publication of their financial statements with the debt-to-equity ratio and the firm's assets are one of the legal requirements for corporations. This is for the investors to know and monitor the firm's status. Cassar (2004) states that lenders view incorporation as a good basis for the firm's credibility and commitment to operational laws. Abor (2008) finds that equity-debt decisions are greatly affected by the form of business organization. In limited firms, owners will not be exposed to financial liability and have boundaries to answer against losses incurred by the corporation; in contrary to unlimited firms, where owners have full liability on business losses. Hence, limited firms prefer equity financing over debt financing to raise capital for projects whereas for firms with unlimited form of business organization, debt financing is the only alternative.

According to the study conducted by Coleman and Cohn (2000) and Fatoki and Asah (2011), there is a positive correlation between debt financing and legal formation of business organization.

### **3.3. Foreign Ownership**

The literature points out that foreign-owned firms have better access to external finance. These firms have a larger international network where they can give guarantee for external debt by having access on the internal funds of the parent company or from being available as well on the international market. Foreign-owned firms, because of their network, have access to a larger international market besides that of the domestic and internal financial markets. Foreign firms, having international connections, can acquire the emerging developments in international markets like advancement in product standards quickly thus achieving better access to domestic banks (Weche Gelubcke and Wagner, 2014).

### **3.4. GVC Participation**

GVCs have become more popular and an indispensable modality in the global investment and trade system. A value chain is defined as the full range of value-adding activities to bring a product or service through different stages of production, and a GVC is a value chain that operates in more than one economy (APEC, 2014). “GVCs have evolved and spread in many business sectors, e.g., agribusiness, automotive, electronics, and handicraft. SMEs that participate in GVCs include material suppliers, parts and components suppliers, export-oriented manufacturers, subcontractors to multinational corporations (MNCs), distributors, and service sectors entering overseas markets. By being involved in GVCs, these SMEs expect to obtain new technology, improve product quality, enhance competitiveness, and, as a result, expand their businesses and create jobs. Meanwhile, they may face barriers to participating in GVCs, e.g., labor market rigidity, cross-border regulatory constraints, nontariff barriers, their inability to meet product quality standards, and their managerial deadlock with a lack of funds” (Shinozaki, 2015). GVCs basically comprise two models: vertical firm linkage and horizontal firm linkage. “The condition of access to finance is often different between SMEs involved in the vertical linkage and horizontal linkage models. Credit among corporations can be utilized for firms involved in the large-scale vertical firm linkage model, including SME suppliers. A large MNC or a lead firm may finance subcontractors and SME suppliers to promote the production process smoothly. A large MNC may establish a financing company and subcontractors can be financed by such an MNC-led financial institution, for instance. Meanwhile, SMEs in the horizontal firm linkage model have little connection with large MNCs, given that the lead firm is often an SME. SMEs in this model rely mainly on their own capital and retained profits for business operations, and are exposed to greater difficulties in access to formal finance. On the whole, financial accessibility differs according to the firm’s capability, regardless of GVC types, but it is estimated that access to finance is more crucial for firms in the horizontal firm linkage model. There are several financing models to be accessed by SMEs or developed for SME suppliers. Besides bank credit, nonbank financing instruments (e.g., leasing and factoring) and market-based financing (e.g., equity finance, mezzanine finance, and corporate bonds) are worth developing. This needs to be done with innovation, responding in a timely manner to the real funding needs of SMEs at different stages of production value chains. Crowdfunding is one such example of an innovative financing model to support SMEs that participate in GVCs. Supply chain finance is a concept of the best mix of diversified financing models, addressing the combination between trade finance and a technological platform that connects trade partners and financial institutions. Developing possible financing models and combinations to facilitate SMEs to integrate into GVCs is important” (Shinozaki, 2015).

### 3.5. Institutional Environment

Beck, Demirgüç-Kunt, Laeven and Maksimovic (2006) show that firms in countries with higher levels of institutional development report significantly lower financing obstacles than firms in countries with less developed institutions. The positive effect of financial and institutional development can be observed in the use of external finance. On the other hand, deficiencies in the legal and institutional environment can adversely affect bank financing (Demirgüç-Kunt and Maksimovich, 1998; Beck et al., 2005, Savafian and Wimpey, 2007). Furthermore, weaknesses in the legal and institutional environment may induce firms to conduct “informal” activities to get things done. In the literature, unevenly enforced and burdensome regulations (De Soto, 1989; Djankov et al., 2002; Loayza et al., 2005; Loayza and Rigolini, 2006), corruption (Friedman et al., 2000; Johnson et al., 2000), and financial development (Straub, 2005; Dabla-Norris et al., 2005) are said to be significantly associated with informal activities. As such, a “production” definition underlines the voluntary aspect of these unofficial activities which is seen as the consequence of an individual or firm choice, given state enforcement and the business environment (World Bank, 2007; Gatti and Honorati, 2008). However, there are costs associated in conducting informal activities. Studies show that firms cannot appeal to the courts to enforce its contracts if its activities are underground. In Russia and Ukraine, 90% of managers say that bribing government officials is normal to protect their business activities. A cost of operating informally is that the firm can rely less on the protection of the courts, making it harder for the firm to sustain contracts with its trading partners (Johnson et al., 2000). In addition, better legal quality implies a higher probability of detection of informal entrepreneurs, entailing higher costs of entry regulation requirements, such as licensing fees and compliance with standards (Dabla Norris, Grandstein, and Inchauste, 2005). Furthermore, informal activities can indirectly hamper firm growth through lack of infrastructure caused by deficits in the government revenue (Kleven et al., 2009). Thus, formality is intended to increase better access to public services such as financial services, infrastructure, better legal environment, and other public services, which facilitates enterprise growth (Straub, 2005; Ingram et al., 2007; Beck and Hoseini, 2014).

## 4. CONCEPTUAL FRAMEWORK

This section will present the preliminary analytical framework adopted and the empirical model by which we later interpret our estimates.

### 4.1. Analytical Framework

The empirical model of this paper will build on the theoretical model developed by Dabla-Norris and Koeda (2008), which starts with assuming a representative firm operating for two periods,  $i = 1, 2$ . The firm produces output according to a general production function of the form  $y_i = f(k_i)$ , where  $y_i$  is the firm's output and  $k_i$  is the working capital.<sup>1</sup> The firm's initial capital  $k_1$  is given in the first period. In the second period, the firm's capital stock  $k_2$  comes from the profits in the first period, as well as financing from external sources. The firm's capital stock in the second period is given by

$$k_2 = L + \pi_1 \quad (1)$$

where  $k_2$  is the firms' capital in period 2,  $\pi_1$  is its first-period profit, and  $L$  is the firm's external borrowing.

In each period  $i = 1, 2$ , the firm can operate fully in the formal sector or hide a fraction  $\alpha$  of its activity by operating informally to avoid tax and regulatory burdens.  $\alpha = 0$  implies full formality

<sup>1</sup> We assume a typical production function with  $f'(\cdot) > 0$  and  $f''(\cdot) < 0$ .

or compliance with existing taxes and regulations, and  $\alpha=1$  implies complete evasion of taxes or full informality. If the firm decides to operate formally, its income is subject to a tax burden  $T$ , which can be interpreted as the cost of complying with taxes, bribes, and burdensome regulations due to weaknesses in the tax and regulatory environment. On the other hand, if the firm operates informally, it faces a penalty  $P = C(\alpha)y$ , where  $P$  is increasing in  $\alpha$  and the firm's output  $y$ .<sup>2</sup> In both periods, the firm derives profits from its formal and informal operations. The income of a firm after incurring the tax and regulatory burden is given by  $(1 - \alpha_i)(1 - T)y_i$ , while the income generated from informal operations is  $\alpha_i y_i$ . The firm's profits in period 1 and 2 can then be written as:

$$\pi_1 = (1 - (1 - \alpha_1) T) y_1 - C(\alpha_1)y_1 \quad (2)$$

$$\pi_2 = (1 - (1 - \alpha_2) T) y_2 - C(\alpha_2)y_2 - (1 + r)L \quad (3)$$

where  $\pi_1$  is a function of level of informality  $\alpha_1$ , the associated tax burden  $T$ , and the corresponding fine  $C(\alpha_1)$  for operating informally; while  $\pi_2$  varies on  $\alpha_2$ ,  $T$ ,  $C(\alpha_2)$ , and external borrowing  $L$  in the second period. Moreover, we assume that the firm faces a credit ceiling  $\bar{L}$ , where the credit ceiling constraint given by

$$L \leq \bar{L}(\alpha_1; k_1, q),^3 \quad (4)$$

Which is a function of firm's reported sales, the level of its fixed assets,  $k_1$ , and the quality of legal and financial institutions,  $q$ . The credit ceiling is assumed to be decreasing with the firm's level of informality  $\alpha_1$ . Banks typically require official documentation or accounting data to verify firm's revenue so it can engage in legal contractual relationships. The associated lack of transparency due to hidden profits or sales increases information asymmetries between borrowers and lenders, which reduces the incentives for banks to lend. The credit ceiling is also assumed to be increasing with the initial level of capital ( $k_1$ ), which captures the size of the firm's assets that can be used as collateral. Banks tend to require collateral to overcome potential information asymmetry problem caused by borrowers' misrepresentation of their true assets. Thus, collateral serves as a signaling device that reveals the true riskiness of the borrower. Finally, credit ceiling is assumed to be increasing with the quality of legal and financial system ( $q$ ). This is in line with La Porta et. al (1997) and Djankov et. al (2007) who show that banks find it difficult to enforce contracts with the presence of deficiencies in the legal and institutional environment. Similarly, Demirguc-Kunt and Maksimovic (1998) find that in countries with a better legal system, more firms use long-term external financing. The firm's problem is formally given by:

$$\text{Max } \pi_1(\alpha_1) + \{\pi_2(k_2, L)\}$$

s.t.

$$k_2 = L + \pi_1$$

$$L \leq \bar{L}(\alpha_1; k_1, q)$$

<sup>2</sup> As the level of informality increases, it becomes more difficult for a registered firm to operate without being observed by the government and courts. See for instance Loayza (1996).

<sup>3</sup> We assume  $\bar{L}'(\cdot) < 0$ ,  $\bar{L}''(\cdot) < 0$ ,  $\partial \bar{L} / \partial q > 0$ ,  $\partial \bar{L} / \partial k_1 > 0$ .

$$\pi_1 = (1 - (1 - \alpha_1)T) f(k_1) - C(\alpha_1) f(k_1)$$

$$\pi_2 = (1 - (1 - \alpha_2)T) f(k_2) - C(\alpha_2) f(k_2) - (1 + r)L$$

$k_1$  is given.

We can distinguish between two cases: (i) when the credit ceiling constraint is not binding, i.e.  $L \leq \bar{L}(\alpha_1; k_1, q)$ , and (ii) when the credit ceiling constraint is binding, i.e.  $L = \bar{L}(\alpha_1; k_1, q)$ . When the credit ceiling constraint is binding, the model reduces the following two equations:

$$L = \bar{L}(\alpha_1; k_1, q). \quad (5)$$

And

$$\alpha_1 = h(T, q, k_1). \quad (6)$$

In a world of perfect and complete information, the firm's initial capital,  $k_1$ , would indeed serve as collateral that is perfectly observable to banks and other formal financial institutions. However, in an environment fraught with asymmetric information, these financial institutions might resort to other more easily verifiable firm-specific characteristics that would signal the firm's commitment and capacity to repay its debts. These firm-specific characteristics include the firm's age, size, type, etc. Dabla-Norris and Koeda's assumption that the firm's informal activities,  $\alpha_1$ , reduce the firm's access to bank financing, is hinged on the reasoning that these informal payments reduce the firm's net worth that can be declared and used as collateral, thereby reducing the firm's credit ceiling constraint. However, it is also possible that informal payments made by the firm to facilitate its operations in an environment of weak institutions, can increase its net worth, which, in turn, raises its credit ceiling constraints. In Nigeria, Malomo (2012) find strong evidence that the firm's propensity to spend on informal payments is related to its current and future "ability to pay." Svensson (2003) also find a significant link on the firm's "ability to pay" and capacity to make informal payments in Uganda. Moreover, Fungacova et. al (2014) find that in 14 transition countries, informal payments to officials "to get things done" is positively related to firm's bank-debt ratios. In this case, one can view informal payments as the firm's "coping strategy" in an environment of ill-defined property rights and weak enforcement. Thus, it is possible to have the credit ceiling,  $\bar{L}$ , as an increasing function of informal payments,  $\alpha_1$ . For this analysis, the model will be extended further to account for the effect of GVC participation and trade regulations on credit ceiling  $\bar{L}$ .

#### 4.2. Empirical Model

To investigate the determinants of firm's access to finance, we estimate the following empirical model:

$$Finance_{it} = \beta_0 + \beta_1 GVC_{it} + \beta_2 Trade_{it} + \beta_3 Institutional\ Environment_{it} + \beta_4 X_{it} + \beta_5 Z_{it} + \varepsilon_{it}$$

where  $i$  and  $t$  denote firm subscripts and year, respectively. Finance is either bank credit, informal credit, or non-bank credit. Bank credit is the percentage of the firm's use of credit from banks (private and state-owned banks) to finance either its working capital or new investment. Informal credit variable measures the extent to which firms rely on moneylenders or family and friends for its external financing. Non-bank credit is the proportion of the firm's external



borrowing from non-bank financial institutions. The first variable of interest, GVC, captures the firm's participation in a global value chain network. Due to paucity of data, GVC participation will be captured roughly by the firm's type of establishment, i.e.: if (1) the firm is a headquarter (HQ) without production and/or sales in the country; (2) HQ with production and/or sales in the country; (3) a firm that is physically separated from HQ and other establishments of the same firm; or (4) a firm that is physically separated from HQ but with other establishments of the same firm. The GVC variable is also a measure of whether the firm is an indirect exporter, i.e. a firm that sold domestically to third party that exports products, and whether the firm uses a technology that is licensed from a foreign-owned company. The second variable of interest, Trade, captures the extent to which customs and trade regulations serve as an obstacle to the current operations of the establishment. Meanwhile, the quality of institutional environment is proxied by informal payments variable. Informal payments variable is the percentage of total annual sales allotted as informal payments to avoid tax and regulatory burdens. This variable can be interpreted as the "costs" that would not have been incurred if firms operate in a good institutional environment, which also surmounts the financing obstacles faced by firms. Thus, this variable captures the weaknesses in the legal and institutional environment.  $X$  is the vector of other firm-specific dummies which include firm size, age and ownership, while  $Z$  is the vector of other obstacle dummies, including the prevalence of corruption, business license and permits, and political instability. To understand the determinants of SME finance, we explore two sets of dependent variables that capture the extent of the firm's use of and access to external finance, and the likelihood that firms are actually able to access external finance for their financing needs. We construct continuous dependent variables for each of the SME finance indicators—bank credit, informal credit, and non-bank credit to capture the extent of the firm's use of external finance ( $finance_C$ ). Further, we also construct a corresponding dummy variable for each of these indicators, to capture this time the likelihood that firms rely and are able to access external finance for their internal financing needs ( $finance_D$ ). To confirm robust empirical findings, several estimation methods will be used. For specifications with continuous dependent variables, ordinary least squares (OLS) random effects, OLS fixed effects, random intercept model, and random coefficient model regressions will be employed to control for unobserved heterogeneity across regions and industries. For models with binary dependent variables, panel probit regression, random intercept model, and generalized structural equation model (GSEM) will be used as these are the common estimation methods used for models with limited dependent variables. Both simple linear and multiple linear regressions will be conducted to check for individual effects of each of the explanatory variables on firm's use and access to finance, and to capture the effects of each variable while controlling for the rest of parameters.

## 5. METHODOLOGY: DATA AND SUMMARY STATISTICS

This research employs the World Bank Enterprise Survey in the Philippines for 2009 and 2015. The enterprise survey aims to gather information and perception about the business environment in the country to develop new policies and programs that enhance employment and economic growth. The firm samples are taken using stratified random sampling to obtain unbiased estimates, as well as to make sure that the final total sample of 1,326 firms in 2009 and 1,335 firms in 2015 include establishments from various sectors and that it is not concentrated in one or two industries, sizes, and regions. However, firms from the agricultural sector are not included in the survey. The firm-level dataset reports detailed information on firm size, employment, age, industry, ownership, legal status, governance, and financing, as well as specific factors affecting business operations such as level of tax rates, prevalence of corruption, and difficulty in securing business permits. For this study, three dependent variables are constructed based on Dabla-Norris and Koeda's (2008) model to measure the extent and

likelihood to which SMEs rely on external credit for their internal financing needs. The first variable, bank credit, measures the extent and likelihood of the firm's use of formal credit from banks (private and state-owned banks) for its external financing of working capital or new investment. The variable is constructed based on the survey responses about the proportion of the establishment's working capital that is financed through bank financing. In the survey, 24.07 percent of the firms in 2009 and 14.82 percent of the firms in 2015 use bank financing to meet external financing needs. Correspondingly, the average proportion of working capital that was financed through bank credit is 10.36 percent in 2009, and 7.07 percent in 2015. The second dependent variable, informal credit, measures the extent and likelihood to which firms rely on moneylenders or family and friends to finance its working capital. In the sample, 4.93 percent of the firms in 2009 and 1.81 percent of the firms in 2015 use informal credit sources for external financing. Correspondingly, the average proportion of working capital that was financed through informal credit is 1.94 percent in 2009, and 0.85 percent in 2015. The third dependent variable, non-bank credit, measures the extend and likelihood to which firms rely on non-bank financial institutions to finance its working capital. In the sample, 3.04 percent of the firms in 2009 and 1.35 percent of the firms in 2015 use non-bank credit to meet external financing needs. Correspondingly, the average proportion of working capital that was financed through non-bank credit is 0.89 percent in 2009, and 0.62 percent in 2015. Meanwhile, several variables are also constructed to explore the determinants of SME finance. The first explanatory variable, GVC, captures firm's GVC participation and is measured in three ways: (1) firm's type of establishment, (2) indirect exports, and (3) use of foreign technology. Due to paucity of data in the survey, the proposed measures serve as simple proxies for GVC participation. The first GVC measure, firm type, is a survey response to the question on whether: (a) the firm is a headquarter (HQ) without production and/or sales in the country; (b) a firm is an HQ with production and/or sales in the country; (c) a firm that is physically separated from HQ and other establishments of the same firm; or (d) a firm that is physically separated from HQ but with other establishments of the same firm. In the sample, only 10.44 percent of the firms in 2009 belong to any of these categories while in 2015, only 18.43 percent of the firms have responded to whether they belong to category (a) or (b). The second measure, indirect exports, is a dummy variable equal to 1 if the firm has at least a percentage of indirect exports on its sales—i.e., products that are sold domestically to third party that export products, 0 otherwise. 10.37 percent of the firms in the sample in 2009 are indirect exports, while the proportion inched up to 12.37 percent in 2015. The third measure, foreign technology, is a dummy equal to 1 if the firm uses a technology that is licensed from a foreign-owned company. In the sample, 14.12 percent of the firms in 2009 and 11.36 percent of the firms in 2015 utilizes foreign technology in the production. The second dependent variable, Trade, captures the quality of customs and trade regulations in the business environment. Dabla-Norris and Koeda's (2008) analytical framework shows that regulatory burdens reduce the use of bank credit by encouraging informality and discouraging investment demand. To test this prediction, firm managers in the survey are asked whether customs and trade regulations hinder the current operations of the business. The ratings are quantified from 0 to 4, with 0 denoting no obstacle, 1 a minor obstacle, 2 a moderate obstacle, 3 a major obstacle, and 4 a very severe obstacle. Thus, the trade dummy variable takes on the value 1 if the firm reports the level of customs and trade regulations as “moderate”, “major”, and “very severe” obstacle (responses 2, 3, and 4), zero otherwise. In the sample, 22.21 percent of the firms in 2009 and 28.49 percent of the firms in 2015 report customs and trade regulations as a constraint to the business operations. The third dependent variable, informal payments, captures the quality of institutional environment in the country and is retrieved from the answer to the following question in the Enterprise Survey: “It is said that establishments are sometimes required to make gifts or informal payments to public officials to ‘get things done’ with regard to customs, taxes, licenses, regulations, services, etc. On average,

what percentage of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?" Informal payments variable is the percentage of total annual sales allotted as informal payments to avoid tax and regulatory burdens. This variable can be interpreted as the "costs" that would not have been incurred if firms operate in a good institutional environment. Thus, informal payments variable captures the failures and weaknesses in the legal and institutional environment. In the survey, 18.69 percent of the firms in 2009 and 67.86 percent of the firms in 2015 pay informal payments to facilitate business operations, with 60 percent as the highest percentage of total annual sales allotted for informal payments. The survey also contains information on firm size, age, ownership, industry, structure, and operations, all of which are used to control for differences in firms' propensity to access and use external finance. Beck et al. (2006) show the importance of firm size, age, and ownership in the availability of external finance using the World Business Environment Survey data on a sample of 10,000 firms across 80 countries. Based on employment size, the survey defines firms of different sizes: small, medium, and large (small  $\geq 5$  and  $\leq 19$ , medium  $\geq 20$  and  $\leq 99$ , and large  $\geq 100$ ). In the sample, 34.01 percent of the firms in 2009 and 33.19 percent in 2015 are small firms, 36.09 percent of the firms in 2009 and 35.20 percent in 2015 comprise the medium-size ones, and 26.96 percent of the firms in 2009 and 31.61 percent of the firms in 2015 are large. Empirical studies show that smaller firms are more credit-constrained than larger firms, in part due to market imperfections and greater information asymmetries associated with lending to such firms (Beck et al., 2005). Moreover, small firms are likely to use informal credit instead of bank credit, while large firms are more likely to use bank credit to finance new investment (Beck, 2007). Meanwhile, in terms of industry classification, 81.79 percent of firms in the survey are in the manufacturing sector, 1.05 percent are in the construction sector, while 17.16 percent are in the services sector. 64.59 percent of the firms in 2009 and 63.28 percent in 2015 have at least a female owner in the business. In addition, 23.89 percent or 316 firms have at least a percentage of the firm owned by private foreign individuals, companies, or organizations. Among these firms, 45.25 percent or 143 firms are fully owned by private foreign individuals or companies. Dummy variables are also constructed to capture firm transparency of the enterprise which may affect its propensity of using external finance. Firms can try to reduce the information asymmetries the investors face by becoming more transparent, for instance, through reporting their balance-sheets and having them audited by an auditing company. Audit is a dummy variable which takes on the value 1 if the establishment has its annual financial statements checked and certified by an external auditor, 0 otherwise. 90.55 percent of the firms in 2009 and 83.72 percent of the firms in 2015 have their financial statements checked by an external auditor. Inspection is a dummy variable which takes on the value 1 if the establishment is visited by tax officials. 86.04 percent of the firms in 2009 and 66.70 percent of the firms in 2015 are visited by tax officials. In the literature, lack of transparency increases information asymmetries in the borrower-lending relationship, thus reducing incentives for banks to lend. In addition, firms that report proper documentation such as audited financial statements increase the propensity of firms to access bank finance. Moreover, dummy variables are constructed to capture the quality of the legal and contractual environment within which firms operate. The court variable takes on the value 1 if the firm manager tends to agree and strongly agrees that the court system is fair, impartial, and uncorrupted (responses 3-4), zero otherwise. 42.73 percent of firms in 2009 and 46.50 percent in 2015 believe that the court system is fair, impartial, and uncorrupted. This variable serves as a rough proxy for enforcement strength, as it captures the quality of the legal environment within which firms operate. Permits is a dummy variable which takes on the value 1 if the manager reports business licensing and permits as "moderate", "major", and "very severe" obstacle (responses 2, 3, and 4) to the establishment, 0 otherwise. In the sample, 21.94 percent of the firms in 2009 and 20.69 percent in 2015 report business licensing and permits as

“moderate”, “major”, and “severe” obstacle to the business. Firms which are constrained to secure business license and permits may find it difficult to access bank credit, which in turn gives them an incentive to resort to informal financing.

## **6. EXPECTED RESULTS**

This section briefly outlines the expected relationship between the set of explanatory variables to SME finance based on preliminary findings and the existing literature.

### **6.1. GVC Participation: Foreign Technology**

Technology, which is a significant factor of production, improves competitiveness and reduces production risk and thus enables enterprises to have better financial access. Demircuc-Kunt, Honohan, and Beck, (2008) find that innovation is positively associated with the availability of external finance. In addition, Ahmed et al (2016) claim that online business loans seem to fill the SME funding gap left in the wake of the 2008 financial crisis. The study finds that a high proportion of PayPal Working Capital (PPWC) benefit young and minority-owned businesses with low and moderate income. Almost 35 percent of PPWC loans go to low and moderate-income firms compared to 21 percent of retail bank loans. In addition, 61 percent of PPWC loans go younger firms (less than 5 years). Further, 53 percent of Kiva Zip’s loans go to women-owned businesses and 63 percent to minority-owned businesses compared to 36 percent and 14.6 percent of traditional retail bank loans, respectively.

### **6.2. Institutional environment: Informality**

A research study in the Philippines found that spending on informal activities increases the use of the firm’s propensity to use external finance, which robustly holds even after controlling for the firm’s general characteristics, location, and industry. This confirms the findings of Fungacova et. Al. (2014) wherein informal payments facilitate firm’s access to bank loans. These informal payments in the face of financing obstacles, in turn, is what impacts positively on the firm’s access to bank credit and to credit extended by other financial institutions. This might perhaps be due to a positive revenue effect that ultimately manifests in a higher net worth and “ability to pay” that puts these firms in better stead with banks and other financial lending institutions. Alternatively, these results suggest the very likely possibility that it is firms that have the capacity to “grease” their way into obtaining external credit are also the firms that have the necessary firm-specific characteristics that banks and other non-bank financial institutions require to mitigate information asymmetry issues. As spending on informal activities signals weaknesses in the legal and institutional environment, the existence of informal activities engaged in by the firm signals its capacity to also meet with the loan requirements of banks and non-bank institutions. Thus, instead of being a hindrance to credit access, informal activities seem to serve as a complementary expenditure or “grease” that enables the firm to surmount its financing obstacles and increases the likelihood of the its access to external finance. This is further consistent with the findings of Weill (2011a) who show that informal activities may enhance bank financing. In addition, Chen, Liu and Su (2013) observe a positive link between firms’ spending on informal activities and the importance of firms’ bank credit in China.

### **6.3. Firm Size**

Aldaba (2011) finds that in the Philippines, external finance from large banks and financial institutions hardly benefits small and medium-sized firms. Kira and He (2012) find that in Tanzania, large firms have higher access to external financing compared to SMEs which is attributed primarily to economies of scale. Large firms find easier access from banks for expansion, manage to purchase in large-scale capital, and employ high-skilled labor which in

turn increases productivity and profitability. Beck et al. (2004) also find that larger firms enjoy increased access to finance. Beck et al (2006) report that small firms finance less than ten percent of their investment needs with bank credit, while large firms finance more than 20% of their working capital using bank financing. Also, compared to small firms, large firms have a significant advantage in trade credit and development finance. These results are consistent with the hypothesis that larger firms are more likely to have better access to external finance. GPFI and IFC (2011) further confirm this result. Small and medium firms experience difficulty with access to finance than larger firms, such as higher interest rates, shorter maturity, and more stringent collateral requirements. The smaller a firm, the more difficulty it is to access external finance. A survey of European businesses finds that large SMEs (50+ employees) are more likely to apply for bank loans than micro-SMEs (1-9 employees). A Federal Reserve Bank study confirms this trend in the U.S., noting that financial institutions consider micro-SMEs as high-risk and expensive clients (i.e., high transaction costs and low returns). The study also finds that due to prohibitive application costs and low loan prospects, 20 percent of all SMEs are discouraged to apply for bank loans. Thus, SMEs no longer consider bank financing as a likely credit source.

#### **6.4. Firm Age**

In line with previous studies, empirical findings suggest that firm age is positively related to access to finance. In Tanzania, Kira and He (2012) claim that older firms find easier access to debt financing than younger firms. Using a survey data on a sample of over 10,000 firms from 80 countries, Beck et al (2004) find that that older firms report less financing obstacles than younger firms. Klapper et.al (2010) discover that firms with less than 5 years (younger firms) in operation are less likely to rely on debt financing from lenders. Ngoc, Le and Nguyen (2009) support the argument that younger firms face hardship and more costs in accessing external financing from lenders due to information asymmetry. Further, Robb (2002) finds that older firms use more equity (internal) finance compared to debt (external) finance at a ratio of 62.3:37.7, which supports the empirical evidence that access to finance increases at a decreasing rate with firm age.

#### **6.5. Female Ownership**

Given the seeming bias for small and medium enterprises, formal institutions of credit might favor lending to women entrepreneurs in small and medium enterprises, as they are found to be more responsible in both handling the business and in repaying debts. Moreover, there is now more gender sensitiveness, which might also account for a positive, significant relationship of female ownership and access to external finance. This empirical evidence on female ownership is in line with several studies in the literature. For one, the Grameen Bank study suggests that women participants in credit programs are “more conscious of their rights, better able to resolve conflicts, and have more control over decision making at the household and community levels” (Chen, 1992). Also, Bruhn (2009) does not find any evidence for a gender gap in access to credit by enterprises in Latin America. In Senegal, Seck et. al (2015) find no evidence that women are discriminated in the credit market. Aterido et. al (2013) also confirm the disappearance of gender gap in terms of access to external finance.

#### **6.6. Foreign Ownership**

Studies related to foreign ownership and access to finance show mixed results. On one hand, this empirical result is consistent with the findings of Weche Gelubcke and Wagner (2014) who show that in Germany, foreign-owned firms in the manufacturing sector on the average show slightly more financing restrictions than domestically owned enterprises. This is further in line with the findings in this paper, since most of the firms in the sample are manufacturing firms.

Kersting and Gorg (2014) also find that foreign-owned firms report higher use of internal funds and lower use of bank loans to cover costs using firm-level data for over 60 countries. In contrast, Azzam et al (2013) find that in Egypt, foreign ownership significantly increases the debt ratio (DR) in companies in the construction and financial service sectors, which can be explained by the superior ability of foreign-owned firms to have access to finance. Dabla-Norris and Koeda (2008) also note that foreign-owned firms use significantly greater bank finance and report to be less financially constrained. In addition, Beck et al (2004), using a survey data on a sample of over 10,000 firms from 80 countries, find that foreign-owned firms report less financing obstacles.

## 7. EXPECTED POLICY IMPLICATIONS

In light of these expected findings, there should be a call for government intervention to significantly reduce the tax and regulatory burdens in the country to discourage informal activities engaged in by the firm. In addition, the government should strengthen the quality of the legal system and level of enforcement to better enforce legal contractual relationships between firms and formal financing institutions, such as banks. This policy will further reduce the size of informality in the economy and will thereby encourage bank borrowing by all firms, irrespective of size, age, and ownership. The government should also create policies that will make sources of financing (commercial banks, finance companies, micro finance institutions and other sources) adjust their limiting regulations and operations as to not dishearten the borrowers into creating more businesses. The government should also offer more credit facilities or more alternative financing for firms especially to SMEs. In addition, the government through Central Bank should create strategies to motivate commercial banks to increase financing opportunities to SMEs. The government should also establish a bank to deal with external financing to encourage entry and expansion of firms (Kira and He, 2012). In the Philippines, SME policies and programs have evolved over time. Their focus shifts from inward-looking to a more externally-oriented approach. The government policies on SMEs during the 1990s are focused on improving market access, export expansion, and increasing competitiveness. The Magna Carta for Small Enterprises is passed in 1991 to create a unified framework using all government programs for the promotion and development of SMEs. Under the Magna Carta, lending institutions such as banks and non-bank financial institutions are also required to set aside 8% of their total loan portfolio to SMEs (Aldaba, 2011). Altogether, this indicates the policies that level the playing fields between firms of different sizes and allow for entry of new enterprises has shifted away from size-oriented policies. Small firms experience more difficulties from financing as compared to large firms; size does not matter much but the potential of a firm to expand and the jagged playing field for firms that the institutional and market failures bring about. These imply that emphasis must also be put on policies that would help SMEs gain more and easier access on financing specific to the firm's size and risk (Beck, 2007). The gap between small and large firms has been bridged by the help of financial and institutional developments. Beck, Demirgüç-Kunt and Maksimovic (2005) suggests that firm growth in countries with strong, better and well-developed financial and legal systems have been least effected by growth obstacles. This can be more significant for small firms than for large firms and more detailed country comparison can confirm this.

## LITERATURE:

1. Abor, J. (2008). "Determinants of the Capital Structure of Ghanaian firms." *Small Business Economics*.
2. Ahmed, U., T. Beck, C. McDaniel, and S. Schropp. (2016). "Filling the Gap: How Technology Enables Access to Finance for Small and Medium-Sized Enterprises." *Innovations* Vol. 10, No. 3-4.

3. Aiyagari, M., A. Demirguc-Kunt, and V. Maksimovic. (2007). "Firm Innovation on Emerging Markets," World Bank Policy Research Working Paper 4157.
4. Aldaba, R. (2011). "SMEs Access to Finance: Philippines," in Harvie, C., S. Oum, and D. Narjoko (eds.), Small and Medium Enterprises (SMEs) Access to Finance in Selected East Asian Economies. ERIA Research Project Report 2010-14, Jakarta: ERIA. pp.291-350.
5. Aldaba, R., E. Medalla, F. del Prado, and D. Yasay. (2010). "Integrating SMEs into the East Asian Region: The Philippines." PIDS Discussion Paper Series no. 2010-31. Makati City: Philippine Institute for Development Studies.
6. Asia-Pacific Economic Corporation (APEC). (2014). "Integrating SMEs into Global Value Chains: Policy Principles and Best Practices." Issues Paper. No. 6. APEC Policy Support Unit.
7. Aterido, R., T. Beck, and L. Iacovone. (2013). "Access to Finance in Sub-Saharan Africa: Is There a Gender Gap?" World Development Vol. 47, pp. 102-120.
8. Azzam, I., J. Fouad, and D. Ghosh. (2013). "Foreign Ownership and Financial Performance: Evidence from Egypt." International Journal of Business, 18(3).
9. Beck, T. (2007). "Financing Constraints of SMEs in Developing Countries: Evidence, Determinants, and Solutions." World Bank Working Paper.
10. Beck, T. and M. Hoseini. (2014). "Informality and Access to Finance: Evidence from India," Center Discussion Paper Series No. 2014-052.
11. Beck, T., A. Demirguc-Kunt, and V. Maksimovic. (2005). "Financial and Legal Constraints to
12. Beck, T., A. Demirgüç-Kunt, L. Laeven and V. Maksimovic. (2006). "The determinants of financing obstacles," Journal of International Money & Finance.
13. Beck, T., and A. dela Torre.(2006). "The Basic Analytics of Access to Financial Services." World Bank Policy Research Working Paper 4026.
14. Bruhn, M. (2009). "Female-owned firms in Latin America: Characteristics, performance, and obstacles to growth." World Bank Policy Research Working Paper 5122.
15. Burkart, M. C., & Ellingsen, T. (2004). "In-kind Finance: A Theory of Trade Credit." American Economic Review, 94(3), 569-590.
16. Cassar, G. (2004). "The financing of business start-ups." Journal of Business Venturing, 19(2), 261-283.
17. Chen, M. (1992). "Impact of Grameen Bank's Credit Operations on its Members: Past and Future Research." (Mimeo).
18. Chen, Y., Liu, M. and Su, J. (2013). "Greasing the Wheels of Bank Lending: Evidence from Private Firms in China," Journal of Banking and Finance 37, 2533–2545.
19. Claessens, S. and K. Tzioumis. (2006). "Measuring Firm's Access to Finance." World Bank.
20. Dabla-Norris, E., M. Gradstein and G. Inchauste. (2005). "What causes Firms to Hide Output?" The Determinants of Informality, Journal of Development Economics, 85(1-2), 1-27.
21. Dabla-Norris, Era and J. Koeda. (2008). "Informality and Bank Credit: Evidence from Firm-Level Data," IMF Working Paper.
22. Demirgüç-Kunt, A. T. Beck, and P. Honohan. (2008). "Finance for all: Policies and pitfalls in expanding access," World Bank Policy Research Report.
23. Demirguc-Kunt, A., and V. Maksimovic, 1998, "Law, Finance, and Economic Growth," Journal of Finance, Vol. 53, pp. 2107-37.
24. Demirgüç-Kunt, A., L.F. Klapper and G.A. Panos. (2008). "Entrepreneurship in Post-Conflict Transition: The Role of Informality and Access to Finance," World Bank Policy Working Paper.

25. Dietmar, H., Stahl, K., & Woywode, M. (1998). "Legal Form, Growth and Exit of West-German firms—Empirical Results for Manufacturing, Construction, Trade, and Service Industries." *Journal of Industrial Economics*, 46, 453-488.
26. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank.
27. Fatoki, O. and F. Asah. (2011). "The Impact of Firm and Entrepreneurial Characteristics on Access to Debt Finance by SMEs in King William's Town, South Africa," *International Journal of Business and Management* Vol. 6, No. 8.
28. Fungacova, Z., A. Kochanova, and L. Weill. (2014). "Does Money Buy Credit? Firm-Level Evidence on Bribery and Bank Debt." Bank of Finland, BOFIT Discussion Papers 4.
29. Gatti, R. and M. Honorati. (2008). "Informality among Formal Firms: Firm-Level, Cross-Country Evidence on Tax Compliance and Access to Credit," World Bank Policy Research Working Paper.
30. Global Partnership for Financial Inclusion (GPFI) and International Finance Corporation (IFC). (2011). "Strengthening Access to Finance for Women-Owned SMEs in Developing Countries." International Finance Corporation.
31. Gonzalez, R., J. Lopez, and J. Saurina. (2007). "Determinants of Access to External Finance: Evidence from Spanish Firms." Federal Reserve Bank of San Francisco Working Paper 2007-22.
32. Growth: Does Firm Size Matter?" *Journal of Finance*, Vol. 60, pp. 137–177.
33. Honhyan, Y. (2009). "The Determinants of Capital Structure of the SMEs: An Empirical Study of Chinese listed Manufacturing Companies."
34. Ingram, M., V. Ramachandran and V. Desai. (2007). "Why Do Firms Choose to be Informal? Evidence from Enterprise Surveys in Africa," Working Paper.
35. International Finance Corporation. (2013). "Women-Owned SMEs: A Business Opportunity for Financial Institutions."
36. Johnson, S., D. Kaufmann, J. McMillan and C. Woodruff. (2000). "Why do Firms Hide? Bribes and Unofficial Activity after Communism," *Journal of Public Economics*, 76, 495-520.
37. Kersting, E. and H. Gorg. (2014). "Vertical Integration and Supplier Finance." Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Paper No. 168.
38. Kira, A. and Z. He. (2012). "The Impact of Firm Characteristics in Access to Financing by Small and Medium-sized Enterprises in Tanzania." *International Journal of Business and Management*, 7(24).
39. Klapper, L., Laeven, L., & Rajan, R. (2010). "Entry regulation as a barrier to entrepreneurship. *Journal of Financial Economics*," 82(3), 591-623.
40. La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 1997, "Legal Determinants of External Finance," *Journal of Finance* Vol. 52, pp. 1131–1150.
41. Loayza, Norman. (1997). "The Economics of the Informal Sector: A Simple Model and some Empirical Evidence from Latin America," World Bank Policy Research Working Paper.
42. Malhotra, M., Y. Chen, A. Criscuolo, Q. Hamel, and Y. Savchenko. (2007). "Expanding Access to Finance: Good Practices and Policies for Micro, Small and Medium Enterprises." Learning Resources Series, World Bank Institute, World Bank, Washington D.C.
43. Malomo, F. (2012). "Factors Influencing the Propensity To Bribe and Size of Informal Payments: Evidence from Formal Manufacturing Firms in Nigeria." University of Sussex.
44. Modigliani, F., and M. Miller. (1958). "The cost of capital, corporation finance and the theory of investment. *American Economic Review*," 48(3), 261-295.



45. Ngoc, T. B., Le, T., & Nguyen, T. B. (2009). "The impact of networking on bank financing: The case of small and medium enterprises in Vietnam." *Entrepreneurship Theory and Practice*, 33(4), 867-887.
46. Organization for Economic Cooperation and Development (OECD). (2006). "The SME Financing: Theory and Evidence," Volume 1, OECD.
47. Pretorius, M. and G. Shaw. (2004). "Business plan in bank-decision making when financing new ventures in South Africa." *South African Journal of Economics and Management Science*, 7(2), 221-242.
48. Robb, Alicia M. (2002) "Small Business Financing: Differences Between Young and Old Firms," *Journal of Entrepreneurial Finance and Business Ventures*: Vol. 7: Issue. 2, pp. 45-64.
49. Savafian, M., and J. Wimpey, (2007). "When do Enterprises Prefer Informal Credit?" *World Bank Policy Research Working Paper* 4435.
50. Seck, A., A. Araar, K. Camara, F. Diallo, N.K. Diop, and F. Fall, (2015). "Female Entrepreneurship, Access to Credit, and Firm's Performance in Senegal." *Partnership for Economic Policy Working Paper* 2015-14.
51. Shinozaki, S. (2015). "Financing SMEs in Global Value Chains," in *Asian Development Bank Institute and Asian Development Bank, Integrating SMEs Into Global Value Chains: Challenges and Policy Actions in Asia*. pp.66-100.
52. Straub, S. (2005). "Informal Sector: The Credit Market Channel, *Journal of Development Economics*," 78(2), 299-321.
53. Svensson, J. (2003). "Who Must Pay Bribes and How Much? Evidence from a Cross Section of Firms," *Quarterly Journal of Economics* 118, 207–230.
54. Tendulkar, S. D. and T. A. Bhavani, (1997). "Policy on Modern Small-Scale Industries: A Case of Government Failure," *Indian Economic Review*, 32(1): 39-64.
55. Weill, L. (2011a). "Does Corruption Hamper Bank Lending? Macro and micro evidence," *Empirical Economics* 41, 25–42.
56. World Bank. (2007a). "Informality: Exit and Exclusion," Washington, D.C.
57. Zavatta R. (2008). "Financing Technology Entrepreneurs and SMEs in Developing Countries," Washington D.C. World Bank.

# **RISK MANAGEMENT ACQUISITION AND MAINTENANCE OF AIRCRAFT C-130 HERCULES OF INDONESIAN AIR FORCE IN SUPPORTING STATE DEFENSE**

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## **ABSTRACT**

*C-130 Hercules aircraft have been used by the Indonesian National Army since 1960 to carry out various missions in order to support the country, both military war operations (Operasi Militer Perang/OMP) and military operations other than war (Operasi Militer Selain Perang/OMSP). The demands of the Indonesian Air Force (TNI AU) using C-130 Hercules require good management planning from procurement planning to increasing effectiveness in supporting the state defense. Based on this background, this study seeks to analyze the application of risk management in the C-130 Hercules aircraft procurement owned by the Indonesian Air Force and the factors that influence it. This research is qualitative using gap analysis as a data analysis technique. The results of the study found that risk management on the procurement of the C-130 Hercules Aircraft owned by the Indonesian Air Force has been implemented well, but it has not been maximally caused by factors of budget, human resources, infrastructure, and material availability to support aircraft maintenance. To improve risk management on procurement C-130 Hercules Aircraft of Indonesian Air Force, the government needs to increase the maintenance budget of the C-130 Hercules Aircraft of Indonesian Air Force in order to increase the capacity and infrastructure to support the transportation infrastructure of the Air Force C-130 Hercules aircraft.*

**Keywords:** Risk Management, Procurement Of Defense Good, C-130 Hercules, Indonesian Air Force (Tni Au)

## **1. INTRODUCTION**

Implementation of the development of military capabilities in carrying out a military operation as the main task of national defense is not easy. The formulation of specific scenarios becomes increasingly difficult in order to deal with complex and unpredictable threats resulting in various problems. From the economic dimension, affordability or capability in the procurement of defense and security equipment (alpahankam) and equipment is very limited due to limited budget allocation for defense. That makes the State pay more attention to the management of its weapons procurement by prioritizing the principles of effectiveness and efficiency. Lately the paradigm has emerged that when the military experiences a transition from wartime to peacetime status, then peace, people tend to think that the value of defense sector preparedness

is not too important. It should be understood that the end of a war or other type of threat will not eliminate the potential threat that will reappear someday [1] (Betts, 1995), but instead, conditions that arise are contrary to the phenomena of thought, with many accidents occurring due to the readiness of the Indonesian National Armed Forces (TNI/Tentara Nasional Indonesia) such as the C-130 Hercules. The C-130 Hercules has been used by the Indonesian Air Force (TNI AU) since 1960. The aircraft was chosen by the Indonesian Air Force because of its durability, ability to land and fly from short runways, and specifications that can be used for various missions, including cargo transportation goods, human jumpers, and medical evacuations. However, since the beginning of the use of the C-130 Hercules by the Indonesian Air Force, there have been many accidents that have caused many human victims, economic losses and environmental damage. The most recent accident occurred on 18 December 2016, the C-130 Hercules Aircraft belonging to the Indonesian Air Force was reported missing and found crashed after crashing into Mount Pugima in Minimo Village, Maima District, Jayawijaya Regency, Papua Province. According to the Deputy Chief of Staff of the Air Force, Air Marshal Hadiyan Sumintaatmadja, the accident occurred due to external factors, namely the weather. However, he said that the matter would be reviewed based on 5 main factors, including human, material, media, mission and management to comprehensively understand the causes of this plane crash. Various accidents that have occurred on the C-130 Hercules Aircraft prove that there are unfavorable conditions or unpreparedness in the operation of the Hercules Aircraft. If we observed from the factors that caused the accident, this research will focus on two main factors: internal and external. Internal factors include: man, method, material, money, and machine. While external factors include weather, conditions and the environment that caused the accident on the C-130 Hercules aircraft. The first accident occurred on 3 September 1964, C-130 Hercules belonging to the Indonesian Air Force (AURI) with registration number T-1307 carrying 47 members of the Tjepat Motion Force and piloted by Lt. Col. Djalaludin Tantu was declared missing after losing contact while carrying out Dwikora operations. After that, the C-130 Hercules accident occurred at Mount Sibayak, North Sumatra with the registration number T-1322 crashing into a mountain and fell in the Sibayak area on the Medan-Padang route. Although many accidents have occurred due to C-130 Hercules aircraft, the Indonesian Government needs the aircraft to meet logistical needs in remote areas. Historically, Indonesia was the first country (besides the United States) to use the C130-B Hercules as a gift from US President John F. Kennedy for the release of pilot Allen Pope by Indonesian President Soekarno in 1958. HS (long body), 1 C-130 MP (maritime patrol), 1 piece of L-100-30 and 6 pieces of L100-30s. Actually, United States embargoed Indonesia in 1998, when there was political turmoil in Indonesia. The Government of Indonesia continues to purchase the C-130 Hercules aircraft even though as time goes by, the United States as the producer of the C-130 Hercules has imposed sanctions and there have been several accidents on the C-130 Hercules. In 2009, Indonesian Defense Minister Juwono Sudarsono stated that 70% of the Indonesian military budget would be used to purchase C-130 Hercules aircraft. This continues to be done by the Government of Indonesia until now. In 2012, the Indonesian Government again purchased the C-130 Hercules aircraft which were purchased from the Australian Government. The aircraft was purchased by the Indonesian Government after being used by Australia for 34 years since 1978. After seeing the chronology of the purchase of the C-130 Hercules aircraft above, the main reason for the Government of Indonesia to continue to buy C-130 Hercules aircraft that have been used by other countries is because the price is cheaper than the purchase of the new C-130 Hercules aircraft. According to former Defense Minister Purnomo Yusgiantoro, the purchase of the C-130 Hercules aircraft was only \$ 15 million while for the purchase of a new Hercules aircraft the Indonesian Government had to spend \$ 60 million.

That is the strongest reason for the Indonesian Government to buy used C-130 Hercules from the United States and from Australia. How is the implementation of risk management in the procurement of C-130 Hercules aircraft to support the Air Force to support the National Defense? What are the factors that hinder the implementation of risk management in the maintenance of the Air Force's C-130 Hercules aircraft to support the Air Force to support the State Defense?

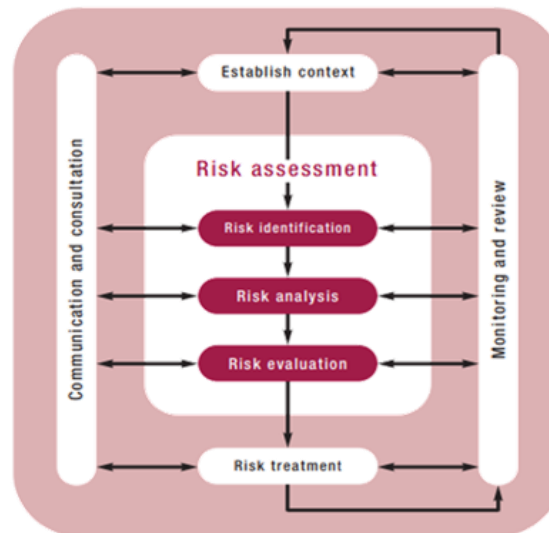
## **2. METHODOLOGY**

This qualitative research discusses risk management carried out by the government in the C-130 Hercules aircraft procurement management cycle which refers to the procurement management cycle concept, assessment, demonstrate, manufacture, in-service, and disposal (CADMID) management cycle, starting from the planning stage (concept) to its use by the Indonesia Air Force (in service). The concept of risk management that refers to the framework of ISO 31000 (2009) is one of the main concepts used to analyze the design and application of risk management applied in relation to the aircraft procurement process. In addition, the Five Pillars Defense Management concept in International Best Practice will also be a theory for analyzing risks in purchasing C-130 Hercules aircraft. It can be explained that in carrying out a good defense system, a defense management is needed so that goals can be achieved effectively and efficiently. Based on International Best Practice, defense management consists of five pillars in the form of Defense Policy and strategy: defense resource management, defense human resource management, defense logistics management, joint concept, and military operations [2] (Goodman, 2015). In order to analyze risk management in defense logistics management, the five pillars are very important to be implemented to see and analyze the risks of purchasing a C-130 Hercules aircraft. In addition, the five pillars are used to minimize the risks that can occur from C-130 Hercules aircraft purchasing. The gap between the ideal conditions of risk analysis and the reality of the purchase of the C-130 Hercules aircraft, this is due to the low risk analysis conducted before making the purchase of the aircraft, especially in terms of logistics management. With the purchasing of C-130 Hercules aircraft and several accidents caused by the aircraft which are viewed from various aspects, this research will focus on the risk analysis of purchasing the aircraft and what steps should be taken by the Indonesian government to resolve the case.

## **3. ISO 31000 RISK MANAGEMENT**

According to the International Organization for Standardization [3] (ISO, 2009), risk is defined as the impact of an uncertainty on achieving a goal. Risk management is needed to prevent an organization from various events and factors that can hinder the achievement of its objectives. Risk management is a coordinated activity to direct and control the risks associated with an organization. Risk management needs to be applied throughout the entire scope of the organization, both in every function, activity, and project carried out by an organization [4]. The importance of risk management in the defense acquisition process is to respond and recognize various events that will be a threat and can affect cost performance or time discrepancy and how to deal with all of them when they occur, can be identified early or first. Defense acquisition is very complex, therefore risk management is needed at each stage of the acquisition process to ensure risk can be reduced to a lower level before the project is carried out to a later stage [5] (Bucur, 2009).

*Figure following on the next page*



*Figure 1: Risk Management Model based on ISO 31000*

*Source: ISO 31000 [6]*

ISO 31000 [6] (2009) spearhead a risk management model that can be applied by various types of organizations, both the private sector and the public sector, as shown in Figure 1. The model can also be applied to the acquisition of defense instruments such as the C-130 Hercules aircraft. The application of a risk management model in accordance with ISO 31000 can assist the Indonesian Air Force in handling various risks that have the potential to hamper the achievement of national air defense objectives to be carried out through the procurement of C-130 Hercules aircraft.

### 3.1. Establish Context

Understand the context and environment where the organization carries out its operations as a basis for understanding the risks of the organization. The context that needs to be understood consists of the internal and external contexts of the organization. The external context of the organization includes but is not limited to:

- Socio-cultural, political, legal, economic, technological, and other strategic environmental factors that can affect an organization, whether in the local, regional, national, or international scope.
- Driving factors and trends that affect the achievement of the goals of an organization.
- The organization's relationships with external stakeholders outside the organization and the perceptions and values of each external stakeholder.

The internal context of the organization includes but is not limited to:

- Organizational governance and organizational structure along with the roles and responsibilities of each component of the organization.
- Organizational policies, objectives, and strategies.
- Organizational capabilities, namely the resources and knowledge possessed by the organization
- Information systems, information flows, and the decision making process
- Organizational relationships with internal stakeholders within the organization and the values and perceptions that each internal stakeholder has
- Organizational culture
- Standards, guidelines and models adopted by organizations

By understanding of the internal and external contexts of an organization, an organization can define the goals and scope of its risk management activities, design risk management policies and methodologies on how risk management is implemented and who takes responsibilities for risk management in the organization, plan resource requirements that needed to carry out risk management, and set criteria for measuring the effectiveness and performance of the application of risk management in achieving organizational goals. The organization also needs to set risk criteria as a guideline in implementing organizational risk management which includes the following matters:

- Characteristics of causes and impacts that can result from a risk and how it is measured
- How the probability (likelihood) of a risk is defined
- How the level of impact caused by a risk is defined
- How the level of risk is defined based on the probability (likelihood) of occurrence and the impact of the risk
- Stakeholder views on a risk
- Criteria for the level of risk that can be tolerated

### 3.2. Risk Assessment

Risk Assessment is a whole process of risk assessment that starts from risk identification, risk analysis, to risk evaluation. In a risk identification activity, the organization identifies the source of the risk, the scope of the impact caused, the event or situation that can cause a risk or its cause and the potential impact that can cause it. The purpose of this activity is to make a comprehensive list of risks based on events that can create, increase, accelerate, prevent, or slow down the achievement of organizational goals. In risk analysis activities, organizations develop an understanding of risks that have been identified as a basis for evaluating the level of risk and what is the most appropriate way of handling a risk. Risk analysis is carried out by considering the causes and sources of risk, the positive and negative consequences, and the level of likelihood of a risk. In addition, the effectiveness of existing control procedures also needs to be considered in analyzing risks. Risk analysis can be done qualitatively, semi-quantitatively, quantitatively, or in combination based on available data. The output of the risk analysis process is a risk matrix that maps all risks based on the severity of the impact caused and the likelihood of a risk occurring as shown in Figure 2 below.

*Figure 2: Risk Matrix*

		Impact →				
		Negligible	Minor	Moderate	Significant	Severe
Likelihood ↑	Very Likely	Low Med	Medium	Med Hi	High	High
	Likely	Low	Low Med	Medium	Med Hi	High
	Possible	Low	Low Med	Medium	Med Hi	Med Hi
	Unlikely	Low	Low Med	Low Med	Medium	Med Hi
	Very Unlikely	Low	Low	Low Med	Medium	Medium

*Source: ISO 31000*

After conducting a risk analysis, the next step taken is to conduct a risk evaluation which is an assessment of each risk that has been identified and analyzed in the risk matrix so that it can determine the priority of risk management based on the level of impact and the likelihood of its

occurrence. With risk evaluation, an organization can allocate its resources effectively and efficiently to mitigate risks that have been mapped in the risk matrix without spending a lot of resources in handling risks that should be tolerated or ignored because of the low level of impact and frequency of likelihood of occurrence .

### **3.3. Risk Treatment**

The results of the risk assessment carried out in the previous step (form the/be) basis for the organization in designing a risk treatment plan as an effort by the organization to mitigate risks that could potentially hamper the achievement of its objectives. The risk management plan outlines the forms of treatment for each risk the organization has along with the details of the timeline needed to carry it out, the resource requirements needed to implement the plan, the reporting and monitoring mechanism of implementing the risk management plan, and the parties responsible for carrying out the handling risk. The risk management plan should be integrated with the organization's management process and has been discussed by all stakeholders in the organization, especially decision makers. The forms of risk management in general are described as follows:

- Avoiding risk by deciding not to start or continue activities that trigger the emergence of a risk (risk avoidance)
- Taking a risk to get the opportunities in it (risk acceptance)
- Eliminating the source of risk
- Reducing the possibility of risk (risk reduction)
- Reducing the impact of risk (risk reduction)
- Share risks with other parties (risk sharing)

### **3.4. Communication and Consultation**

In every activity that carried out in the risk management process, good communication and consultation is needed with every stakeholder in the organization. Through communication and consultation, transparency and inclusiveness in risk management can be realized so that each stakeholder is always considered and well informed in the decision making process. Thus, the risk management process carried out in an organization can be more effective and supported by all stakeholders.

### **3.5. Monitoring and Review**

Reviewing and monitoring are also activities that are inherent in every step of risk management. Reviewing and monitoring is very important to ensure the risk management process both in the design and implementation has been carried out effectively and efficiently as well as making consideration for improving risk management practices in the organization if it has not been carried out optimally.

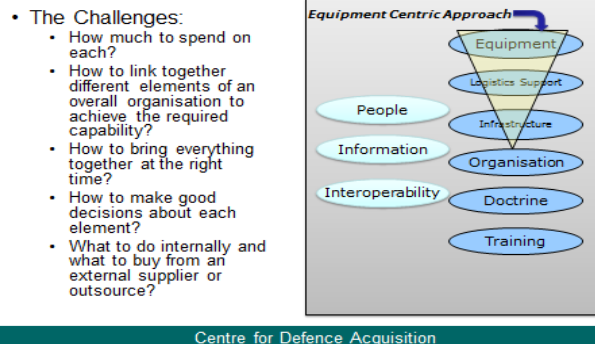
## **4. DEFENSE ACQUISITION MANAGEMENT**

The acquisition is defined as a process of goods and services sourced from outside agencies to build effective military capabilities. Generally, outside agencies are the defense industry, where the goods and services are in accordance with the needs of its users and the procurement is processed using a contract and regulations related to supply chains. "Equipment" (goods) is usually in the form of weapons or other materials needed to build defenses such as information systems or build defense infrastructure. "Services" is something non-physical that is needed to build military force, for example consulting services, training and education or supporting logistics. (Bucur, 2009) [5]The acquisition must be able to translate defense policies into military capability development programs that are needed, as a whole, on all development and

strength lines (DLoD / Defense Line of Development) [7]. The path of coaching and strengths referred to are illustrated in the following figure 3 bellow.

*Figure 3: Pathways to Coaching and Strength*

#### Defence Lines of Development



*Source Addock R (2007) Through Life Capability. Cranfield University [7]*

The challenges faced in developing military capability can be illustrated in the following questions:

- How much money can be spent on these three elements?
- How to link the three different elements to meet the need to improve abilities?
- How to do those all in the right times?
- How to make the right decision for the three elements?
- Which one to do: buy from outside or buy from other sources?

Some of the questions above must be considered in the acquisition process. In this case, when carrying out the grant process for the C-130 Hercules Aircraft to the Indonesia Air Force, the above aspects must be well planned to avoid negative risks in the future, the biggest risk is an accident.

## 5. HISTORY OF AIRCRAFT C-130 HERCULES OWNED BY INDONESIA AIR FORCE

Since the first time the Indonesian Air Force used C-130 Hercules aircraft, Indonesia has procured 39 C-130 Hercules aircraft in various variants. Indonesia first received 10 units of the C-130 Hercules C-130B series in the United States in 1959 from the United States in exchange for a Central Intelligence Agency (CIA) pilot named Allen Lawrence Pope who was detained by the TNI for being involved in helping the Permesta rebellion on Sulawesi. Among these 10 aircraft, there are 2 units of the KC Hercules series aircraft with the ability to refuel in the air (air refueling). At that time Indonesia was the first country outside the United States to use the C-130 Hercules aircraft. In 1975 Indonesia obtained 3 units of C-130 Hercules C-130E series from the United States used in the Vietnam War. Then in the 1980s, Indonesia held 12 C-130 Hercules aircraft consisting of the C-130H, C-130 H-30 series, L-100-30 Super Hercules, and C-130H / MP. C-130H / MP aircraft are maritime patrol aircraft, while L-100-30 Super Hercules aircraft are civil versions of C-130 Hercules aircraft so it used for civilian purposes. In 1995, the Indonesian Air Force received a C-130 Hercules L-100-30 Super Hercules aircraft from 2 Indonesian airlines, namely Merpati Nusantara and Pelita Air Service. Until now, Indonesia has procured the last 5 units of used C-130 Hercules C-130H series aircraft from Australia in 2013. Then the Australian Government also donated 4 C-130 Hercules C-130H series aircraft, so that Indonesia in total obtained 9 aircraft from the Australian Government.



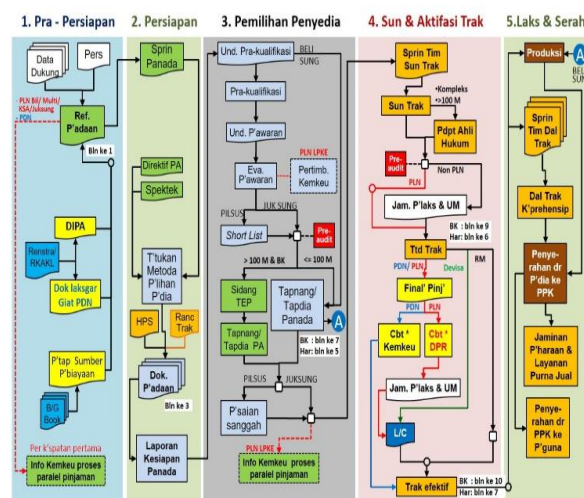
All of the Hercules aircraft from Australia were sent in several stages and currently all have been received by Indonesia.

## 6. PROCESS FOR PROCUREMENT OF AIRCRAFT C-130 HERCULES OWNED BY INDONESIA AIR FORCE

### 6.1. Pre-Preparation Stage Up to Aircraft Handover

C-130 Hercules aircraft are included in the main equipment of the Indonesian Air Force's weapons system. The process of procuring the C-130 Hercules Aircraft of Indonesian Air Force from the pre-preparation stage until the handover is shown in the following figure 4. After the handover is complete, the aircraft can be used by the Indonesian Air Force until its useful life is exhausted and then obliterated after its useful life is up.

Figure 4: Preparation Mechanisms to Handover of the Main Armaments System in TNI Procurement



Source: Minister of Defense Regulation No. 17 of 2014 [8]

The C-130 Hercules aircraft procurement activity is carried out in a bottom-up ways, starting with the emergence of the need for transport aircraft for the Air Force which is then reviewed and outlined in operational requirements (*Opsreq*) documents by the TNI Headquarters. The specified *Opsreq* is then translated into the technical specifications (spectra) of the aircraft needed. In addition, the user's organizational unit (UO), namely the Indonesian Air Force, also needs to prepare supporting documents consist of estimated prices, activities to be carried out, as well as the time required to procure aircraft with this spectacle. After that, the budget user prepares a Procurement Reference consist of supporting documents that have been prepared before and the Budget User Entity List (DIPA/Daftar Isian Pengguna Anggaran) so that Procurements Warrants can be published. After the Procurements Warrants is published, the next step is to determine the procurement method and make a Provisional Pricing Price (HPS/Harga Prkiraan Sementara) that will be compiled in the Procurement Document. Before deciding to procure for the purchase and receipt of Australia's ex-AU C-130 Hercules Aircraft, a team consisting of the Indonesian Air Force as the user and the Ministry of Defense as the procurement executive conducted a review of the aircraft which would later be handed over to Indonesia to ensure that the aircraft was indeed in condition good and according to the user's technical specifications. After the procurement decision was made for the purchase and receive of ex-AU Australia C-130 Hercules Aircraft, a contract was signed and the aircraft delivery began in stages. The contract control team was formed to supervise and control the implementation of the contract and the process of delivery up to the time of the aircraft handover.

## 6.2. Stage of Use of Aircraft Until Disappearance (Disposal)

The Air Force C-130 Hercules aircraft are operated by two Air Squadrons (Skadud), known as Skadud 31 which is based at Halim Perdanakusuma Air Base, Jakarta and Skadud 32 which is based at Abdulrachman Saleh Air Force Base, Malang. The following is an explanation of each Skadud:

### 6.2.1. Skadud 31

It was established in 1960 through Decree of the Menpangau No. 433 dated 1 January 1960 about the Formation of the C-130B Hercules Heavy Transport Experiment Squadron that subsequently developed into the Skadud 31 Long-distance heavy transport on April 4, 1961. Squad 31 operated C-130 Hercules Aircraft for transportation missions air, especially long distance heavy transport missions. The mission carried out by Skadud 31 is included in the heavy transport mission because the amount of cargo carried by the C-130 Hercules Skadud 31 aircraft is intended to transport human loads and goods that are heavier / bigger than other aircraft, including C-295M plane (medium transport aircraft) and the Cassa 212 Airplane (light transport aircraft). Skadud 31 has the main task of supporting the Air Force's air operations in accordance with the *Swa Bhuwana Paksa* doctrine in the case of Air Support Operations (Opsdukduk). *Opsdukduk* is defined as the process of moving, moving, transporting objects, and guaranteeing the smooth process of moving and securing objects carried on an aircraft from takeoff to returning safely. This operation is the transportation of logistics, personnel and material to support military operations on land, sea and air as well as missions that involving civilians. Skadud 31 is one of the Indonesian Air Force's busiest Skadud because it carries various types of tasks (multi-role), including the task of transporting troops, dropping troops, weather investigators, artificial rain carriers (water-carrying), beach patrols, medical evacuations, search and rescue, transportation of various types of long-distance payloads, flying formations, and other various tasks.

### 6.2.2. Skadud 32

Skadud 32 is the operational unit of the Abdulrachman Saleh Air Force Base whose job is to prepare and operate heavy transport aircraft to carry out air support operations and limited search and rescue operations. Skadud 32 was established based on Decree Menpangau Number 50 dated July 20, 1965. Skadud 32 was liquidated in 1974 due to decreasing of aircraft readiness level. In 1981, Skadud 32 was reactivated by Decree of the Chief of Staff of the Air Force (Kasau) Number Kep / 21 / V / 1981 on 20 May 1981 and officially published by Kasau on 11 July 1981. The main task of Skadud 32 was to carry out Strategic Air Transport Operations, Tactical Air Transport, Special Air Operations and Military Air Transport. In carrying out these basic tasks, the functions of Skadud 32 include carrying out guidance and preparation of flight crews and other equipment to support operations and training activities; Carry out air transport operations to move personnel or goods from one place to another by landing or deploying; carry out air medical evacuation operations or air medical containers from the operation / training / disaster area to the destination that has health facilities; carry out refueling in the air; carry out search and rescue in accordance with the capabilities of the aircraft; and carrying out aircraft maintenance to a mild level.

## 7. AIRCRAFT OPERATION READINESS C-130 HERCULES OWNED BY THE INDONESIAN AIR FORCE

In the use of aircraft, there are many things that need to be considered both in terms of pilot readiness and aircraft readiness so that the C-130 Hercules can be used effectively to complete its mission.

### **7.1. Aviation Readiness**

There are some stages of coaching and career paths of C-130 Hercules pilot aircraft officers in each Squad [9]

- Aviation School (*Sekbang/Sekolah Penerbang*)
- Transition
- Kaptensi
- Instructions.
- Pilot Check
- Proficiency Training
- Refreshing

### **7.2. Medical Examination, Indoctrination and Aerophysiology Training**

This program is carried out once a year at the Institute of Aviation and Space Health (Lakespra/Lembaga Kesehatan Penerbagan dan Ruangan Angkasa). Medical examinations include laboratory checks (blood, urine, cholesterol, etc.), audiometric tests (hearing), dental and oral health checks, eye checks, x-rays, electrocardiograms, physical checks, and electroencephalography (brain and psychiatric tests). Indoctrination and aerophysiology exercises include exercises to adjust the body and mentality to flight situations such as night indoctrination, disorientation training, etc.

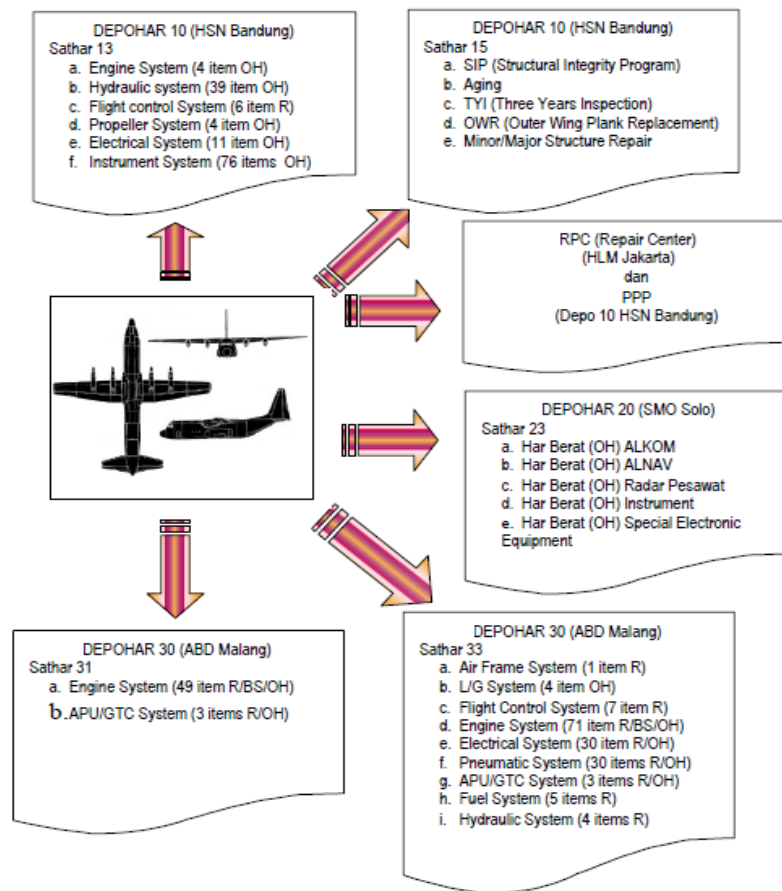
### **7.3. Aircraft Readiness**

To ensure aircraft readiness, the Indonesian Air Force carries out various maintenance procedures for its C-130 Hercules. The purpose of maintenance carried out by the Indonesian Air Force on C-130 Hercules aircraft is to extend aircraft life, maintain aircraft productivity and readiness, and prevent damage that could pose a risk to aircraft operations. The maintenance system carried out by the Indonesian Air Force uses a level maintenance system based on the level of aircraft maintenance requirements as follows:

- Severe maintenance is carried out by the Maintenance Unit (Sathar/Satuan Pemeliharaan) which is under the Maintenance Depot (Depohar/Depo Pemeliharaan), it is Depohar 10 at the Husein Sastranegara Air Force Base Bandung and Depohar 30 at the Abdurachman Saleh Air Force Base Malang. Depohar 10 is in charge of Sathar 13 and Sathar 15, while Depohar 30 is in charge of Sathar 31 and Sathar 33. Each Sathar has a specialized task in maintaining heavy levels of the C-130 Hercules as shown in Figure 5.

*Figure following on the next page*

Figure 5: Maintenance Scheme for C-130 Hercules Aircraft belonging to the Indonesian Air Force

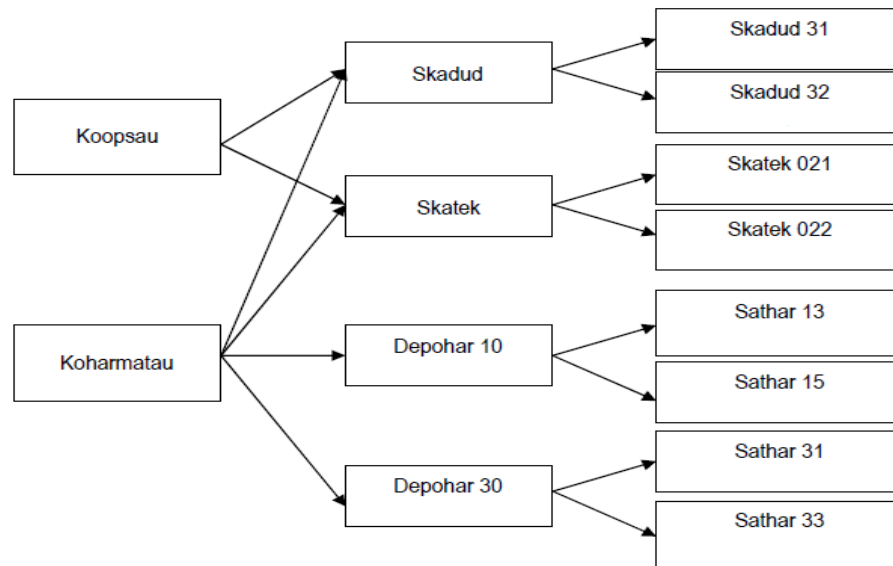


Source: Nanang F. Alamie. (2007). *Analysis of Operational Level Optimization (Availability) of Military Version C-130 Hercules* [10]

- Medium level maintenance is being carried out by the Technical Squadron (Skatek) under the Air Force Base, namely Halim Perdanakusuma Air Force Base Jakarta and Abdulrachman Saleh Air Force Air Force Malang. Halim Perdanakusuma Air Force Base is in charge of Skatek 22, while Lanud Abdulrachman Saleh is in charge of Skatek 21. Each Skatek has the responsibility of maintaining a moderate level of C-130 Hercules aircraft in the Lanud.
- Light level maintenance is carried out by Skadud 31 and Skadud 32 as end users of the C-130 Hercules. The organizational structure in maintaining C-130 Hercules aircraft is shown in Figure 6. This following picture is a description of each unit involved in maintaining C-130 Hercules:

Figure following on the next page

Figure 6: Organizational Structure in the Air Force Involved in C-130 Hercules Aircraft Maintenance Process

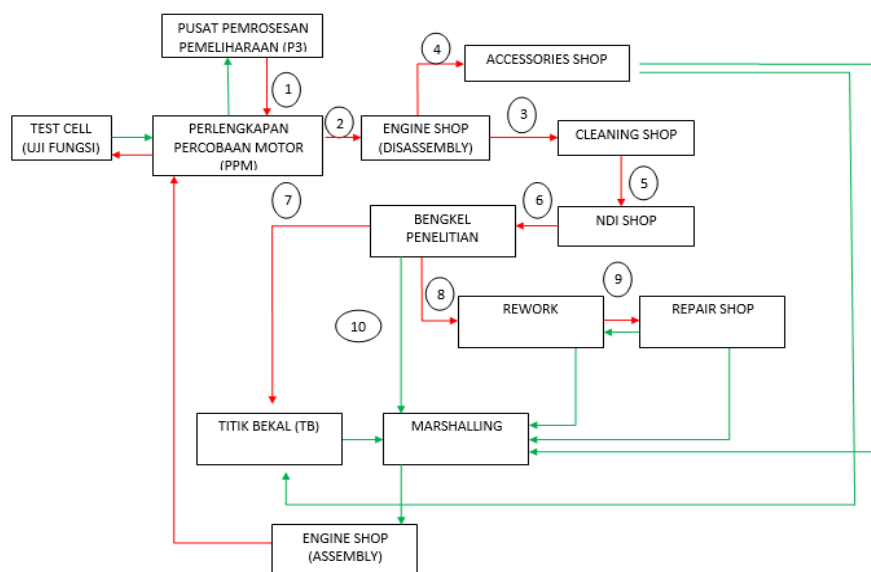


Source: Nanang F. Alamie. (2007). *Analysis of Operational Level Optimization (Availability) of Military Version C-130 Hercules* [10]

- **Skatek 21**  
Skatek 021 is a medium level aircraft maintenance unit under the Halim Perdanakusuma Air Force Base. Skatek 021 is tasked with organizing the maintenance of Main Equipment Weapon System (*Alutsista/Alat Utama Sistem Senjata*) along with its components. In the context of carrying out these tasks, Skatek 021 functions to formulate plans and programs for maintaining *Alutsista* which are its responsibility; carry out the *Alutsista* maintenance program; organize personnel training to develop capabilities in supporting defense equipment activities; compile and prepare data on the needs of items used to support the maintenance of defense equipment; and coordinating and collaborating with other Air Base implementing units for the purpose of carrying out their duties. Skatek 21 is led by Danskatek 21 which is assisted by the maintenance section, quality control section, and work safety section.
- **22 skates**  
Skatek 022 is a medium level aircraft maintenance unit under Abduludachman Saleh Air Force Base. Skatek 022 is tasked with organizing the maintenance of the *Alutsista* along with its components. In the context of carrying out this task, Skatek 022 functions to prepare plans and programs for maintaining *Alutsista* as its responsibility; carry out the *Alutsista* maintenance program; organize personnel training to develop capabilities in supporting defense equipment activities; compile and prepare data about needs of items used to support the maintenance of defense equipment; and coordinating and collaborating with other Air Base for the purpose of carrying out their duties. Skatek 22 is led by Danskatek 22 which is assisted by the maintenance section, quality control section, and work safety section.
- **Sathar 13**  
Sathar 13 is one of Sathar under the responsibility of Depohar 10, based at Lanud Husein Sastranegara, Bandung. Sathar 13 specializes in maintaining heavy engine systems, hydraulic systems, flight control systems, propeller systems, electrical systems, and C-130 Hercules aircraft instrument systems.

- **Sathar 15**  
Sathar 15 is one of Sathar under the responsibility of Depohar 10 which is based at Husein Sastranegara Air Base, Bandung. Sathar 15 specializes in the maintenance of heavy structural integrity programs, aging, three years inspection, outer wing plank replacement, and minor / major structure repair C-130 Hercules aircraft.
- **Sathar 31**  
It is one of the tasks force of Depohar 30. It is tasked with carrying out maintenance / repair of engines and accessories of the C-130 Hercules aircraft. The procedure for maintaining a C-130 Hercules engine overhaul performed by Sathar 31 is shown in the following figure 7.

*Figure 7: Maintenance Process of the T-56 Engine Overhaul of C-130 Hercules Aircraft owned by the Indonesian Air Force by Sathar 31*



Source: Santoso (2011) [11]

Sathar 31's capabilities related to engine maintenance of the C-130 Hercules aircraft include the ability to overhaul the T56-A-7B, T56-A-15, and 501-D22A engines; convert / modify the T56-A-7B Engine to T56-A-15; do engine hot section inspection (HSI); overhaul the APU / GTC 85-71-7A C-130 Hercules aircraft; and repair and rework on the C-130 Hercules aircraft component. In Figure 7, the first step if there is an aircraft engine that needs to be overhauled is the aircraft user Skadud sends the engine to the Depohar 30 Maintenance Processing Center (P3) and then sent to the Sathar 31 Motorcycle Trial Equipment (PPM) section. After pre-inspection by inspector at PPM, the engine will be taken to the engine shop so that it can conduct the process of disassembly. Parts that have been dismantled then undergo a cleaning process in the clean shop. Some parts that have been dismantled are sent to the accessories shop to check the conditions and then sent to marshalling if the conditions are still good. Other parts that have undergone a cleaning process will be checked, whether there is crack or corrosion and other bad conditions in the NDI Shop. After that, the engine parts that have been inspected at NDI Shop are taken to the research workshop to be checked from dimensional and visual aspects to determine whether the parts can still be used or not. Parts that are not in good condition will be sent to the Provisions (TB/Titik Bekal), while parts that are still in good condition will be sent to the rework shop and repair shop before being sent to the marshalling department.

All parts that have been sent to marshalling will be sent to the engine shop to be reassembled and returned to PPM to be equipped with all its components and prepared for a function test (test cell) so that the engine's performance can be known. After passing the function test, the engine will be sent back to PPM for post-inspection and then sent back to P3 Depohar 30 if it has passed post-inspection and is deemed fit for use.

- Sathar 33

Sathar 33 is one of Sathar under the responsibility of Depohar 30, based at Abdulrachman Saleh Air Base, Malang. Sathar 33 specializes in the maintenance of the weight level of the air frame system, L / G system, flight control system, engine system, electrical system, pneumatic system, APU / GTC system, fuel system, and hydraulic system of the C-130 Hercules aircraft.

## **8. APPLICATION OF RISK MANAGEMENT IN MAINTENANCE OF AIRCRAFT C-130 HERCULES**

### **8.1. Context Establishment**

Determination of the risk context of the Indonesian Air Force C-130 Hercules Aircraft is carried out with reference to the external and internal contexts in the aircraft procurement cycle. In planning the piloting of the C-130 Hercules aircraft, the Indonesian Air Force confronts the needs of the Indonesian Air Force transport aircraft with an analysis of the relevant strategic environmental context. The aspect that becomes the main concern of the Indonesian Air Force in analyzing the context of the strategic environment relating to the procurement of C-130 Hercules Aircraft is the political aspect, where the United States as a C-130 Hercules Aircraft producing country once embargoed on Indonesia. Even so, Indonesia already has a maintenance unit that is capable of carrying out maintenance of heavy levels of various components of the C-130 Hercules aircraft. Thus, the government does not need to allocate a budget to prepare the infrastructure, human resources, and other components needed to support the preparation of the C-130 Hercules because Indonesia has been using the Hercules aircraft for a very long time so it already has the infrastructure and human resources that are qualified to carry out aircraft maintenance. C-130 Hercules aircraft are needed to fill the needs of the Indonesian Air Force heavy transport aircraft because the C-130 Hercules aircraft have a very high level of reliability in carrying out various missions faced with geographical conditions and aviation infrastructure in various regions of Indonesia whose short runways. If it faced with the type of mission of Indonesian Air Force, the C-130 Hercules can answer various challenges of the Air Force mission, including the mission of transporting troops and goods for air support, medical evacuation, disaster relief missions, air refueling (for aircraft The KC Hercules series, owned by the Air Force, made artificial rain, and other special missions. Based on various contextual considerations, the Indonesian Air Force decided to procure ex-Australia C-130 Hercules in order to increase the number of existing aircraft because ideally Indonesia needs three squadrons of C-130 Hercules aircraft, while until now Indonesia only has 2 squadrons. To make this happen, the Indonesian Air Force is preparing a new squadron in Makassar that will be filled with the relocation of C-130 Hercules aircraft from other squadrons and the procurement of C-130 Hercules J series planes in stages in the future.

### **8.2. Risk Assessment**

In the stage of use by aircraft, there is a risk of aircraft accidents which has a very significant impact on achieving the mission goal. The Indonesian Air Force has identified that in general aircraft unpreparedness that can result in accidents is caused by two main factors: human and material. That's why risk assessment activities are focused on identifying, analyzing and evaluating risks originating from these two factors.

From human factors, aircraft accidents can arise from unsafe action. Unsafe actions are insecurities caused by errors or violations committed by humans in flight. Based on the Air Force Chief of Staff Regulation No. Perkasai / 155 / XII / 2011 dated December 27, 2011 concerning the Indonesian Air Force's Implementation Manual on Prevention of Aviation and Work Accidents, unsafe action in flights can be caused by the following things:

- Disorientation or error in recognizing terrain;
- Bad coordination between aircraft-crew;
- Miss-judgement (judgements error) in making an aircraft movement;
- Over-confidence, namely overconfidence that causes pilots to dare to take high-risk actions in flying their planes;
- Limitations on the ability (skills), techniques, and experience of the pilot;
- Tense or nervous feelings in carrying out the task;
- There have been extraordinary changes in the pilot's personal life that affected his psychology such as divorce, death of family members, and etc;
- Disciplinary violations committed intentionally or unintentionally by pilots; and
- Fatigue or other health problems caused by physical and psychological factors.

From material scope, Marsda TNI Tatan Kustana revealed that the main risks of the C-130 Hercules were identified by the Indonesian Air Force based on historical data on the C-130 Hercules and similar aircraft. The main risk factors in the operation of the Air Force C-130 Hercules aircraft are sourced from the engine, hydraulic and airframe systems. Based on an understanding of these risk factors, the Indonesian Air Force is paying very high attention to the material risk factors of the C-130 Hercules aircraft through regular monitoring and maintenance steps in accordance with the provisions in the C-130 Hercules Aircraft Maintenance Manual.

### **8.3. Risk Treatment**

In the planning process for the needs of the C-130 Hercules aircraft, the risk treatment process has been carried out to overcome the risks at the planning stage. To mitigate the risk of improper preparation of aircraft requirements required by the TNI, a review of the needs of the C-130 Hercules Aircraft is carried out bottom-up ways from the Indonesian Air Force Operations Staff (Sops AU / Staf Operasi TNI AU) as the last user of the aircraft who understands the capabilities of the aircraft as required by the Indonesian Air Force in supporting the readiness of its operations. The needs study compiled by the Indonesia Air Force Sops was also reviewed in stages until finally it was included in the Indonesian Air Force needs list so as to mitigate the risk of an inadequate suitability of aircraft capability requirements required by the Indonesian Air Force with the real situation on the ground. If the planning process is carried out only purely on a top-down basis, there is a risk that the aircraft capability requirements assessment that is required by the Air Force is not in accordance with the real situation on the ground. Thus, the risk management process in the concept stage has been embedded in the planning mechanism of the needs of the Indonesian Air Force aircraft. In the assessment phase, the procurement committee has carried out risk management by reviewing each possible C-130 Hercules aircraft procurement option and taking into the cost and benefit aspects of each option. In addition, many parties are involved in the assessment process to determine the winner of the procurement contract, so it can minimize the risk of fraud and conflicts of interest committed by one particular party in the process of determining the aircraft to be held. Thus, the risk management process in the assessment stage has been attached to the assessment process to determine aircraft procurement options. During the demonstration stage, the control and control team consisting of various parties inspected the ex-Australian Air Force C-130 Hercules to be purchased and donated to Indonesia so as to minimize conflicts of interest between certain parties in the



supervisory and control team and could increase the objectivity of the assessment conducted. In the in-service phase, the Air Force as the user has taken various risk management steps to ensure the readiness of C-130 Hercules aircraft operations in order to fulfill the country's air defense duties. According to [2] Goodman (2015), readiness is supported by human pillars and equipment. Thus in the case of operational readiness of the C-130 Hercules aircraft, readiness is highly dependent on the readiness of the pilot human as well as the readiness of the aircraft as the equipment used. In terms of human preparedness, various risk management programs and activities have been carried out by the Indonesian Air Force, both in the form of risk prevention and risk reduction. According to [12] Widodo (2014), risk management measures for the human dimension require the following:

- Involvement of management and personnel in developing occupational safety and health programs;
- Determination of the person responsible for implementing the program arranged;
- Determination of the required safety and health needs in the part needed;
- Identification of dangerous parts or facilities of the organization;
- Creation of the mindset of personnel that every activity carried out in the organization must be free of accidents (zero-accident); and
- There are continuous improvements to the risk management program for safety and health.

To prevent the risk of accidents, Air Force pilots have undergone various educational programs with a long duration and comprehensive learning materials and methods before being assigned to fly C-130 Hercules aircraft. In addition, the inculcation of safety culture is also an important risk management step in aviation. According to Molenaar et al [13], the main components that influence the creation of safety culture in an organization include human aspects (people), processes (processes), and values (values). The results of Widiyanto's research [15] show that the inculcation of safety culture for all personnel in the work environment at Halim Perdanakusuma Air Base which is the headquarters of Skadud 31 has been comprehensively carried out by involving the people, process, and values components. The efforts to create a culture of safety in the Skadud 31 Halim Perdanakusuma Lanud have been carried out through the following steps:

- Making slogans that contain work safety and aviation values such as zero-accident which are displayed in strategic locations and easy to read around the Halim Perdanakusuma Air Force Base.
- Refresher continuously by the leadership who at every opportunity always expresses emphasis on flight safety to personnel, both while on air (in the air) and when the aircraft is still on the ground (on the ground).
- Publish bulletins on aviation safety and work on a regular basis by the Office of Aviation and Work Safety (Dislambangja) Halim Perdanakusuma Air Force.
- Conduct physical and psychological checks on pilots at any time, both when they are going to carry out the flight, after carrying out the flight, as well as on other occasions on a regular and monitored basis.

Based on the efforts to create a safety culture that has been carried out in the Skadud 31 organization, it can be concluded that the safety culture has been applied at the level of generative safety culture, namely the level of safety culture in which an organization has implemented a safety management system well and prioritizes safety factors in every implementation his assignment [15] (Byron, 2007). On the other hand, the results of Effendi's research [4] indicate that there are organizational culture issues in Koharmatau, namely that there is no agreement on organizational culture established at Koharmatau, which results in different interpretations and values held regarding safety culture among personnel within the

organization. According to Osborne and Plastrik [16], organizational culture is a system of organizational values that influences the behavior of personnel and how a job is carried out in the organization. Based on this definition, organizational culture can be said as one of the tools needed to instill a culture of risk awareness in an organization. According to ISO 31000 [6], a culture of risk awareness needs to be clearly outlined in management policies. Thus, to improve the handling of risk in the human aspect of the operation of the C-130 Hercules Aircraft requires an organizational culture that is clearly stated in the Air Force policy that is believed and agreed by each of its personnel as a step to increase risk awareness in aviation. In terms of tools and equipment, risk management activities have been carried out through various steps to check aircraft condition and aircraft maintenance routinely in accordance with the provisions described in the C-130 Hercules Aircraft Alertista Maintenance Manual. Nevertheless, the risk of long time waiting steps for spare parts cannot be overcome because Indonesia has not been able to produce C-130 Hercules aircraft parts independently so that it still relies heavily on importing spare parts which takes longer when compared to production in country.

#### **8.4. Communication and Consultation**

ISO 31000 explains that communication and consultation are activities that are inherent in each stage of risk management, starting from setting the context, assessing risk, to handling risk. Based on the previous discussion regarding the stages of determining the context, risk assessment and risk management, communication and consultation have been carried out in each stage of risk management in the procurement of the C-130 Hercules aircraft. Communication and consultation in risk management for procurement of C-130 Hercules aircraft is generally carried out vertically in accordance with the chain of command in the Air Force, where the formulation of risk management policies at the strategic level is carried out by implementing units in the Indonesian Air Force Headquarters based on real data and empirical facts obtained in the field from various implementing units in the operation of the C-130 Hercules aircraft.

#### **8.5. Monitoring and Review**

ISO 31000 explains that monitoring and review are activities that are inherent in each stage of risk management, starting from setting the context, assessing risk, to handling risk. Based on the previous discussion regarding the stages of determining the context, risk assessment and risk management, monitoring and review has been carried out at each stage of risk management in the procurement of the C-130 Hercules aircraft. Every activity that is designed in the context of handling risks in C-130 Hercules aircraft is always monitored for its application and reviewed for its effectiveness in mitigating risks that can hinder aircraft operation readiness. Monitoring and review are carried out by those who play a role as policy makers at the level of the implementing unit of the Indonesian Air Force Headquarters and are responsible for implementing risk management measures in various implementing units.

### **9. FACTORS AFFECTING THE RISK MANAGEMENT OF C-130 HERCULES MAINTENANCE**

#### **9.1. Man**

In aircraft operations, the human factor is very important in ensuring the effectiveness of aircraft use to complete missions. The fatigue factor is one of the main causes of accidents in aircraft operations. With the high intensity of Indonesian Air Force missions carried out using Hercules aircraft to various regions in Indonesia, the physical condition of pilots needs to be protected from fatigue that can cause accidents. Ideally the number of pilots is as much as 1.5 times the number of missions carried out so that it can be shifted or replaced by pilots after undergoing a mission with certain flight hours.

This can provide a pause for a pilot to rest after undergoing a mission with certain flight hours and avoid the fatigue factor. Thus, an additional number of C-130 Hercules Airplanes is needed to meet this ratio. In terms of human resources, the quantity of technician personnel at Depohar serving heavy duty maintenance of the C-130 Hercules Aircraft owned by the Indonesian Air Force is still not ideal for optimizing aircraft maintenance activities. Based on information from the Head of the Logistics Office (Kadislog) Lanud Halim Perdanakusuma, the number of C-130 Hercules Aircraft technicians in Depohar 10 and Depohar 30 only fulfills about 60% to 70% of the ideal number of personnel in the Air Force Personnel List (DSP). The shortage of personnel is also faced with the increasing need for maintenance of the C-130 Hercules aircraft from time to time as the number of planes increases and the age of the aircraft operating and requires higher maintenance. Thus, the number of available personnel is only able to handle a limited number of aircraft maintenance works, where in 1 year Depohar is only able to carry out heavy maintenance of 4 aircraft.

### **9.2. Material**

In terms of parts availability, the Indonesian Air Force can find many suppliers of C-130 Hercules aircraft parts because there are many countries that use the aircraft, so that spare parts can be available for any C-130 aircraft maintenance needs carried out by the Air Force. However, there is a risk of delays and the length of time waiting for the delivery of spare parts to Indonesia due to the distance and availability of stock owned by suppliers because of many orders from various countries. Long waiting times in the form of delays and delays in the delivery of spare parts is one of the main risks in material supply chain management. According to Poiger [17], the long waiting time in material supply chain management consists of two components, namely the length of time required to process the material ordered (process time) and the length of time required to deliver the ordered material (delivery time). To overcome the long waiting time for materials originating from the delivery time, it is necessary to strengthen and encourage domestic industries that have the potential to become suppliers of C-130 Hercules Aircraft owned by the Indonesian Air Force so as to accelerate the process of aircraft maintenance and anticipate the increased need for spare parts aircraft in the future caused by the aging of existing aircraft and the increase in the fleet of new aircraft.

### **9.3. Machine**

With the real condition of the facilities and infrastructure owned by Depohar 10 and Depohar 30, in one year the Air Force can only handle the maintenance of 4 C-130 Hercules aircraft. To overcome this obstacle, the Indonesian Air Force outsourced the maintenance work of C-130 Hercules to overseas maintenance, repair, and overhaul (MRO) companies that have licenses from Lockheed Martin as a manufacturer of C-130 Hercules aircraft, including AIROD from Malaysia and ST Aerospace Engineering from Singapore. For maintenance carried out abroad, there is a risk that the Indonesian Air Force cannot monitor the processes carried out there and so cannot ensure the quality of maintenance work carried out abroad.

### **9.4. Money**

In terms of the budget, the results of Suryanto's research [18] revealed that the budget allocation or availability to maintain C-130 Hercules aircraft was very limited, which was still less than 10% of the ideal budget allocation. For maintenance of 23 C-130 Hercules aircraft ideally an budget of around 1.6 trillion rupiah per year is needed, while the real condition of the budget allocation available for the maintenance of 23 C-130 Hercules aircraft owned by the Indonesian Air Force is only around 100 billion rupiah per year. Thus, from a total of 23 C-130 Hercules planes owned by the Indonesian Air Force in 2014, only 10 were ready to operate. To overcome budget constraints, Air Force aircraft technicians often carry out cannibalization techniques,

namely replacing a spare part of a damaged C-130 Hercules but can still be operated with similar parts from other C-130 Hercules aircraft that are still good but the aircraft is not can be operated because it is waiting for the replacement of other parts that can only be obtained from foreign suppliers.

### **9.5. Method**

In terms of organizational structure and mechanisms related to the application of risk management in the procurement of C-130 Hercules aircraft, the regulation of pilot career paths and the procedures applied to manage risks originating from human factors are good enough, where the pilot career path stages are designed to be slowly improve the competence and experience of an Air Force Academy (AAU/*Akademi Angkatan Udara*) graduate to become a pilot candidate until finally ready to become a pilot captain. The risk management mechanism for pilots of the C-130 Hercules has also been carried out well, where physical and psychological health conditions are constantly monitored regularly to ensure a pilot's readiness to carry out his mission. Organizing maintenance of C-130 Hercules aircraft conducted by the Indonesian Air Force is also considered to have been good, where each Skadud and Skatek C-130 Hercules aircraft users are able to repair mild and moderate levels; as well as weight improvements organized according to the specialization of each Sathar, ie Sathar 13 has specialized in the field of aircraft propeller and flight control system maintenance, Sathar 15 in the field of avionics system maintenance and aircraft structure, Sathar 31 in the field of aircraft engines, and Sathar 33 in plane frame system (air frame), fuel, and aircraft hydraulics. The specialization of heavy duty maintenance capability of the C-130 Hercules aircraft implemented by the Indonesian Air Force enables the occurrence of resource pooling and concentration, namely the allocation of concentrated and focused resources to complete a particular job so as to achieve good results. According to [19] Reddy, Moharir, and Karamchandani (2018), this technique is useful to improve the performance of a job, improve coordination between human resources involved in a job, and reduce the overhead costs incurred in carrying out a job so that it also increases efficiency.

## **10. CONCLUSIONS AND RECOMMENDATIONS**

From the research that has been done, researchers can provide conclusions and suggestions that can be described as follows.

### **10.1. Conclusion**

- a) The application of risk management in the procurement of the C-130 Hercules Aircraft owned by the Indonesian Air Force in order to increase the country's air defense has been carried out well starting from the context setting stage, risk assessment, to risk management. Communication and consultation activities as well as monitoring and review have also been carried out at each stage.
- b) Factors that influence the application of risk management in the maintenance of the C-130 Hercules Aircraft of Indonesian Air Force are human resources, material, facilities and infrastructure, budget, and organizational structure. From these factors, the factors that become obstacles in the implementation of risk management for maintenance of the Air Force C-130 Hercules owned by the Indonesian Air Force include the factor of lack of budget allocation, lack of quantity of human resources to carry out aircraft maintenance, limited infrastructure facilities of Indonesian Air Force in maintaining aircraft, as well as the waiting time for spare parts and other materials needed for aircraft maintenance.

## 10.2. Suggestion

- a) The government needs to examine the needs of defense equipment related to the Air Force C-130 Hercules which can support the National Defense and have a strong bargaining related to the risks in procuring the aircraft so that the procurement of C-130 Hercules aircraft is on time, on target and on function.
- b) Factors that influence the application of risk management in the maintenance of the C-130 Hercules Aircraft owned by the Indonesian Air Force are human resources, material, facilities and infrastructure, budget, and organizational structure. From these factors, the factors that become obstacles in the implementation of risk management for maintenance of the C-130 Hercules of Indonesian Air Force include budget allocation factors that can still be increased by increasing the current defense budget, lack of quantity of human resources to carry out aircraft maintenance, limited facilities infrastructure of Indonesian Air Force in maintaining aircraft, as well as the length of time waiting for spare parts and other materials needed to carry out aircraft maintenance..

## LITERATURE:

1. Addock, R. (2007, October 25). *Through Life Capability*. Dipetik October 30, 2015, dari A Cranfield University Web Site:  
[http://www.cems.uwe.ac.uk/~tlwinnin/CPDA\\_D6/Sessions/Systems%20in%20Acquisition/Through%20Life%20Capability.pdf](http://www.cems.uwe.ac.uk/~tlwinnin/CPDA_D6/Sessions/Systems%20in%20Acquisition/Through%20Life%20Capability.pdf)
2. Agus S. Marza (2017). *Kesiapan Penerbang Pesawat C-130 Hercules Skadron Udara 31 dalam Rangka Mendukung Kesiapan Operasi TNI AU*. Tesis Program Studi Manajemen Pertahanan Universitas Pertahanan
3. Alamie, Nanang F. (2007). *Analisis Optimalisasi Tingkat Operasional (Availability) Pesawat C-130 Hercules Versi Militer*. Tesis Program Studi Teknik Penerbangan Institut Teknologi Bandung.
4. Betts, 1995
5. Bucur, 2009
6. Byron, 2007
7. Effendi, Teguh (2018). *Pengaruh Kompetensi dan Budaya Organisasi terhadap Kinerja Personil dalam Pelaksanaan Program Keselamatan Terbang dan Kerja di Komando Pemeliharaan Materiel TNI AU (Koharmatau)*. Tesis Program Studi Strategi Pertahanan Udara Universitas Pertahanan.
8. Goodman, 2015
9. ISO 31000 (2009)
10. ISO, 2009
11. Molenaar, K. et al. (2002). *Corporate Culture – A Study of Firms with Outstanding Safety Performance*. Professional Safety, 47 (7), 18-27.
12. Osborne, David E. & Plastrik, Peter. (2001). *Banishing Bureaucracy: The Five Strategies for Reinventing Government*. New York: Plume.
13. Peraturan Menteri Pertahanan No. 17 Tahun 2014.
14. Poiger, Martin (2010). *Improving Performance of Supply Chain Processes by Reducing Variability*. Disertasi Vienna University of Economics and Business.
15. Reddy, Moharir, dan Karamchandani (2018)
16. Santoso (2011)
17. Suryanto, Deddy (2015). *Pengaruh Alokasi Biaya Pemeliharaan, Manajemen Pemeliharaan, dan Pelaksanaan Pemeliharaan terhadap Kesiapan Engine T56 Pesawat C-130 Hercules TNI AU Periode 2009-2013 (Depo Pemeliharaan 30 – Malang)*. Tesis Program Studi Ekonomi Pertahanan Universitas Pertahanan.

18. Widiyanto, Arif (2015). *Analisis Penerapan Safety Management System pada Operasionalisasi Alutsista Pesawat Terbang TNI AU dalam Rangka Mendukung Kampanye Militer (Studi Tentang Pencegahan Kecelakaan Pesawat Terbang di TNI AU Periode 2010 s/d 2014)*. Tesis Program Studi Strategi Kampanye Militer Universitas Pertahanan.
19. Widodo (2014)

## THE ROLE OF CORPORATE CULTURE IN THE CONTEXT OF CORPORATE MARKETING STRATEGY

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### ABSTRACT

*Enterprises are currently in a very complex environment. Increasing globalization has a significant impact on the competitive environment. Companies are forced to continually seek out sources of competitive advantage, that can make them successful in the long term.. The long-term success is closely related to the process of creating a strategy, in which the marketing have a key role. In general, a strategy is a way of achieving objectives under the certain conditions. Top management of the company deals with strategic planning, which formulates long-term, strategic goals and seeks a strategy that represents procedures and ways to achieve them. On the other hand, quality output require quality employees. Only an enterprise with a good corporate culture that is undoubtedly a source of competitive advantage, can recruit and retain employees. Within the framework of various concepts of increasing the efficiency of business activities, the company culture is currently becoming a central theme. Managers are beginning to realize that just the right leadership and also a harmonized culture in a company can be a source of competitive advantage, especially when incorporated into its strategic management. The issue of corporate culture and its capture in practice is therefore particularly important on the road to business success. Corporate culture is a phenomenon that is very complex and difficult to define, but which significantly affects the long-term success of a business. A strong corporate culture positively influences decision-making, communication, cooperation, level of cooperation, motivation, problem solving and their implementation, thus facilitating the course and implementation of management processes. The aim of the article is to point out the background of the corporate culture and its role in connection with the marketing strategy of the company.*

**Keywords:** *Corporate culture, Marketing, Strategy*

### 1. INTRODUCTION

The basic goal of any business is to achieve prosperity and success. The overall policy, decisions and all activities of the company depend on this goal. A business can only prosper if consumers are interested in products and services. Current manufacturers do not provide to their customers only tangible products, but also deliver services and integrated solutions in today's globalized environment (Kanovska, 2018). Consumer behavior is determined by several factors in the cultural, social, personal and psycho-logical spheres (Valaskova, et al. 2018). In the consumer struggle, it is essential for businesses to build their competitiveness and also to gain

a sustainable competitive advantage (Janoskova, et al. 2018). One of the means of increasing competitiveness is marketing. Marketing is the process of planning, implementing and monitoring price developments, promotion and distribution of the product while simultaneously are fulfilled all criteria of satisfying the needs of the customer, achieving goals of a company and compatibility of the whole process (Misankova and Chlebikova, 2013). Promotion includes, for example internet advertising. Marketers see internet advertising as a part of an overall promotional strategy (Madlenak and Svadlenka, 2009). Except for promotional strategy, there are also other marketing strategies that are aimed at achieving corporate success. When implementing a strategy in a company, it is not possible to overlook the important factors of internal strength, which are strategic leadership and corporate culture. Business managers are beginning to realize that just the right leadership and also a harmonized culture in a company can be a source of competitive advantage, especially when incorporated into its strategic management. In terms of competitiveness Dedina and Odchazel (2007) state that the culture of the company has become one of the most important soft factors of the company's existence in recent years. Kachanakova (2008) describes people as the bearers of corporate culture. Employees must understand the culture of the company in which they are employed, know who they are, where the company is heading, what its mission and vision is for the future. When employees know the vision, they should know what goals are related to it and how the company wants to achieve the goals, so what is the strategy of the company (Dedina and Odchazel, 2007). One of the basic factors of business success are human resources or theories based on human resources. The performance and competitiveness of the company are closely related to the behaviour of employees - their involvement, the number of improvement proposals submitted, the company's commitment, adherence to the corporate culture and internal cooperation. For this reason, human resources are gaining extraordinary value in the new economy. When analysing the success of an organization, it is the corporate culture that is key to its effectiveness (Vysekálová and Mikes, 2009). Only a satisfied customer, supplier and employee together create conditions for higher operating profit, ie long-term success of the company. In any group of people there is a set of principles and actions that allows a fairly uniform view of reality that is referred as culture. Businesses as social groups develop their individual and specific cultures. Corporate culture is part of the existence of every organization. It is created spontaneously or in a controlled manner through the influence of corporate management. Corporate culture is included in approaches, difficulty styles, managerial personality and workplace atmosphere. It includes handing over, communicating, presenting traditions, customs, myths and legends. Each enterprise has its own distinctive culture that distinguishes it from other businesses. These are mostly informal and unwritten rules that share basic beliefs and have proved to be so respected and considered valid by employees. Culture in the company derives from strong personalities who have marked the company in the past, but it is also strongly influenced by the current business environment and also by employees. Corporate culture can significantly help the successful implementation of a strategy. Marketing strategy is a process through which is secured the effective functioning of the company and achieving the goals of the company. The result of a good marketing strategy is customer satisfaction and the profitability of the company, which is the success of the company. The choice of marketing strategy depends on used the marketing tools, that's why it is important to building and managing strategy (Kliestikova and Janoskova, 2017). The compliance of the strategy with culture is positively demonstrated by the efforts and engagement of employees to work towards the implementation of the strategy. It can be weak and inconsistent or strong and integral, depending on the employees of the company and their identification with the vision, mission, strategy, goals, or tasks that are expected of them. If work is considered only a means of subsistence and there is a high mistrust of its co-workers and superiors, it is usually a weak corporate culture.



Conversely, if workers know their roles and consciously work on their implementation, we can talk about a cohesive and strong corporate culture.

## **2. THEORETICAL BACKGROUND**

### **2.1. Corporate culture**

The definition of corporate culture is not entirely clear, as there are many definitions that differ from each other. Perception cultural dimensions (Dan, 2019) is different. Usually the term corporate culture is understood as a characteristic of the internal climate of a company and what scale of values, goals and perspectives of further work is shared by most of its employees. It is a set of opinions, values, attitudes and standards of behavior that are shared within the organization and externally manifested in the behavior of the members of the organization. It is a reflection of how a company is perceived by its business partners and the wider public (Dedina and Odchazel, 2007). Kachanakova (2008) in the context of corporate culture states that it can be called the spirit of enterprise. She also points out that culture exists in every business and it can have a positive and a negative character, which distinguishes it from other businesses. There are various simple but also complex definitions of corporate culture in the literature. According to the 1996 Great Economic Encyclopedia, this is a set of habits, opinions, value systems and standards of behavior that are unique to each business and determine the nature of its business. It is an expression of specific and general types of behavior that characterize the life of the company or organization. Corporate culture expresses the socio-psychological dimension of corporate reality in a complex way and thus supports or hinders the implementation of a new corporate strategy. According to Charvat (2006) culture is a set of standards, belief values that are not written anywhere but people behave according to them. Culture can be understood as the way things are done in a company. According to Horakova et al. (2008) the corporate culture is based on the values set out in the corporate philosophy and includes goals, style of behaviour, certain rituals, etc. Initially, it is planned and influenced to support the desired corporate identity and corporate personality. Over time, it begins to form itself under the influence of the everyday life of the company and it is therefore important to regularly check and confirm the corporate culture. This includes, for example, an intranet, internal communications manuals, internal magazines, management meetings with employees, team building events, company or personal anniversary celebrations, and programs for current employees. Corporate culture has the strongest impact on company employees and directly affects their motivation. Culture influences individual behaviour and organisational patterns and helps shape economic action within society (Nesmeianova and Lipatov, 2019). Kachanakova (2008) summarized the common characteristics that are included in the definitions of most authors. These common characteristics include e.g. templates of basic assumptions according to which the employees of the company behave and symbolism on the basis of which the values are communicated to the employees of the company. Vysekalova and Mikes (2009) consider the basic elements of corporate culture:

1. Symbols - abbreviations, slang, way of dressing,
2. Heroes - an ideal employee or manager,
3. Rituals - informal activities (celebrations), formal meetings, writing reports, planning,
4. Values - the deepest level of culture. it is generally about what is good and what is bad, worthwhile or worthless.

The values of the company must be in balance with the values of employees, because otherwise there will be no identification with the company and consequently there is a reluctance to take responsibility for independent decision-making, taking risks, increasing work efficiency, etc. (Dedina and Odchazel, 2007).

In the context of corporate culture, symbols can be considered as having both meaningful and easily understood content. In addition to material form, they may take the form of verbal symbols, symbolic actions and status symbols:

- Symbols of material nature (artifacts). This group includes business building architecture, office and production facility equipment, product design, business logo, promotional materials and other business style components.
- Verbal symbols. The most important means of transferring corporate culture is language, which is a natural tool of human communication. Every employee should learn and learn the typical language of the company in order to understand the culture.
- Symbolic actions are essential for shaping, recognizing and consolidating a corporate culture. Symbolic behavior and action are most often in the form of ceremonies, rites, and various rituals that represent a type of habit, custom with a particular meaning.
- Status symbols are considered function labels and performance-related material benefits that can strongly motivate employees to achieve a specific function.

Rituals include informal activities (celebrations) and formal meetings. Lukášová (2010) describes habits, rituals and ceremonies as established patterns of behavior that are maintained within an organization while helping the organization function smoothly, reducing uncertainty, creating a stable and predictable environment for employees, and enabling workers to create their own identities. The habits are e.g. birthday parties, Christmas parties, promotion-related habits, problem-solving habits. Rituals are ways of saluting, ways of communicating workers from different organizational levels, voting in a meeting, and way of hiring new employees and so on. Ceremonies are various festive events held on special occasions. Lukasova (2010) she further states that the role of heroes as strong elements of the corporate culture was emphasized in particular in the early 1980s, but even today their existence within the enterprise is of some importance. For workers, heroes are the personification of core values and fulfill important functions in the company, such as providing model behavior, setting high performance standards, symbolizing the business to the outside, motivating employees, maintaining and enhancing the uniqueness of the business. Some heroes are born, such as. Henry Ford, Tom Watson, Thomas Bata and their uniqueness can affect several generations. The second group are situational heroes who are heroes for a shorter period of time. An example of situation heroes is the evaluation of the employee of the year or the seller of the month. An important reason for developing, implementing and maintaining a good corporate culture is that it enhances the quality of collaboration among all employees. It further improves their motivation and hence labor productivity, innovation potential and overall results. On the other hand, corporate culture is an important factor in the competitiveness of a company (Vysekalova and Mikes, 2009). Many factors influence the content and strength of corporate culture, including the environment within which it is mainly the impact of national culture, business environment, competitive environment, customer requirements and strength, professional culture, and so on. Other factors include e.g. size and duration of the enterprise, the technology used, etc. Among the basic criteria that a corporate culture should meet is the conciseness, ie clear and comprehensible definition of all employees, what action is required of them, what is still acceptable and what is unacceptable. (Kachanakova, 2008). Culture in the enterprise includes more areas that should be maintained in constant compliance. McKinsey & Co created a model known as a system of seven S, through which it is possible to examine the consistency of individual areas in the company and between: strategy, organizational structure, beliefs, staff, systems, skills, style. These seven areas need to be aligned to make the strategy implementation as successful as possible. Sometimes it is easier to change or completely replace workforce or start a new business than to change a deep-rooted culture that does not support strategy.

## 2.2. Corporate marketing strategy

In general, the concept of strategy is referred to as the sum of human intentions and activities that it uses to achieve its goal. Each business has a goal of its business endeavor. Marketing objectives in the enterprise are transferred from business goals. If the use of marketing in business is to be effective, it cannot be chaotic, but it must have the momentum to reduce marketing activities with a focus on the set goals. (Kretter, 2004). The strategy expresses the direction of the company and its competitive advantage. Strategy is understood as a program opinion (eg in the form of a document) of the top management of the company. It includes the definition and organization of a set of business development goals in space and time, setting appropriate conditions, assumptions and procedures for achieving them and ensuring a flexible way of adapting the objectives to substantial changes in business activity. Innovation is the driving force behind the strategy, and hence the longer-term business activity. The business strategy is usually based on the business vision and the specific mission of the business. Most often, the strategy takes the form of sufficiently free instructions to be followed in the enterprise and descriptions of the activities that the enterprise must undertake to achieve certain objectives. Regarding the basic types of company strategies, the traditional Porter approach shows that the essence of any strategy is a competitive advantage. Every successful enterprise must choose the type of competitive advantage to be sought and exist in the market. (Smejkal and Rajs, 2013). Kotler describes the marketing strategy as a marketing logic by which the company achieves its marketing goals (Kotler, 2007). Marketing strategy is understood as a long-term concept of business activity in the field of marketing and its purpose is to deliberate and purposefully allocate the company's resources so that two basic objectives can be achieved, customer satisfaction and gaining competitive advantage (Jedlicka, 2004). The essence of the strategy is to create hypotheses about the causes and consequences that make it possible to respond flexibly to the effects of internal changes in the enterprise and to the impact of changes in the external environment as they move towards the highest objectives set, so as to ensure synergies. When comparing the opinions of several authors in the marketing field, we find that each of them focuses on the specifics close to his knowledge and experience, and that he emphasizes defining the meaning of a certain part of the marketing strategy. The marketing strategy includes the following stages:

- Analysis phase - includes market research, market segmentation, targeting, positioning, analysis (5F, BCG, PESTLE, SWOT).
- Synthesis phase - creating a marketing mix and its components, setting sales targets (sales volume), setting prices, defining ways of promotion and distribution, etc.
- Implementation phase - production and sale of a product or service
- Control and correction phase - evaluation of sales results, correction of marketing strategy.

The paper aims to analyse corporate culture and its role in connection with marketing strategy of the company. We realised a consumer survey focused on corporate identity. Given that corporate culture is part of corporate identity, we can use the result of this survey for the purposes of this paper. The questionnaire was created and distributed in electronic form to respondents from Zilina district, via Google Form. Subsequently, we evaluated the questionnaire through descriptive statistics. The survey file consists of 314 (100 %) respondents. In the questionnaire survey participated 152 women, representing 48 % of the survey and 162 men, what is 52% of the survey. In the survey, one of the task of the respondents was to indicate the degree of importance of individual elements of corporate identity for them. The results of the survey show that business communication is the most important component of corporate identity for customers. It was identified as an important element by 242 (77%) respondents, on the other hand, the least important element is the corporate culture, which was identified as not important by 31 (19%) respondents (Figure 1).

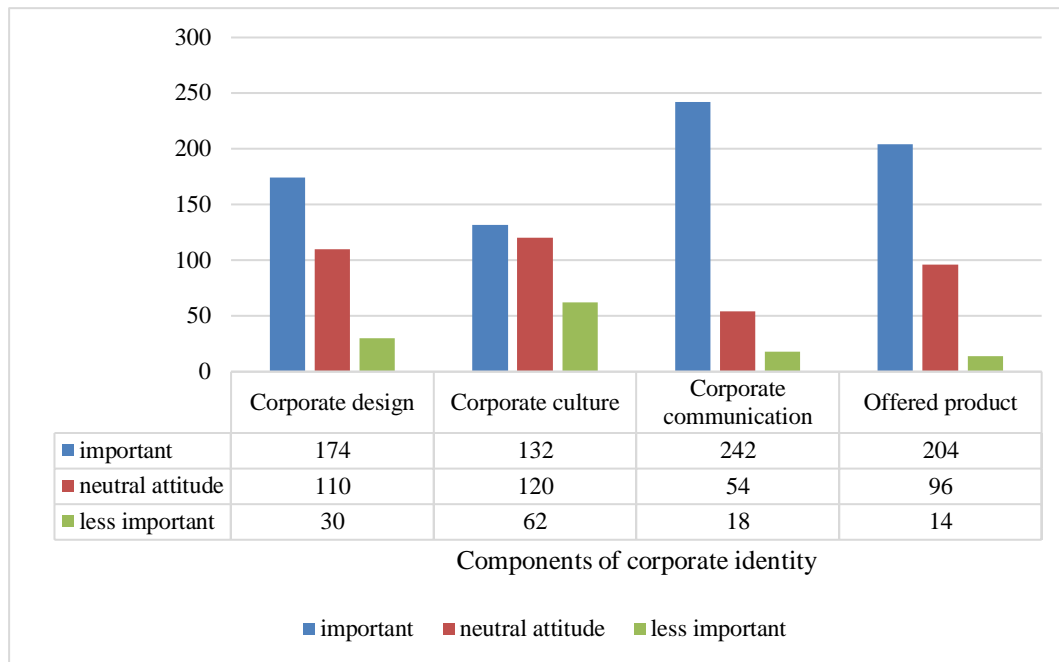


Figure 2: Importance of components of corporate identity (own processing)

### 3. RESULTS AND DISCUSSION

The results show that of the four basic elements of corporate identity (communication, product, design, culture), corporate culture is the least important for customers. This fact can be perceived from the consumer's point of view as this is because the corporate culture is more important within the internal environment of the company and therefore within the employees. In any case, it is necessary for companies to implement the corporate culture also in the external environment and to build it towards the customers and consumers. Corporate culture is a complex system of goals, ideas, intentions, rules, attitudes, opinions, norms, beliefs, customs, traditions, symbols and material conditions of a given enterprise (Blaskova, 2005). Kachanakova (2008) points out the importance of corporate culture in the sense that it has a great influence on the conduct, thinking and actions of employees. There are several specific ways in which a business can improve its corporate culture. One of the main ways a company can improve its corporate culture is to regularly conduct teambuilding and brainstorming sessions where employees and management will informally discuss their ideas and requirements. It is also a way to strengthen employee relations and strengthen the team. In today's competitive environment, available resources, activated human potential, strategic leadership as well as a strong, cohesive and proactive organizational culture are essential to achieve business goals and ensure business success. Organizational culture is a phenomenon that is very complex, difficult to define and depict, which significantly affects the long-term success of an organization. It can be a valuable asset for an organization, as well as a significant obstacle to implementing a new strategy. Therefore, the management of the organization must set important values such as loyalty to the organization and supervisors, flexibility, communication, ability to integrate and responsiveness to new changes. It must strive to maintain the traditional organizational culture in line with the new requirements so as to avoid dramatic changes. The organizational culture must be communicative and lively, enabling it to identify with all the staff of the organization. Although elements of organizational culture are not defined uniformly by individual authors, they are most often considered as elements of culture: basic assumptions, values, norms, attitudes, artifacts of material and immaterial nature (Basistova and Olexova, 2012). Managers of many companies devote a substantial part of their decision-making activities to solving operational problems.

Therefore, the importance of formulating a long-term business strategy for the successful operation of the company and its further growth is also underestimated. Organizational culture is formed during the long-term development of an organization based on vision, mission and strategy. This process of forming takes place under specific conditions, in organizational and psychosocial space. Corporate culture affects strategy development and implementation. It plays an important role in both phases. The content of organizational culture affects all phases of the strategy making process, where the level of strategic management knowledge and aspects of organizational culture are most important in this context (Mihalcova a Gavurova, 2007). In the process of strategy creation, an analysis of the impact of the macro-environment, micro-environment of the organization and its internal resources and capabilities is necessary. The process of strategic decision-making is dependent on a large amount of relevant information because its ambiguity can significantly affect the diversity of interpretations influenced by different cultural environments. Successful implementation of the strategy is based on how management can create an environment in an organization that supports change (Mallya, 2007). Changes should be accepted as an opportunity to further develop the business, not as a threat to the stakeholders concerned. Shared values and attitudes forming an organizational culture must take an active attitude to change. The basis of the company's long-term success is a culture that constantly supports change. Most people have a negative attitude towards implementing the strategy because they do not understand why changes are needed. Management must therefore create an environment that ensures greater loyalty and identification with the company's goals, ultimately leading to their smooth achievement. Corporate culture in the process of implementing the strategy can be a benefit on the one hand and a barrier on the other. It depends on the strength of the organizational culture as well as the compatibility of the content of the culture with the content of the strategy set. The degree of organizational culture's influence on strategy development depends on the composition of the team developing the strategy and the quality of the strategic analysis performed. The concept of implemented marketing strategies is changing with the process of globalization, technical progress and changes in customer requirements (Krizanova, et al. 2013). Technological changes (Fox, 2018) are currently an important part of the business environment and management systems. It is important for companies that the management system is very successful and uses management practices (Nadanyiova, 2014).

#### 4. CONSLUSION

A strong corporate culture positively influences decision-making, cooperation, communication, motivation, level of cooperation, problem solving and their implementation, thus facilitating the course and implementation of management processes. Corporate culture gives individuals the opportunity to justify their behaviour in relation to the values preferred in the enterprise. Managers, on the other hand, can use the corporate culture to support those activities they are interested in. The results show that corporate culture is of the least importance to customers. The theory points to the importance of corporate culture within the internal environment of an enterprise and to the importance of corporate culture for employees. It is important for businesses to build their corporate culture, as it is an important element in developing a corporate marketing strategy

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## LITERATURE:

1. Basistova, A. and Olexova, C. (2012). *Organizacna kultura ako nastroj riadenia ludskych zdrojov*. Bratislava: Ekonom.
2. Blaskova, M. (2005). *Organizacne spravanie*. Zilina: Zilinska univerzita.
3. Dan, H. (2019). Culturally green - an investigation into the cultural determinants of environmental performance, *Forum Scientiae Oeconomia*, vol. 7, no. 2, pp. 107-126.
4. Dedina, J. and Odchazel, J. (2007). *Management a moderni organizovani firmy*. Praha: Grada Publishing.
5. Fox, Mark A. (2018). Drive-in Theatres, Technology, and Cultural Change, *Economics, Management, and Financial Markets*, vol. 13, no. 2, pp. 24–39.
6. Horakova, I., Stejaklova, D. and Skapova, H. (2008). *Strategie firemni komunikace*, Praha: Management Press.
7. Charvat, J. (2006). *Firemni strategie pro praxi*. Praha: Grada Publishing.
8. Janoskova, K., Kral, P. and Krizanova, A. 2018. The impact of Business Innovation on Brand Value, *Journal of Innovative Business and Management*, vol. 2. DOI 10.32015/JIMB/2018-10-2-3.
9. Kachanakova, A. (2008). *Podnikova kultura*. Bratislava: Ekonom.
10. Kanovska, L. (2018). Smart services and their benefits for manufacturers from a global perspective, *Ekonomicko-manazerske spektrum*, 12(2), 46-56.
11. Klietkova, J. and Janoskova, K. (2017). Branding with understanding: how national profile of consumer influences brand value perception, *Marketing and management of innovations*, no. 3, pp. 149-157.
12. Kotler, P. et al. (2007). *Moderni marketing*. Praha: Grada Publishing.
13. Kretter, A. et al. (2004). *Marketing*. Nitra: Slovenska poľnohospodarska univerzita.
14. Krizanová, A., Majerova, J., Klietk, T., Majercak, P. (2013). Theoretical Aspects of Brand Building in Seafood Industry, *Nase more*, 60 (5-6), 105-112.
15. Lukasova, R. (2010). *Organizacni kultura a její zmena*. Praha: Grada Publishing.
16. Madlenak, R., Svadlenka, L. (2009). Acceptance of Internet advertising by users in the Czech Republic, *E&M Ekonomie a Management*, vol. 12, no. 1, pp. 98-107.
17. Mallya, T. (2007). *Zaklady strategického riadenia a rozhodovanie*. Praha: Grada Publishing.
18. Mihalcova, B. and Gavurova, B. (2007). Organizacna kultura ako faktor uspesnosti organizacie, *Manazment v teorii a praxi*, vol. 3 no. 4.
19. Misankova, M., Chlebkova, D. (2013). Possibilities for financing innovation activities in Slovak Republic, *Proceedings of 9th International Scientific Conference on Financial management of firms and financial institutions*, Ostrava, pp. 562-570.
20. Nadanyiova, M. (2014). Japanese management and its practice in company branch based in Slovakia, *8th International Scientific Conference on Business and Management* Location: Vilnius, LITHUANIA Date: MAY 15-16, 2014.
21. Nesmeianova, R. K. and Lipatov, S. A. (2019). Structural models of the relationship between perceived types of corporate culture and organizational identification, *Voprosy Psikhologii*, vol. 2, pp.97.
22. Smejkal, V. and Rajs, K. (2013). *Rizeni rizik ve firmach a jinych organizacich*. Praha: Grada Publishing.
23. Valaskova, K., Klietkova, J., Krizanova, A. (2018). Consumer Perception of Private Label Products: An Empirical Research, *Journal of Competitiveness*, vol. 10, no. 3, pp. 149-163.
24. Vysekalo, J. and Mikes, J. (2009). *Image a firemni identita*. Praha: Grada Publishing.

## CAPITALIZATION MODEL OF CAPITAL RESOURCES IN INTEGRATED REPORTING

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### ABSTRACT

*The article discusses the problem of the conformity of modern accounting statements to the information needs of a wide range of stakeholders in real and reliable assessment of business value based on the reflection in the integrated reporting of the capitalized cost of stocks of various types of capital (financial, industrial, human, client, etc.). For this, it will be necessary to substantially clarify the current balance sheet model of accounting with a business accounting model that allows capitalizing the stocks of the cost of various types of capital, considered as assets that ultimately form a business valuation. As a result, the creation of this balance model reflecting the capitalized cost of capital stocks will allow us to exclude unusual costs (for example, transaction costs) from the cost of manufactured products and, thereby, increase financial results. The proposed business accounting model complies with the International Concept of Integrated Reporting and enables the accounting reflection of the processes of redistributing profits to the formation of the necessary stock of capital costs, ensuring sustainable business development. The main objective of the business accounting model and integrated report is to improve the quality of information necessary for financial capital providers in order to make decisions on the most efficient and productive distribution of funds. For its part, the accounting community can help achieve this goal (at no additional cost) by capitalizing costs rather than including them in cost, while forming, for example, client capital or human capital, which will undoubtedly affect the increase in valuation of business and, accordingly, will lead to higher profits. At the same time, the authors of the article designate the business accounting model as an information system for the continuous improvement of business value creation processes, based on informational support on forecasts and actual value reserves of various types of capital, providing real support for value creation processes in the short, medium and long term. This approach in business accounting should be based on the development of certain principles in the preparation of an integrated report, providing a balance between the variety of circumstances in which the organization operates and the strict requirements defined by IFRS.*

**Keywords:** Capitalization, Cost of capital, Integrated reporting

### 1. INTRODUCTION

Today, the acute problem is the inconsistency of modern financial statements with the information needs of a wide range of stakeholders in real and reliable assessment of business value. That is what the International Standard for Integrated Reporting (ISIR) is aimed at. ISIR developers as the fundamental goal of integrated reporting interpret it as: «providing information on the resources and relationships that the organization uses and affects», as well as «explain how the organization interacts with the external environment and capital to create value over the short, medium term and long term» (ISIR, 2013, p.6). This tool (IR) appeared in commercial activities, which is associated with the need to systematize various types of information in one report (Abeysekera, 2013, pp. 227-245; Busco, C., Frigo, ML, Riccaboni,

A., Quattrone, P., 2013, pp. 3-18; Druckman, P., Fries, J., 2010, pp. 81-85; Eccles, RG, Krzus, MP, 2010; Eccles, RG, Serafeim, G., 2014; Jensen, JC, Berg, N., 2012, pp. 199-316), and quickly spread, having received the first regulation (Robertson, FA, Samy, M., 2015, pp. 190-223; Rowbottom, N., Locke, J. , 2016, pp. 83-115). An integrated report can provide information on the various types of tangible and intangible resources involved in the organization's value creation process (Katsikas, E., Rossi, F.M., Orelli, R.L., 2017). The main purpose of integrated reporting is precisely the explanation «to suppliers of financial capital, how the organization creates value over time. An integrated report is useful for all interested parties who value the organization's ability to create value over time» (ISIR, 2013, p.6). Integrated reporting becomes a strategic communication tool for integrating various points of view on value creation, offering a new understanding of approaches to sustainable development, corporate governance, as well as all types of capital. One of the key elements of an integrated report is the organization's business model, which «represents a system of transforming resources through its commercial activities into products and results aimed at achieving the organization's strategic goals and creating value over the short, medium and long term» (ISIR, 2013, p. 4.1). Thus, with ISIR, there is a need for integrated thinking that allows you to generate and explain information about the processes of creating value over time in the framework of a separate, special type of accounting - business accounting. To successfully achieve the goal of integrated reporting, in addition to traditional accounting tools, it will be necessary to develop business accounting mechanisms, which should become the informational basis of the business model, its motivational element in making decisions by financial capital providers in the allocation of organization resources. One of the tasks of successful functioning of an organization in a market economy is determined by a relevant and reliable assessment of the value of its business, on the basis of which its strategy should be formed - a strategy for the sustainable development of the organization. To solve this problem, it will be necessary to substantially clarify the current balance sheet accounting model with a business accounting model defined as an information system that reflects the processes of continuous improvement of the organization. The business accounting model is aimed at generating information on the creation and growth of business value, based on information support on forecasts and actual capital stocks (financial, industrial, human, client, intellectual, social and reputational, natural) that provide and create conditions for creating value in the short, medium and long term. It is on the development of such a model of business accounting that ISIR aims us. It should be noted that in ISIR, in contrast to the traditional balance sheet theory, capital is treated as resources, that is, assets of the organization, and not its liabilities. Therefore, the overall goal of classifying capital stocks for accounting is to create an orderly capital structure of the organization. Without such a structure, the efficient management of capital accounts and their alignment with economic benefits are impossible. The ISIR defines capital: «Capital is the stock of value that increases, decreases or transforms as a result of the organization's activities and the results of this activity» (ISIR, 2013, p.6). However, initially, it is necessary to determine the answer to the question: how is this stock of value of various types of capital formed to reflect them in integrated reporting? To answer this question, it is necessary to solve the following problem: to develop a model for accounting for the capitalization of stocks of the cost of various types of capital of an organization that form an assessment of the value of a business and, thereby, clear the cost of manufactured products (works, services) from unusual costs. Moreover, Ya.V. Sokolov in his study notes: «Capitalization and reservation are the gains of the long history of accounting, the work of many of our colleagues - theorists and practitioners» (Sokolov, Y.V., 2000, p.471). At the same time, Ya.V. Sokolov, speaking of capitalization, reduces it to the following concept: «if the expenses incurred in this reporting period will bring income in subsequent reporting periods, then such expenses are subject to capitalization, that is, exclusion from the expenses of this reporting period and inclusion in the assets of the



enterprise» (Sokolov YV 2000, p. 462). This article is about the capitalization of stocks of the cost of capital, and not about the expenses of the company that were not transformed into costs during the reporting period, that is, the capitalization of investment costs that form the stocks of the cost of capital. It is more appropriate to talk about the range of relevance in time as the interval for creating a stock of the cost of capital, in which such a stock can be considered useful to ensure the sustainable development of the organization. In addition, attention should be paid to the types of activities that create stocks of the cost of capital, which provide an assessment of the value of the business as a whole and increase the value of the organization for investors. This approach requires the reform of the current accounting system, as well as fundamental changes in the methodology and methodology of accounting for the organization's investment processes.

## **2. CHAPTER FINANCIAL CAPITAL**

The identification of value objects and the specification of their assessment imply the existence of certain criteria, and the criteria themselves depend on the purpose of the assessment. The objectives of the assessment are interlinked with the identification of objects accounted for as elements of financial capital. In ISIR, financial capital is interpreted as follows: «Financial capital is a reserve of funds that: o are available to the organization for use in the production of goods or the provision of services; o come through financing (debt, equity financing and grants) or are created as a result of operations or investments» (ISIR, 2013, clause 2.15). This is not an exhaustive list of stock items of financial capital value. The determination of financial capital as a reserve of funds for a long period is not advisable. In this case, it is more advisable to talk about creating a reserve of funds in the range of relevance in time, that is, in a certain period of time, within which it is supposed to use the stock of the cost of financial capital to form stocks of the cost of other types of capital and the process of creating value.

### **2.1. Amortization as an element of financial capital**

Cash acquire special significance in relation to financial capital, since they are easily transformed into stocks of the cost of various types of capital. Cash is the main element of financial capital, its inflow is formed mainly from sales proceeds, which is income from ordinary activities. The main purpose of obtaining this income is to reimburse costs for the production of products (works, services) with profit. In our study, the process of cost recovery associated with the acquisition of long-term tangible and intangible assets is of interest. Amortization of fixed assets (production capital) also applies to such costs. The accountant, reflecting the reimbursement of the value of long-term tangible assets, should focus on another factor - on the capitalization of the part of the income received from the reimbursement in revenue, expressed by depreciation. In the business accounting model, we proceed from the assumption that capitalization of income (part of revenue) and reflection of the potential of financial capital will make it possible to form a stock of the cost of production capital in the integrated balance sheet asset. The concept of preserving the stock of productive capital is based on the adequacy of financial capital funds and their intended use. For this, at the first stage, it is necessary to reflect the monetization of indicators of impairment losses, losses in the stock of value of production capital, for example, as follows:

- 1) the debit of the account «Losses from impairment of production capital» credit of the account «Fixed assets».

The second stage is the monetization and reflection in business accounting of the indicator of compensation for losses from impairment of production capital:

- 2) the debit of the account «Production costs» credit of the account «Amortization of fixed assets».

In this situation, we consider amortization as a source of financial capital, reflecting the possibility of recovering losses from impairment of fixed assets. This accounting process can be reflected as follows:

- 3) the debit of the account «Amortization of fixed assets» loan account «Loss from impairment of fixed assets».

At the third stage, it should be borne in mind that financial capital is a reserve of funds. Therefore, this cash reserve in the framework of financial capital must be created as necessary in the financial capital funds in the acquisition, construction or creation of fixed assets:

- 4) the debit of the account «Financial capital», the sub-account «Cash reserve for compensation for losses from impairment of fixed assets», the credit of the account «Settlement accounts»;

At the fourth stage, the process of forming the stock of the cost of production capital from the reserve of financial capital funds should be reflected.

Payment of contractor or supplier bills:

- 5) the debit of the account «Settlements with suppliers and contractors», credit of the account «Financial capital», sub-account «Cash reserve for compensation of losses from impairment of fixed assets»;

and, finally, the reflection of the capitalization of the stock of cash in the cost of production capital:

- 6) the debit of the account «Investments in non-current assets», the credit of the account «Settlements with suppliers and contractors»;
- 7) the debit of the account «Fixed assets» credit of the account «Investments in non-current assets».

This is the content of the general model of business accounting, which reflects the transformation of financial capital into a stock of the cost of production capital, taking into account the fact that in this situation the principle of «reliability and completeness» must come into effect: «People with managerial responsibilities **are responsible** for how the organization's strategy, management, performance, and prospects lead to value creation over time» (ISIR, 2013, clause 3.41).

## 2.2. Goodwill

A striking example of capitalization of the cost of capital is the economic category of goodwill, which is the subject of accounting as part of financial capital and intangible assets. Many experts criticize the ability of financial statements to report all the performance of organizations. Some scholars believe that it is impossible to fully disclose information about intangible assets in a financial report, and this discredits the initial information function of financial statements (Amir, E., Lev, B., 1996, pp.3-30). We do not agree with this point of view and will try to prove it using the goodwill business accounting model as an example. The methodology for researching the internal created goodwill is based on the concepts of business valuation, the Conceptual framework for the presentation of financial statements (the Conceptual framework), which makes it possible to comprehend the possibility and necessity of recognizing and evaluating this object in integrated reporting. In this situation, it is of interest to compare the internally created goodwill with the «economic resource» presented in the Conceptual Framework (CFPFS, 2018): «An economic resource is a right that has the potential to create economic benefits. For such a potential to exist, it is not necessary that with absolute certainty or even a high probability it can be argued that this right will create economic benefits.

It is only necessary that this right already exists and that, in at least one specific circumstance, this right could create economic benefits for the organization that exceed the benefits that are available to all other parties »(CFPFS, 2018, paragraph 4.14). This provision of the Conceptual Framework is directly related to the need to recognize internally created goodwill in the financial statements of organizations, since this asset at the time of presentation of the financial report reflects only right that has the potential to create economic benefits. Such a right may be transformed into a real asset under certain circumstances, namely: upon acquisition of shares of the investee. Income from an investee or subsidiary reflects the potential for generating economic benefits. At the same time: «The right can meet the definition of an economic resource and, therefore, be an asset, even if the probability that it will create economic benefits is small. Nevertheless, this low probability may influence decisions about what information to provide about the asset and how to provide it, including decisions about whether the asset should be recognized and how to evaluate it» (CFPFS, 2018, paragraph 4.15). A similar approach can be used with respect to internally generated goodwill, since internally generated goodwill meets the definition of an economic resource and, therefore, can be an asset, even if economic benefits can be obtained only in the future. Internally generated goodwill is the difference between the assessment of the market capitalization of an organization formed at a certain point in time based on an exchange estimate and the carrying amount of the organization for the current reporting period. Therefore, goodwill is a value that can be confirmed by cash flow in the future. The market evaluates the organization at the value of its securities. So to assess the effectiveness of an organization, it is necessary to explain the results of its functioning in the capital market, that is, give an objective market assessment of the organization or the market capitalization of the organization, which can be used to calculate the cost «where the cost component reflects changes in relation to future cash flows» (Black, E., 2009). Based on the principles of substantial accounting, which, at a minimum, recognizes double entry and balance, we propose to reflect the internally created goodwill on the debit of the Intangible Assets account, the subaccount «Internally created goodwill» until the organization's shares are sold on the exchange, since intangible assets are mostly reflect the right to future economic benefits, rather than a physical entity. More difficult is the determination of the offsetting account for the loan, since the «unrealized profit" is not reflected in the accounting rules in the accounting records. Therefore, we offer «unrealized profit» in order not to mix it with the consolidated accounting system, to reflect «Non-monetary profit» on the credit of the account, since it has not yet been confirmed by cash flow. Non-monetary profit is «rights or claims for which neither the date of conversion to money nor the amount of money to which they will be converted is known in advance» (Hendricksen, E.S., 1997). Such a technique is consistent with the Conceptual framework, in which «An economic resource could create economic benefits for an organization by granting it the right or providing the ability to perform, for example, one or more of the following actions: (a) receive cash flows or other economic resources provided for in the agreement;» (CFPFS, 2018). In addition, it is necessary to develop a model for accounting for the transformation of internally created goodwill into a real financial asset in a business combination transaction that ends with the acquisition of shares in the investee. Initially, you should pay attention to two factors that make it possible to comprehend the concept of internally created goodwill.

1. internally generated goodwill is an indicator that reflects a change in the organization's market capitalization, that is, a change in the stock price, but without selling them.

At the same time, internally created goodwill, which is formed upon the acquisition of control over the investee, is an integral part of the price, acting, as a rule, in the stock market. In this interpretation, IFRS already recognize goodwill as an asset.

2. goodwill is only the result of the valuation of other assets, assets, the control of which the acquirer obtained as a result of financial investments in the investee (subsidiary). Therefore, goodwill is the difference between the acquisition price and the fair value of all assets and liabilities assumed.

In assessing financial capital under current accounting rules, the value of internally generated goodwill is not reflected. However, there is a substantial connection between internally generated goodwill and the price that is formed as a result of market relations in a business combination transaction. To substantiate this substantial interconnectedness in accounting for a business combination transaction, we consider a number of factors that ensure an exchange business combination transaction. «Firstly, the contract itself as a financial instrument (forward contract and option) in most cases is bilateral, since mutual rights and obligations arise simultaneously for all participants in the exchange transaction. At the same time, each of the parties acts as an investor in the exchange transaction, since the producer (seller) must invest (or have invested) his funds in the production of the asset to be exchanged, and the buyer should invest cash (or other assets), allowing to compensate the manufacturer's investments. Secondly, any exchange transaction drawn up by an agreement (financial instrument) in the financial market is a reimbursable agreement, since the seller of an asset has the right to claim an appropriate cash or other consideration corresponding to the terms of the financial instrument for fulfilling its contractual obligations to present the underlying asset to the buyer. Thirdly, each exchange transaction in the market of financial instruments is of a consensual nature, since it is considered concluded from the moment of signing the agreement by the participants of the exchange transaction for all the essential terms of the transaction, the order and form of fulfillment of contractual obligations and, most importantly, determines the transfer of ownership of the asset» (Plotnikov, VS, Plotnikova, OV, 2018). Goodwill resulting from a business combination is manifested in an exchange transaction for the sale of shares, where the essential point is that the options are quoted on the exchange, and they are the object of sale. Let's try to deal sequentially with stock options trading and answer the question: what is the meaning of the above options for evaluating the internally generated goodwill? First, an option that determines the market value of internally generated goodwill is a commodity and, therefore, has a price. Then what is the basis for determining the option price? It is the difference between the market capitalization of the organization that is registered at a certain point in the exchange valuation and the book value of the organization that forms the valuation of internally created goodwill is the basis for assessing the intrinsic value of the option. This estimate, reflected in the balance sheet as an intangible asset, taking into account some temporary difference, can be recognized as an initial estimate of the value of the option. Secondly, the day of signing the contract, the purchase of an option, can be determined by the beginning of financial investments (investments) in a business combination transaction. In this situation, the seller's option, the put option in the owner's accounting should be recognized as a sale act. Therefore, non-monetary profit (unrealized profit) is transformed into sales revenue and can be reflected in the debit of the account «Non-monetary profit» and the credit of the account «Other income and expenses» with its subsequent reflection in the total income of shareholders. At the same time, internally created goodwill in the seller's accounting is transformed from intangible assets to financial capital structure: debit of the «Financial capital» account, «Goodwill» subaccount, loan of the «Intangible assets» account, and «Internally created goodwill» subaccount. At the same time, the financial accounting, investments made in the investee, which should be reflected in the debit of the account «Financial capital», sub-account «Goodwill» and the credit of the account «Settlement accounts», are reflected in the accounting of the buyer of the call option. Subsequently, in consolidated accounting and reporting, these accounting records are eliminated, but this is already a matter of a separate study.

Thirdly, the underlying asset in the option is the seller's shares, which should be reflected in the price fixed in the contract - the strike price. Hence, during the exercise of the option (contract expiration date), the strike price on the shares does not change, but the value of the option changes. «With an increase in the current share price, validity period, volatility or the risk-free interest rate, the value of the option to purchase shares increases. With an increase in the strike price or the amount of expected dividends, the value of the option to purchase shares decreases. With an increase in the strike price, validity period, volatility or the size of the expected dividends, the value of the option to sell shares, as a rule, increases. As the stock price increases or the risk-free interest rate increases, the value of the option to sell the shares falls. Acquisition of shares of another organization, of course, is a financial asset that brings benefits, or rather, gives the right to receive income. Therefore, it must be identified with the net assets of another organization from which these shares were purchased» (Plotnikov, V.S., Plotnikova, O.V., 2013). «And by the way, it is precisely this fluctuation in the exchange rate of securities that forms the difference making up genuine economic commercial profit. This is an objective market price. She ignores the details. It doesn't matter to her how someone evaluates assets or who creates reserves and how. The value of the company is a single complex» (Eliseeva, I.I., Dmitriev A.L. (comp.), 2010). The recognition and measurement of goodwill is the final accounting step for the recognition of a business combination accounted for using the acquisition method and the result of the completion of the transaction. In fact, goodwill is an accounting technique for allocating the value of financial assets (investments) to their value, corresponding to a share in the net identifiable assets of the investee and financial investments in excess of their nominal value.

### 3. CONSLUSION

The business accounting model proposed in the article introduces significant changes to the traditional accounting system and places emphasis on the integrated thinking of various groups of stakeholders and, above all, financial capital providers in understanding the information contained in integrated reporting, which can provide significant support in the efficient allocation of resources. The methods currently used in business valuation, based on financial statements, are inevitably outdated. The lack of assets, expressed in the form of various types of capital, significantly reduces the value of the business. The capitalization of income and expenses for the types of activities that form the stock of the cost of capital allows you to «clear» the cost of production (works, services) of the costs that are not typical for it and, thereby, increase profits and redirect cash flows to the formation of certain types of capital. Particular attention in business accounting should be given to intangible assets and, above all, goodwill, which is an important element of an economic resource and reflects the right of the owner, which has the potential to obtain economic benefits. The development of methodological and methodological approaches relevant to business accounting and integrated reporting is a task not only today, but also a promising direction for the development of accounting in the future.

### LITERATURE:

1. Abeysekera, I. (2013). A template for integrated reporting. *J Intellect Capital* 14(2), 227–245.
2. Amir, E., Lev, B. (1996). Value-relevance of nonfinancial information: the wireless communications industry. *J Acc Econ* 22(1), 3–30.
3. Black, E. (2009). *Cost issues. Master the latest management, investing and regulation techniques based on company value*. Moscow, Russia: Olymp-Business CJSC.

4. Busco, C., Frigo, M.L., Riccaboni, A., Quattrone, P. (2013). *Towards integrated reporting: concepts, elements and principles*. In: Busco, C., Frigo, M.L., Riccaboni, A., Quattrone, P. (eds) *Integrated reporting: concepts and cases that redefine corporate accountability*. Springer Science & Business Media. Springer International Publishing, Switzerland, 3–18.
5. CFPFS (Conceptual Framework for the Presentation of Financial Statements). (2018). Retrieved 15.09.2019 from [https://www.minfin.ru/ru/document/?id\\_4=125979](https://www.minfin.ru/ru/document/?id_4=125979).
6. Druckman, P., Fries, J. (2010). *Integrated reporting: the future of corporate reporting?* In: Eccles, R.G., Cheng, B., Saaltzman, D. (eds) *The landscape of integrated reporting*. The President & Fellows of Harvard College, Massachusetts, 81–85.
7. Eccles, R.G., Krzus, M.P. (2010). *One report. Integrated reporting for a sustainable society*. Wiley, USA.
8. Eccles, R.G., Serafeim, G. (2014). Corporate and integrated reporting: a functional perspective. *Working paper 14-094*. Harvard Business School.
9. Eliseeva, I.I., Dmitriev A.L. (comp.). (2010). *In memorial: Yaroslav Vyacheslavovich Sokolov (1938-2010)*. St. Petersburg, Russia: Nestor-History.
10. Hendricksen, E.S. (1997). *Theory of accounting*. Moscow, Russia: Finance and Statistics.
11. ISIR (International Standard for Integrated Reporting). (2013). Retrieved 15.09.2019 from [http://ir.org.ru/attachments/article/94/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK.docx\\_en-US\\_ru-RU.pdf](http://ir.org.ru/attachments/article/94/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK.docx_en-US_ru-RU.pdf).
12. Jensen, J.C., Berg, N. (2012). Determinants of traditional sustainability reporting versus integrated reporting. An institutionalist approach. *Bus Strategy Environ* 21(5), 299–316.
13. Katsikas, E., Rossi, F.M., Orelli, R.L. (2017). *Towards Integrated Reporting Accounting Change in the Public Sector*. SpringerBriefs in Accounting. Springer International Publishing, Switzerland.
14. Plotnikov, V.S., Plotnikova, O.V. (2013). *Accounting for financial instruments as a factor in ensuring the reliability of information on the functioning of a company in the market: a monograph*. Moscow, Russia: Publishing House «FINANCE & CREDIT».
15. Plotnikov, V.S., Plotnikova, O.V. (2018). *Business Combinations and Consolidated Financial Statements: A Monograph*. Moscow, Russia: INFRA-M.
16. Robertson, F.A., Samy, M. (2015). Factors affecting the diffusion of integrated reporting - a UK FTSE 100 perspective. *Sustain Acc Manag Policy J* 6(2), 190–223.
17. Rowbottom, N., Locke, J. (2016). The emergence of <IR>. *Acc Bus Res* 46(1), 83–115.
18. Sokolov, Y.V. (2000). *Fundamentals of accounting theory*. Moscow, Russia: Finance and Statistics.

## HOW TO USE THE VALUE-BASED PRICING STRATEGY TO INCREASE PROFITS OF COMPANY?

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### ABSTRACT

*If a company overcomes its challenging beginning - designs its unique product and manufactures it, it faces another challenging task - pricing. Pricing is a process, with the ultimate goal of defining a strategy that will maximize revenue to companies. Therefore, managers should pay enough attention to it and take into account the different types of pricing with regard to the specific needs of the company and its objectives. They can consider three common strategies used to define pricing process: cost-based, competitor-based, and value-based pricing strategy. Each of these pricing strategies has its place in business. This paper focuses only on value-based pricing strategy. Value-based pricing means determining the price of a product or a service based on the benefits it provides for the consumer. Companies are essentially attaching a price to their product or service based on what the consumers think the product is worth. When companies are using value-based pricing, they are trying to reach equilibrium where they are maximizing their revenues, yet charging the customers an amount, which they are also willing to pay. Companies have to find out how much customers are willing to pay for their products and what features they want to develop. Then these companies will be able to not only give customers what they want, but they will also be able to attract and retain these customers better. Goals of this paper are following: to explain of value-based pricing strategy; to mention main benefits and downsides of using this strategy and to provide a guide to determining a value-based price for products or services. Finally, this paper can help companies choose the right pricing strategy for their business and thus increase their profits.*

**Keywords:** *pricing, pricing strategy, value-based pricing strategy, value of products and services*

### 1. INTRODUCTION

Many customers buy products or services based not on the quality or value they get by purchasing the products or services, but on the lowest price. They are very price sensitive and are not interested in other benefits. Such customers have mostly less money and it is justified that they try to buy as much as possible for their small salary and ensure the running of the household. There is also the other “extreme” and they are very wealthy people who want to prove their position in society and thus buy the most expensive things of world brands. It is important for them to present themselves externally - they do not want to buy ordinary, non-branded products. Generally, the rule is: what is expensive is good, despite the fact that the high price of products is mainly for the brand and not for the characteristics of the product. We pointed to two types of customer segments out of many possible. For each of these customer categories (market segments) is effective a different type of pricing strategy.

Therefore, companies should know their customers perfectly (also other relevant information) and then to set a concrete pricing strategy. Nagle & Müller (2018) claim that the foundation of a profitable pricing strategy begins with a complete understanding of the economic value the product delivers to buyers because, ultimately, value is the primary determinant of a buyer's willingness-to-pay. This foundational understanding of value contributes to a comprehensive pricing strategy in a number of ways. First, it provides insight into how willingness-to-pay differs across segments. Second, understanding value is the only way to develop effective communications campaigns to increase customer's willingness-to-pay. That statement is related to one of the basic pricing strategies - value-based pricing strategy. In addition, there are two other pricing strategies: competition-based pricing strategy and cost-based pricing strategy. In our opinion, any pricing strategy can be effective and can generate high profits for the company. On the contrary, any good pricing strategy used incorrectly becomes ineffective. Therefore, it is very important that this strategy is tailored to the company - taking into account its specific needs, goals, vision, market segments and so on. This paper is focused on only at value-based pricing strategy. The following paper consists of eight chapters, from which obligatory are: Introduction, Conclusion, Acknowledgment and Bibliography. In the second chapter Theoretical background and understanding of value-based pricing strategy is given basic information about this pricing strategy, accompanied by a formula of this pricing strategy. The third chapter Main advantages of value-based pricing strategy represents of summarizing the main advantages of using this type of pricing. Since each method has its pros and cons, the fourth chapter Main downsides of value-based pricing strategy lists the disadvantages, respectively, the main problems that arise in connection with the application of this approach. Finally, the fifth chapter Guide to determining a value-based price, provides some steps for companies, how they can set price for their products or services according to the value.

## **2. THEORETICAL BACKGROUND AND UNDERSTANDING OF VALUE-BASED PRICING STRATEGY**

There exist three generally accepted approaches to pricing - cost-based, competition-based, and customer-value-based (Hinterhuber, 2004; Liozu, 2015). Pricing scholars, consultants, and practitioners reached consensus that a pricing orientation based on customer value and customer willingness-to pay is best and can positively influence pricing power and firm performance (Forbis and Mehta, 1981; Dolan and Simon, 1996; Anderson and Narus, 1998; Cressman, 1999; Nagle and Holden, 2002; Ingenbleek et al., 2003). Although only 17 to 20 per cent of firms claim to have adopted value-based pricing (Hinterhuber, 2008; Liozu and Hinterhuber, 2013), awareness of it is increasing, as is the desire to move from cost-based and competition-based orientations to a more customer-value-centric pricing orientation (Palus et al., 2014). There are more and more papers published about customer-value- and value-based pricing. More stories of successful transformation are being presented at pricing and business conferences. Thus, value-based pricing has emerged from the status of severely neglected pricing orientation and potential methodology to that of emerging orientation and methodology (Liozu, 2017). Ron Johnson, last senior vice president of retail operations at Apple Inc., also commented on the value and price that customers pay for this value: "Customers will not pay literally a penny more than the true value of the product" (Nagle & Müller, 2018). Value-based pricing could easily be called "Customer-Based Pricing". It is true because of following reason. When cost-based pricing - it is looking inwardly at own company; when competitive-based pricing - it is looking laterally towards competitors. But when value-based pricing strategy - the base is to look outward. Companies should look for pricing information from the people who are going to make a decision depending on their price: their customers (Campbell, 2019). The goal of value-based pricing is to figure out how much customers are willing to pay for product (good or service), so that companies can maximize their revenue by charging each customer the exact



amount they are willing to pay. At this point, they are at an equilibrium with their customer base, providing exactly the right amount of value for the price they are charging (Campbell, 2019). Following chart is an example of profits with value-based pricing. This pricing strategy allow to companies start at a higher price point if they have shown that there is a willingness to pay among their customers. Secondly, they can raise prices as they add more value to their product and find out more about their customers. This example has an aggressive pricing strategy, with two raises within a year. We recommend to companies be re-evaluating their pricing strategy every 6 months, and if there is room to raise prices they should.

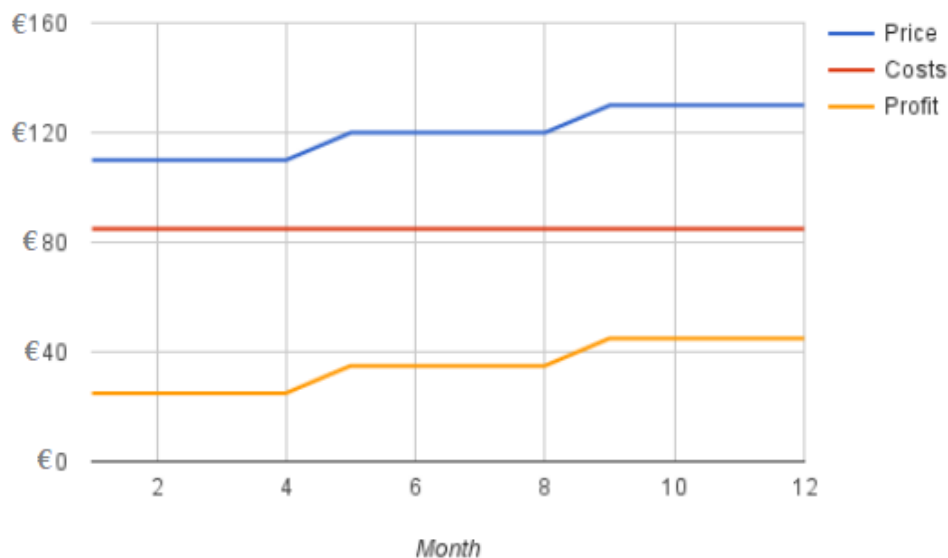


Chart 1: Profits with value-based pricing (Campbell, 2019)

Value-based pricing strategy became the most commonly discussed concept that's also the most misunderstood one. It creates more confusion among marketers, even many pricing experts, than any other pricing concept. What is more, these misconceptions often lead companies to shy away from using it, instead settling for cost-based or other pricing methods that leave money on the table (Dholakia, 2016).

### 2.1. Formula for value-based pricing

Medhora (2019) provides the following formula for value-based pricing:

$$V = BA + VoP$$

V = Value

BA = Brand Advantage

VoP = Value of Product

- Brand Advantage (1-10)  
This is the advantage service or product has over others. For example, some product is flat out better or the person in charge is a celebrity in the industry.
- Value of Product (1-10)  
This is the end value of the product to the customer. If company sells paid advertising services, its campaigns can make its customer 100 000 € per month.

Medhora (2019) also provides specific mechanism to see how high prices companies can charge for their products - by moving the knobs. Here's an illustration.

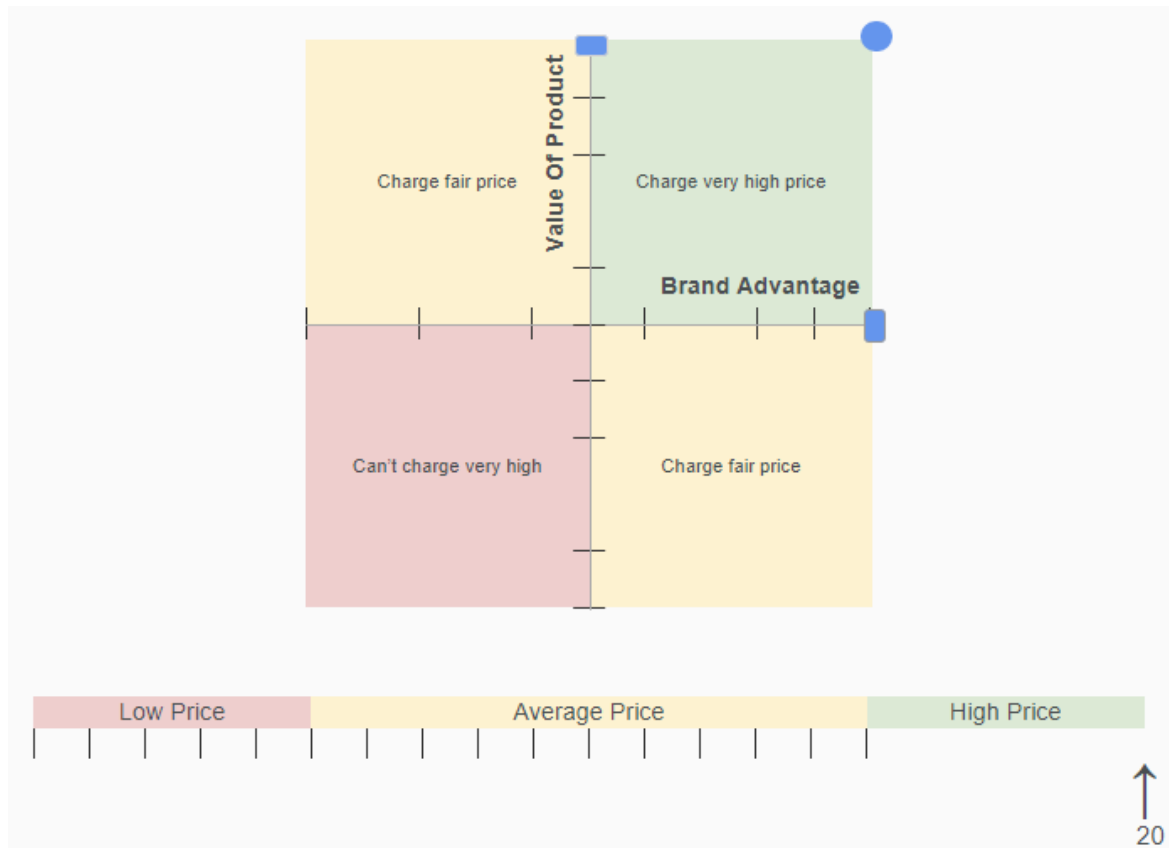


Figure 3: Mechanism of charging prices in value-based pricing strategy (Medhora, 2019)

### 3. MAIN ADVANTAGES OF VALUE-BASED PRICING STRATEGY

In the following sub-chapters, we will provide the main benefits of using value-based pricing strategy for businesses. After considering the advantages as well as the disadvantages, they can make better decisions about the pricing strategy they will use to price their products.

#### 3.1. Willingness to pay

Companies have to "go out" and ask their potential customers the value they see in companies' products. It is necessary to know what customers will actually pay for product. Competitor-based pricing does this in a roundabout way. If they are willing to pay 100 € for competitor, then they must be willing to pay 100 € for product of others as well. But this misses the fundamental point that product should be different to competitors. It should offer more value, and therefore priced differently (Simionescu, 2016).

#### 3.2. Building the best product

Pricing isn't just about the number on the page. It is related to decisions as: how to package the product; how to offer selection of products and features and to whom. This approach to pricing is helpful to understand what customers truly want, and what features should be developed over time. Once is minimal viable product developed, its features and updates should be driven by consumer demand (Valaskova et al., 2018).

#### 3.3. Reasonable price increase

Extensive research can help develop better quality products or services. It is required to research competition and analyse their pricing strategies and the value customers put on those products or services.

This can help understand what aspects in the product or service matter the most. This information can be useful to improve product or service focusing on the things that provide the most value for customer and therefore, help to increase the price (Poliak et al., 2014).

### **3.4. Getting to know the customers**

By placing a premium on the opinions of customers, companies are focusing on the people who will be making the buying decisions. They are the ones that will eventually be deciding whether pricing and packaging is correct. If not, they won't be buying (Campbell, 2019).

### **3.5. Providing better service**

Due to value-based pricing's focus on customer research and understanding, the pricing model is a valuable method for understanding and serving customers better. In order to determine the price, is needed to survey customers and improve understanding of the things they are looking for with the product or service. This enhanced understanding will not just help to determine the price; it will also help to provide better service (Campbell, 2019).

### **3.6. Improving the profit**

Understanding the demand and the value of the product or service in more detail, can eventually lead to improvements in profit margins. In many cases, a product's value to the customer is higher when the product has a positive and beneficial impact on the customer (Salaga et al., 2015).

### **3.7. Reducing costs**

Focusing on the features a customer is looking for can lead to a reduction in the overall cost of producing a product or service. Company should not take an emphasis on aspects customers don't like or don't value and it can enhance its abilities regarding the features they are looking for. This can help develop and train employees; a process, which can in time drive down the production or servicing costs (Campbell, 2019).

## **4. MAIN DOWNSIDES OF VALUE-BASED PRICING STRATEGY**

While there are some drawbacks of using a given pricing strategy, in our opinion, it is still much closer to the truth than using just costs or competitors to set the price. It is based on product and value, so it gives a much more truthful representation of where pricing should be set.

### **4.1. Difficulty of pricing**

Perhaps the major issue with value-based pricing is how difficult it can be to get it right. The model requires more time and resources than some of the other pricing models, where it is possible to calculate the figure from existing numbers. Figuring out the value of product will force to research product, customer-base and market. Unlike with cost-plus pricing, it is not possible to view production costs and just determine profit margins, but is necessary to understand the worth of product and service to customer (Kliestik et al., 2018a).

### **4.2. Time-consuming strategy**

Quantifying of buyers' personal information is very time-consuming. It is very important to dedicate to find out about customers and product to perform value-based pricing effectively. However, this may not be 100% reliable. With price sensitivity measurements and feature analysis it is possible only going to get approximations of the right pricing, packaging, and positioning for product (Bracinikova & Matusinska, 2017).

### 4.3. Inaccuracy of the method

In addition, value-based pricing is not a precise method. It is necessary to have to tweak figures, which might add some pressure on business' finances. Testing out the different prices can also be difficult when company is handling customer relations, as it can't change its pricing model dramatically without it impacting its existing partnerships. Since the model won't provide 100% accuracy, regularly assessing and adjusting the pricing is needed. The value customers place on product or service can change, forcing to look ahead to stay on top of trends on the market (Agarwal et al., 2018).

## 5. GUIDE TO DETERMINING A VALUE-BASED PRICE

Firstly, it is important to point that there is no right or wrong answer. People are different and value things differently. For businesses, the important thing is to ask customers what they would have bought, if not their product or service. Their answers tell who toughest competitors are. Then follows a choice of one of these competitors and every company does the value-based buying maths for itself (Krylov, 2019). It has to answer the following questions: How much is your product or service? How much is your competitor's? What are all of the differences? How would you value these differences? How do you think your customers value these differences? (Recommendations: Don't be biased. Be sure to list the areas where your competitor is better.) Value-based pricing is about setting a price that represents the value the customer receives from product or service - not the cost of providing it.

Here are the steps for companies how to determine a value-based price (Kliestik et al., 2018b):

1. To identify customer's 'second-best option'. Question is: If customer can't buy your product or service, then what would he or she choose?
2. To find out the price of the second-best option.
3. To list all of the ways that your offering is better - estimate how much you think these differences are worth to your customers.
4. To list all the ways that the second-best offering is better. It is very important to be honest here. Question is: How much do you think these are worth to your customers?
5. To calculate the best price:
  - a) to take the price of the second-best option,
  - b) to add the value of your advantages,
  - c) to subtract the value of the second-best option's advantages.

## 6. CONCLUSION

Each of mentioned pricing strategies has its place in business. For example, when running a gas station, there is useful cost-based pricing strategy. Company involved in the ultra-competitive retail space should use pricing in line with competitors, which will be close to the price the market can sustain. Value-based pricing is generally considered a superior practice that allows firms to gain a competitive advantage through customer value creation, capturing part of that value in the form of profit. This approach to pricing is helpful to understand what customers truly want, and what features should be developed over time. Information about this can be useful to improve product or service focusing on the things that provide the most value for customer and therefore, help to increase the price. This enhanced understanding will not just help to determine the price; it will also help to provide better service and eventually lead to improvements in profit margins. Yet, despite these benefits, pricing practices that emphasize value-based pricing are not widely used in business markets. There is, of course, some disadvantages. Perhaps the major issue with value-based pricing is how difficult it can be to get it right. Unlike with cost-plus pricing, it is not possible to view production costs and just determine profit margins, but is necessary to understand the worth of product and service to customer. However, quantifying of buyers' personal information is very time-consuming.

In addition, value-based pricing is not a precise method. While there are some drawbacks of using a given pricing strategy, in our opinion, it is still much closer to the truth than using just costs or competitors to set the price. It is based on product and value, so it gives a much more truthful representation of where pricing should be set. In next research we will focus on ways how to determine customer personas, which is a key for value-based pricing strategy.

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## LITERATURE:

1. Agarwal, N., Kwan, P., Paul, D. (2018). Merger and Acquisition Pricing Using Agent Based Modelling. *Economics, Management, and Financial Markets*, vol. 13, no. 1, pp. 84–99.
2. Anderson, J. C., Narus, J. A. (1998). Business marketing: Understand what customers value. *Harvard Business Review*, vol. 76, no. 6, pp. 53–65.
3. Bracinikova, V., Matusinska, K. (2017). Marketing mix of financial services from the customers perspective. *Forum Scientiae Oeconomia*, vol. 5, no. 5, pp. 35–48.
4. Campbell, P. (2019). *What is value based pricing? Why you need value based pricing*. Retrieved 14.10.2019 from <https://www.priceintelligently.com/blog/value-based-pricing>.
5. Cressman, G. E., Jr. (1999). Commentary on industrial pricing: Theory and managerial practice. *Marketing Science*, vol. 18, no. 3, pp. 455–457.
6. Dholakia, U. M. (2016). *A Quick Guide to Value-Based Pricing*. Retrieved 14.10.2019 from <https://hbr.org/2016/08/a-quick-guide-to-value-based-pricing>.
7. Dolan, R., Simon, H. (1996). *Power pricing: How managing price transforms the bottom line*. New York: Free Press.
8. Forbis, J., Mehta, N. (1981). Value-based strategies for industrial products. *Business Horizons*, vol. 24, no. 3, pp. 32–42.
9. Hinterhuber, A. (2004). Towards value-based pricing - An integrative framework for decision making. *Industrial Marketing Management*, vol. 33, no. 8, pp. 765–778.
10. Hinterhuber, A. (2008). Value delivery and value-based pricing in industrial markets. *Advances in Business Marketing and Purchasing*, vol. 14, pp. 381–448.
11. Ingenbleek, P., Debruyne, M., Frambach, R., Verhallen, T. (2003). Successful new product pricing practices: A contingency approach. *Marketing Letters*, vol. 14, no. 4, pp. 289–305.
12. Klietnik, T., Kovacova, M., Podhorska, I., Klietnikova, J. (2018). Searching for Key Sources of Goodwill Creation as New Global Managerial Challenge. *Polish Journal of Management Studies*, vol. 17, no. 1, pp. 144–154.
13. Klietnik, T., Misankova, M., Valaskova, K., Svabova, L. (2018). Bankruptcy prevention: new effort to reflect on legal and social changes. *Science and Engineering Ethics*, vol. 24, no. 2, pp. 791–803.
14. Krylov, S. (2019). Strategic customer analysis based on balanced scorecard. *Ekonomicko-manazerske spektrum*, vol. 13, no. 1, pp. 12–25.
15. Liozu, S. M. (2015). *The pricing journey: The organizational transformation toward pricing excellence*. Stanford, CA: Stanford University Press.
16. Liozu, S. M. (2017). Value-based pricing special issue: Editorial. *Journal of Revenue and Pricing Management*, vol. 16, pp. 1–3.
17. Liozu, S. M., Hinterhuber, A. (2013). Pricing orientation, pricing capabilities, and firm performance. *Management Decision*, vol. 51, no. 3, pp. 594–614.
18. Medhora, N. (2019). *Value Based Pricing (Examples, Benefits, and Calculator)*. Retrieved 14.10.2019 from <https://kopywritingcourse.com/value-based-pricing/>.

19. Nagle, T. T., Müller, G. (2018). *The strategy and tactics of pricing* (6<sup>th</sup> edition). New York: Routledge.
20. Nagle, T. T., Holden, R. K. (2002). *The strategy and tactics of pricing: A guide to profitable decision making*. Englewood Cliffs, NJ: Prentice-Hall.
21. Palus, H., Matova, H., Krizanová, A., Parobek, J. (2014). A survey of awareness of forest certification schemes labels on wood and paper products. *Acta Facultatis Xylologiae*, vol. 56, no. 1, pp. 129-138.
22. Poliakov, M., Krizanová, A., Semanová, S. (2014). The influence of contract form choice of the transport services ensuring on performance contracting entity requirement. *Transport problems*, vol. 9, no. 4, pp. 153-161.
23. Salaga, J., Bartosová, V., Kicová, E. (2015). Economic Value Added as a measurement tool of financial performance. *Procedia Economics and Finance*, vol. 26, pp. 484-489.
24. Simionescu, M. (2016). Competitiveness and Economic Growth in Romanian Regions. *Journal of Competitiveness*, vol. 8, no. 4, pp. 46-60.
25. Valasková, K., Klietková, J., Krizanová, A. (2018). Consumer Perception of Private Label Products: An Empirical Research. *Journal of Competitiveness*, vol. 10, no. 3, pp. 149-163.

## THE RISKS OF INVESTMENT IN ETF: THE CASE OF LITHUANIAN PENSION FUNDS

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### ABSTRACT

*This paper contributes to the growing literature on the potential risks arising from exchange-traded funds (ETFs). The ETFs are considered as one of the most popular financial innovations in recent decades. The growing size, complexity and scope make this product important for regulators, researchers, scientists, etc. Despite ETFs still being a relatively small part of the whole financial system, they are growing rapidly. This growth can also be seen in the investments of Lithuanian pension funds. Since 2019, when the pension reform was implemented, the part of ETFs in pension funds grew significantly. Therefore, this paper presents an analysis of ETFs as the important investment of Lithuanian pension funds, it also discusses the risks of ETFs. So the aim of this paper is to distinguish possible risks of ETFs which is important for Lithuanian pension funds. The data from the Bank of Lithuania and Bloomberg, the network approach and statistical data analysis are used. The results are important for regulators and supervisors in order to make the right decisions and impact on their operating field. This study provides some useful insights for the future research as well.*

**Keywords:** *Exchange-traded funds (ETFs), network approach, pension funds, risks*

### 1. INTRODUCTION

The Exchange-traded funds (ETFs) are considered as one of the most popular financial innovations in recent decades (Su, 2018). Despite ETFs still being a relatively small part of the whole financial system, they are rapidly growing (Ramaswamy, 2011). The growing size, complexity and scope make this product important for regulators, researchers, scientists, etc. Notwithstanding that the first ETF was launched in 1993 (Lettau, Madhavan, 2018), the academic literature is still in the development age. The authors analyse various aspects of ETFs: they try to understand this product and explain its structure (Lettau, Madhavan, 2018, Deutsche Bundesbank, 2018), to analyse the performance of ETFs (Milonas, Rompotis, 2006, Yiannaki, 2015), to indicate the risks of ETFs (Ramaswamy, 2011, Grill et al., 2018, Pagano et al., 2019, Hurlin et al., 2019), etc. Nonetheless, eventually there are still a lot of areas for the future research that are yet to be empirically analysed. The S. Ramaswamy (2011) state that the institutional investors hold about 80% of ETF assets in Europe, while this share in the USA only composes 50% (the other share is held by retail investors). In Lithuania, the main investor in ETFs is pension funds (Pagano et al., 2019). Therefore, the aim of this paper is to distinguish possible risks of ETFs that are important for Lithuanian pension funds. In order to achieve the aim, some methods are used. The network approach and statistical data analysis are used in order to study the characteristics of investments in ETFs. In addition, it is done in order to measure the size and connections among different pension funds' investments in ETFs. Moreover, Herfindahl-Hirschman Index is calculated in order to analyse the concentration risks in pension funds.

The paper is organized as follows: Section 2 presents a literature review about ETFs risks. Whereas the main investor in ETFs is pension funds in Lithuania, the short context of Lithuanian pension system is presented in Section 3. Section 4 introduces the data and the methods. The results are presented in Section 5. In the Section 6, the conclusions and suggestions are given.

## 2. THE RISKS OF ETFs

In the recent years, the literature analysing the risks of ETFs has been growing rapidly (Baumann et al., 2018). As it is stated in the report of KPMG International (2018), some authors identify a lot of possible risks of ETFs, while others emphasize, that there are no significant and special risks about them. However, all the authors agree, that the real impact of ETFs on the whole financial system is still unknown, because this product has not been tested under the real market stress yet. In this Section, the literature of ETFs' risks is analysed. In 2011, Bank for International Settlements presents a paper (Ramaswamy, 2011) where the ETFs structure and market developments as well as systematic risks of ETFs are explained and analysed. (see Table 1). The author emphasizes the complexity of this product, diversity of replication schemes, and the extension of intermediation chain and the lack of transparency. These issues are very important because they cover risks that could have an impact on the whole financial system. In 2012, EDHEC-Risk Institute has introduced an academic research about the risks of European ETFs (Amenc et al., 2012). The authors see ETFs as a less risky product. For example, the authors note, that ETFs should not be blamed for the liquidity risks, if they are tracking index, which is combined of less liquid assets. The possibility of large redemptions is also common to open-end funds and not exceptional for ETFs. Talking about counterparty risk, authors state, that European regulator concentrates on how an index is tracking, but do not pay a lot of attention to the efficiency of that tracking or which exact index is being tracked, also the disclosure and standardisation of that information. Authors emphasize, that the counterparty risk is not only inherent for synthetic ETFs, but also for physical replication ETFs (which are engaged in securities lending operations), as well as UCITS mutual funds, which are engaged in OTC derivatives. Talking about systemic risks, the authors note, that the size of the institution is not sufficient enough and the connectedness with other institution is also very important (because of spill over risks) in order to analyse the possible systemic risks. All in all, authors state, that ETFs do not hurt the underlying market and they are not so risky just because of their uniqueness. Congressional Research Service presents analysis of ETFs structure and possible risks (Su, 2018). Author focuses attention on the problem that no one knows how ETFs react under market stress. The author says, that despite this product acting for more than 25 years, there is still no clear regulation of it. This product is also raising policy issues because of its impact on financial stability, on the financial educations of investors, also asset management transformation from active to passive investment style. Authors analyse some aspects of the risk for the whole financial system, and they also discuss the counter arguments for the financial stability concerns. What is more, in 2018, Spanish Securities Markets Commission presents a theoretical article about systemic risks of ETFs (Crisóstomo, Medina, 2018) (see Table 1). It is worth noting that authors emphasize the other side: ETFs have some risk mitigating provisions, like transparency of trading prices, periodic reports about portfolio compositions, etc. So, the regulators must think about those characteristics, when the macroprudential policy for that product is designed. In 2019, the European Systemic Risk Board presents a report "Can ETFs contribute to systemic risk?" (Pagano et al., 2019). The authors discuss European ETFs and emphasize, that there are more synthetic and complex ETFs in Europe than plain vanilla products (comparing with the USA). The authors also talk about concentration problems: they state, that there are three main ETFs' providers, that accounted about 60 percent of ETFs



worldwide. Finally, the authors present four major channels, through which systemic risks may arise (see Table 1).

*Table 1: ETFs' risks interpretations  
(compiled by authors, according to the following sources)*

2011	Bank for International Settlements (Ramaswamy, 2011)	
The channels of risks from ETFs to financial stability:		
<ul style="list-style-type: none"><li>• “co-mingling tracking error risk with the trading book risk by the swap counterparty could compromise risk management”;</li><li>• “collateral risk triggering a run on ETFs in periods of heightened counterparty risk”;</li><li>• “materialisation of funding liquidity risk when there are sudden and large investor withdrawals”;</li><li>• “increased product complexity and options on ETFs undermining risk monitoring capacity.”</li></ul>		
2012	EDHEC-Risk Institute (Amenc et al., 2012)	
The possible <sup>1</sup> risks of ETFs:		
<ul style="list-style-type: none"><li>• Counterparty risk;</li><li>• Liquidity risk;</li><li>• Tracking error risk;</li><li>• Collateral risk;</li><li>• Legal risk (in case of counterparty default);</li><li>• Potential impact of ETFs on the underlying markets and systemic risks.</li></ul>		
2018	Congressional Research Service (Su, 2018)	
“Liquidity mismatch” could induce systemic risk through the following channels:		Arguments, that ETFs counters financial stability risk concerns:
<ul style="list-style-type: none"><li>• “Contagion risk”;</li><li>• “Fire sale and negative feedback loop”;</li><li>• “Arbitrage mechanism malfunction under illiquid conditions”.</li></ul>		<ul style="list-style-type: none"><li>• “ETFs are largely not subject to cash redemption”;</li><li>• “ETFs provide “emergency brakes” in a market downturn”;</li><li>• “ETFs are less susceptible to liquidity events”.</li></ul>
Other concerns on ETFs risk:		
<ul style="list-style-type: none"><li>• Complex structure and non-traditional ETFs (credit risk and operational risks);</li><li>• ETFs Behaviour under market stress;</li><li>• Concentration, entry barriers for new competition.</li></ul>		
2018	Spanish Securities Markets Commission (Crisóstomo, Medina, 2018)	
<ul style="list-style-type: none"><li>• “Impact of ETFs on the risk and the return of underlying assets”;</li><li>• “Effects on the quality and efficiency of the information on underlying assets”;</li><li>• “Possible fragility of the liquidity provided by ETFs”;</li></ul>		<ul style="list-style-type: none"><li>• “Counterparty risk and concentration of service providers”;</li><li>• “Conflicts of interest, anti-competitive behaviour and reputational risk”;</li><li>• “Other risks related to collateral use”.</li></ul>
2019	European Systemic Risk Board (Pagano et al., 2019)	
The major channels, through which systemic risks may arise:		
<ul style="list-style-type: none"><li>• “In normal times, the high liquidity of ETFs encourages investors to place large short term directional bets on entire asset classes, which affect the prices of the underlying securities, increasing their volatility and their co-movement”;</li><li>• “During times of market stress, ETF prices may decouple from those of their constituent securities and, insofar as financial institutions have large exposures to ETFs or rely heavily on ETF shares in their liquidity management operations, this may destabilise them”;</li><li>• “ETFs allow investors to take correlated exposures; insofar as these exposures are leveraged, they may generate contagion at times of market stress”;</li><li>• “Given the high levels of concentration in the ETF market, a large event leading to the materialisation of operational risks in one of the providers may generate massive fire sales of ETFs”.</li></ul>		

Finally, it is worth noting that the risks of ETFs are really important topic and more empirical analysis are needed in order to understand this product and its risks and in order to make clear conclusions about their behaviour.

### 3. LITHUANIAN PENSION FUNDS

In the report of European Systemic Risk Board (Pagano et al., 2019) the statistics of the holdings of ETF shares in the euro area are presented. It is shown, that in Lithuania, the main holders of ETFs are pension funds. It is worth mentioning that the report presents the statistic which is observed for the end-March, 2018, but since then, important changes have been done in the area

<sup>1</sup> The authors discussed those risks, but do not believe, that ETFs could hurt the whole system or make important disruptions.

of Lithuanian pension funds and their investments into ETFs have rapidly grown. In 2019 the pension system<sup>2</sup> reform was implemented in Lithuania. A lot of changes have been accomplished, for instance, auto enrollment of new participants (with a possibility to pop out), the management fee reduction, changes in the structure of contributions, and also the plan to establish a new annuity provider and changes in the part of benefits<sup>3</sup>. What is more, a very important innovation is an implementation of the life-cycle pension funds. This change makes an impact on the pension funds' portfolio structure: a lot more asset is invested in shares and less in bonds. The biggest part of asset is invested in shares through the Collective Investment Subjects (CIS), and more than a half of those CIS are ETFs (ETFs' part in the asset of pension funds have grown from 30 percent in end-March, 2018 to 52 percent in end-July, 2019). In addition, it is worth looking at Lithuanian legal regulations and diversification requirements for the pension funds. The Law on the Supplementary Voluntary Accumulation of Pensions (Lietuvos Respublikos..., 1999) set a lot of requirements for diversification of investments, but there is no such requirement as limits to invest in one sponsors' ETFs. Therefore, the question is: are those increased investments into ETFs are risky, and if so, how could the regulators protect the pensions fund participants from those risks? Finally, it is worth mentioning, that DWS Group sponsored survey of pension funds' investments was conducted by consultants CREATE-Research (DWS Group, 2018). They found that passive investments are growing in pension funds in the form of index funds, ETFs, etc. As it has been mentioned, this tendency is applicable to the Lithuanian pension funds too. So, in the next Section, the data and methods of the research are going to be presented. The investments of Lithuanian pension funds and the risk of investments into ETFs are going to be analysed too.

#### 4. DATA AND METHODS

This paper presents an analysis of ETFs as an important investment of Lithuanian pension funds. In order to make this analysis, the data from the Bank of Lithuania and Bloomberg are used. The data covers the period from 31 December 2016 to 31 July 2019. The monthly data of pension funds' portfolio and daily data of ETFs' market prices are used. The research consists of three parts (see Figure 1). Firstly, the network analysis is done using network visualization methods and R program (Ognyanova, 2015). This analysis allows us to see the connections between pension funds and ETFs, also between pension funds and sponsors of the ETFs. Secondly, the concentration risk in each pension fund is analysed calculating the Herfindahl-Hirschman Index (HHI<sup>4</sup>) (Ávila et al., 2012). The correlation matrix method (Pearson correlation) is used in order to analyse the market prices of different ETFs (Benesty et al., 2009). Thirdly, the short review of statistical data on the counterparty risk is done, looking at the replications schemes of ETFs.

*Figure following on the next page*

<sup>2</sup> Since 2004, the Lithuanian pension system has been consisting of three pillars: the first pillar is based on national Pay As You Go (PAYG) system, the II and III pillars are based on voluntary pension funds.

<sup>3</sup> The last two changes will become valid since 2020.

<sup>4</sup> HHI of less than 1,500 is considered as a competitive marketplace. HHI of 1,500 to 2,500 – moderately concentrated marketplace. HHI of 2,500 or greater – highly concentrated marketplace (Horizontal..., 2010).

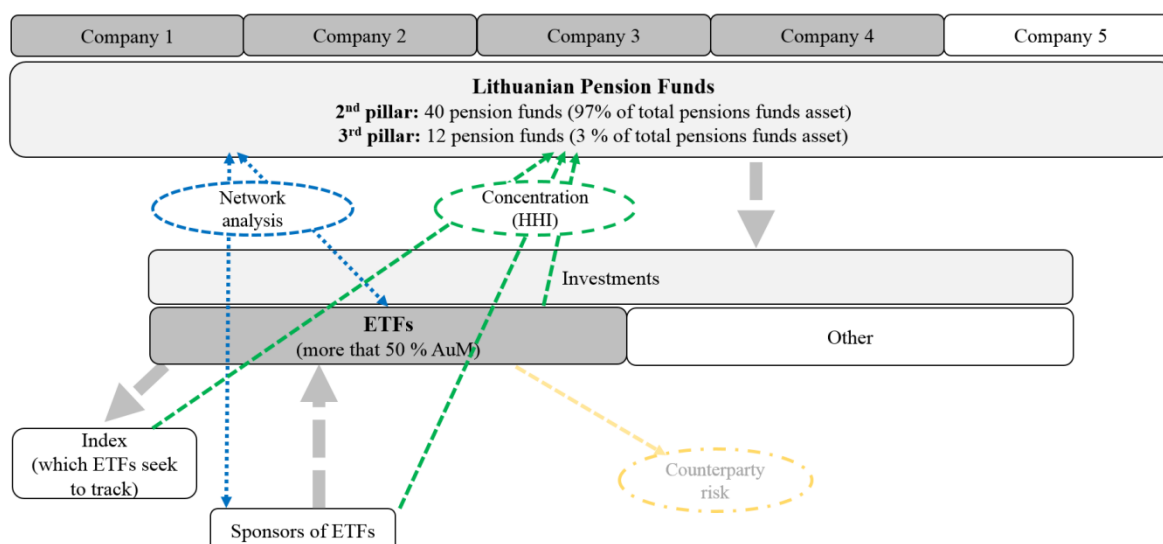


Figure 1: The structure of the analysis

It is worth mentioning that Figure 1 shows, that in Lithuania, there are five pension funds' management companies, but only four of them invest in ETFs. The investments of three of those companies contain 97 percent of the whole ETFs investments in 2019 July. What is more, the analysis covers pension funds of the 2<sup>nd</sup> and 3<sup>rd</sup> pillars, but the 3<sup>rd</sup> pillar holds insignificant part of the market (only 3 percent). Finally, it is worth noting that the separate pension funds invest in ETFs different part of their asset: some on them do not invest at all, while others invest almost 88 percent of their total asset. The next Section shows the results of the analysis.

## 5. RESULTS

The Figure 2 shows the structure of Lithuanian pension funds' investments during the period from 31 December 2016 to 31 July 2019. It can be seen that since the life cycle pension funds have been implemented, the investments in Collective Investment Subjects<sup>5</sup> have been rapidly growing. Most importantly, the major part of those subjects is ETFs. Figure 2 shows, that the share of ETFs in the pensions funds' asset during analysing period has grown almost 2 times: from 26,8 percent in 31 December 2016 to 52 percent in 31 July 2019. The turning point of this growth has been the beginning of 2019.

*Figure following on the next page*

<sup>5</sup> The ETFs are also attributed to collective investment subjects.

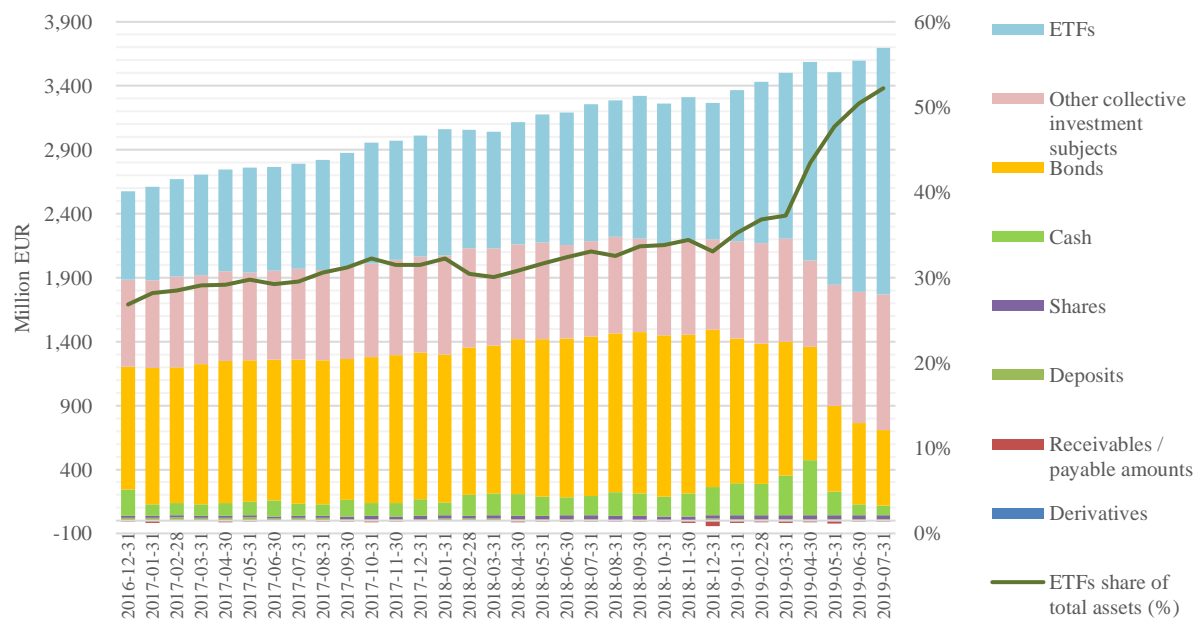


Figure 2: The monthly structure of pension funds' portfolio (based on data of the Bank of Lithuania and authors calculations)

As it is mentioned in the part of Data and Methods, the first part of the analysis is focused on the connections among ETFs, their sponsors and pension funds. The twofold networks are constructed: one of them connects pension funds and different ETFs (see Figure 3A and Figure 4A), while others connect sponsors of ETF and pension funds (see Figure 3B and Figure 4B).

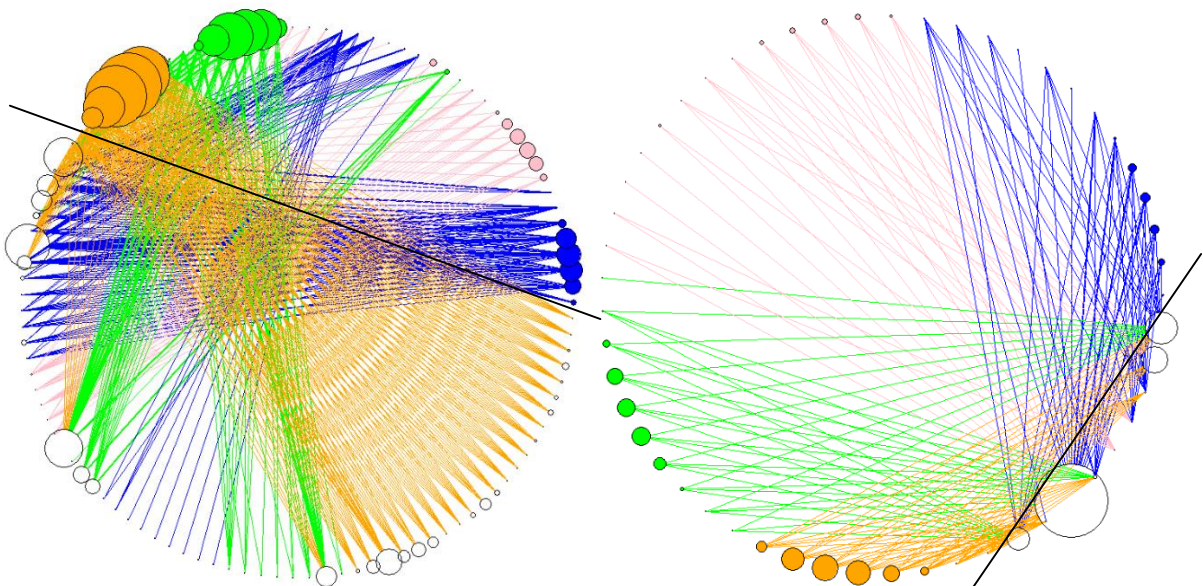


Figure 3A

Figure 3B

Figure 3: The network between pension funds and ETFs (3A), also between pension funds and sponsors of ETFs (3B), 31 July 2019 (the colored bubbles reflect pension funds of the four companies, white bubbles show ETFs, lines reflect investments)

It is important to note, that the size of investments in some ETFs is much bigger than the size of some pension funds (some white bubbles are bigger than the colored ones) (see Figure 3A). It is seen, that there are some main ETFs, that are the most popular.

For example, the biggest white bubble is iShares Core S&P 500 UCITS ETF, the investments in them contain more than 209 million EUR (i.e. 10,87 percent of all investments into ETFs). It is also interesting to look at Figure 3B. There the ETFs are grouped according to their sponsors (white bubbles). The most popular are the following ones: iShares (44,21 percent of whole investments in ETFs), Xtrackers (19,69 percent of whole investments in ETFs), Vanguard (16,29 percent of whole investments in ETFs), Amundi (13,88 percent of whole investments in ETFs). So, the concentration risk that the regulators are talking about, is important for Lithuanian pension funds too. The second network is presented in Figure 4. The Figure 4A shows that each pension funds' company has chosen different ETFs and they are not as common ETFs as an investment. It is good for the system and for common diversification, but looking at the Figure 4B, it is worth noting that all the pension funds' companies invest a lot of assets in one sponsor – iShares (the biggest white bubble). The pension funds of pink company do not invest in ETFs of sponsors Xtrackers and Amundi, while blue and green companies do not invest in Vanguard funds. So the diversification according to sponsors also exists.

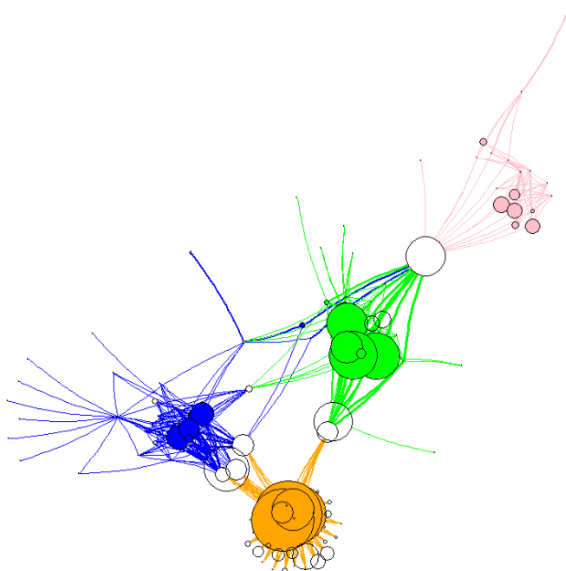


Figure 4A

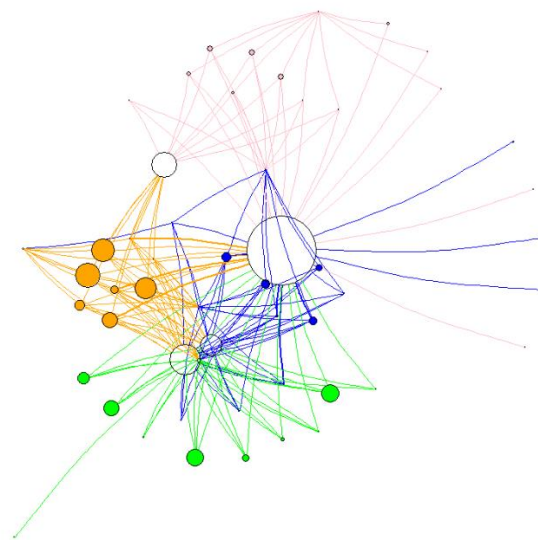


Figure 4B

*Figure 4: The network between pension funds and ETFs, also between pension funds (4A) and sponsors of ETFs (4B), 31 July 2019 (the colored bubbles reflect pension funds of the four companies, white bubbles show ETFs, lines reflect investments)*

All these networks show the distribution among ETFs, their sponsors and pension funds, but do not reflect the view of each pension fund. Thus, the second part of the analysis is dedicated to the concentration risk for each pension fund. The HHI is calculated in three ways for each pension fund: concentration for different ETFs (i.e. different ISINs, International Securities Identifying Number), for sponsor of those ETFs and finally, for index, which is tracked by those ETFs. The Figure 5 shows the results.

*Figure following on the next page*

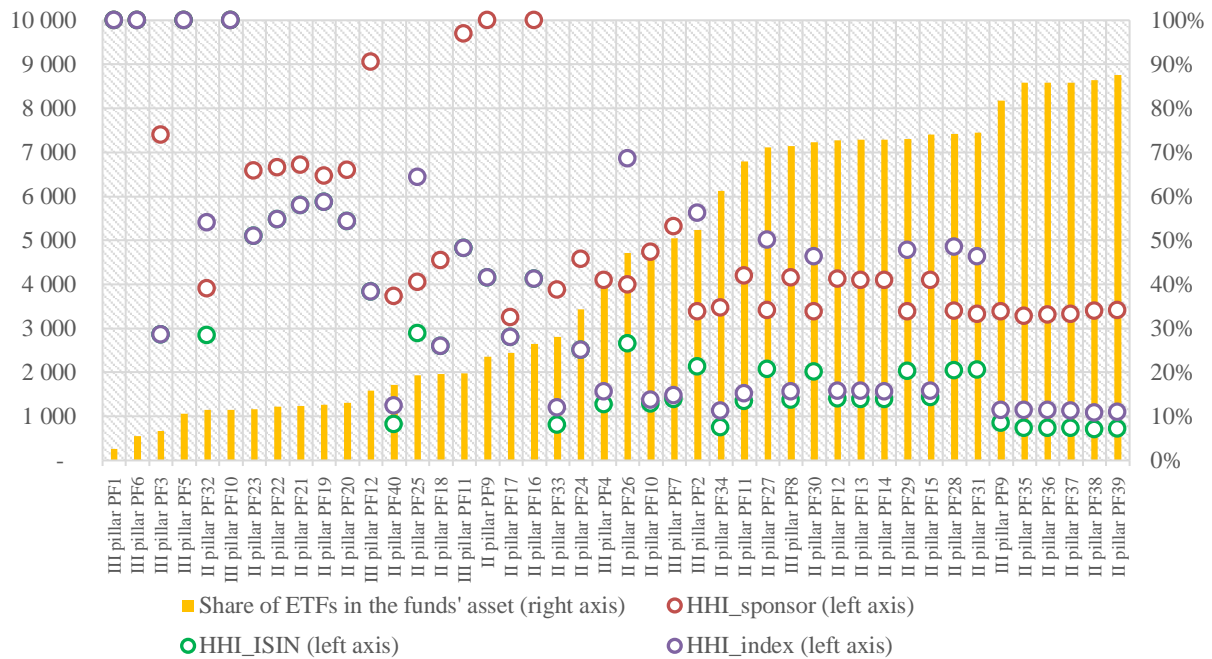


Figure 5: The concentration risk of pension funds, 31 July 2019

Figure 5 reflects common trend: the more different ETFs in their portfolio pension fund has, the smaller concentration is (bubbles of HHI\_ISIN). Despite the fact that the similar trend is noticeable in the sponsors' side, the HHI\_sponsor's interval is higher: varying from 3 285 to 4 193 (of those pension funds, which investments in ETFs contain more than 50 percent of total asset). The most interesting part is the HHI of index, which is tracked (bubbles of HHI\_index). For example, the fund "II pillar PF26" has quite a strong concentration on ETFs (HHI\_ISIN is equal 2 649), bigger on sponsor (HHI\_sponsor is equal 3 995), but the concentration of index is really high (HHI\_ISIN equal 6 856). In detail, the investments in ETFs form more than 47 percent of the pension fund's asset. This pension fund has 11 different ETFs. 4 of these ETFs compose 82 percent of all investments in ETFs, and all of them tracking the same MSCI world index. That means that 39 percent of all those pension funds' assets are moving in the same way (the correlations between those four ETFs' market prices are almost 1). Anyway, this MSCI world index is tracking really broad palette of shares, so the biggest risk of such investments is the market risk. It is worth adding, that some pension funds have huge investments in ETFs, which belong to the same sponsor. For example, "III pillar PF7" invests 34 percent of all the pension fund to one sponsor – iShares, similarly, "II pillar PF11" investments in iShares ETFs contain 39 percent of the total asset of that pension fund. It is indicated, that the risk of concentration is important for Lithuanian pension funds. This is not treated as a big risk, but must be in the area of regulators view. Trying to see the correlations among market prices of different ETFs in each portfolio, the correlation matrixes are constructed. It is interesting that some pension funds (which are investing in ETFs more than 70 percent of their asset), for example, "II pillar PF12", invest in 7 different ETFs, but the market price of 6 of them correlates almost the same, because they are tracking the same index. That indicates, that concentration risk must be discussed broader (despite the fact that the indexes are already diversified). Finally, the third part of the analysis is focused on the replication structure of ETFs. The pension funds invest in ETFs with three replication types: full, optimized and derivative. The major part of them is a full replication. During the analysing period, the part of derivatives ETFs contains smaller part of the asset (10 – 27 percent), while full replication ETFs variate from 52 percent of total asset to 70 percent in 31 July, 2019.



In literature, the authors emphasize, that the ETFs based on derivatives have the same counterparty risk as the full/optimize, when they are engaged in securities lending (Hurlin et al., 2019). The data analysis of Lithuania pension funds show, that in 31 July 2019, the 70 percent of the whole pension funds asset is engaged in the securities lending operations and 10 percent of ETFs is based on derivatives. For example, the biggest iShares Core S&P 500 UCITS ETF, which has been mentioned earlier, is engaged in securities lending operations. So, finally, the 80 percent of whole asset of pensions fund probably have engaged in counterparty risk. This is the area for the future research.

## 6. CONSLUSION

Literature analysis shows, that the risks of ETFs are relevant for scientists, regulators, researchers, etc. The growing quantity of researches confirm the relevance and importance of that topic. Nevertheless, there is no clear consensus about the impact of the ETFs and their risks, so more empirical analysis is needed. The Lithuanian pension system's reform makes an impact on the structure of pension funds' investments: more investments were redirected to stocks in the form of ETFs. The analysis of pension funds' investments shows, that the risks of ETFs are an important issue, because the investments in ETFs grow rapidly, so, the regulator must pay attention to the investments in this product. The network analysis shows that each pension fund company has chosen to invest in different ETFs, but there are some common ETFs as an investment. The size of those investments in such ETFs is big enough. What is more, the investments in the same sponsor are analysed. The results show, that there are some main sponsors, in which products the pensions funds asset are invested. Moreover, the concentration risk analysis shows, that the pension funds' investments in ETFs have high concentration according to the sponsors of ETFs, the lower concentration according to different ETFs. But the highest concentration is seen in the indexes, which are tracked by ETFs. So the main risk, which is indicated in this research is concentration of the sponsors and also the indexes, which are tracked by ETFs. Finally, it is worth noting that the 80 percent of the whole asset of pensions fund might be engaged in counterparty risk. The authors suggest broadening this part of analysis in the future researches.

## LITERATURE:

1. Amenc, N., Ducoulombier, F., Goltz, F., Tang, L. (2012). *What are the Risks of European ETFs?* Location: EDHEC-Risk Institute.
2. Ávila, F., Flores, E., López-Gallo, F., Márquez, J. (2012). *Concentration indicators: assessing the gap between aggregate and detailed data*. Proceedings of the Sixth IFC Conference on "Statistical issues and activities in a changing environment", Basel, 28-29 August 2012.
3. Baumann, M. H., Baumann, M., Herz, B. (2018). *Exchange-traded Funds, Investment Strategies, and Financial Stability*. Beiträge zur Jahrestagung des Vereins für Socialpolitik 2018: Digitale Wirtschaft - Session: Financial Markets I, No. A03-V2, ZBW - Leibniz-Informationszentrum Wirtschaft, Kiel, Hamburg.
4. Benesty, J., Chen, J., Huang, Y., Cohen, I. (2009). Pearson Correlation Coefficient. In: Noise Reduction in Speech Processing. *Springer Topics in Signal Processing*, vol 2. Springer, Berlin, Heidelberg.
5. Crisóstomo, R., Medina, J. (2018). *ETFs and financial stability: a compendium of possible risk sources*. (Research report no. Quarter IV, 2018). Location: CNMV.

6. Deutsche Bundesbank. (2018). *The growing importance of exchange-traded funds in the financial markets*. Monthly Report. (Research report no. October 2018). Retrieved 10.04.2019 from <https://www.bundesbank.de/resource/blob/766600/2fd3ae4f0593fb2ce465c092ce40888b/mL/2018-10-exchange-traded-funds-data.pdf>.
7. DWS Group GmbH & Co. KGaA. (2018). *DWS sponsored survey of pension funds finds increased usage of ETFs and other passive solutions*. Retrieved 20.06.2019 from <https://etf.dws.com/en-gb/about-us/press-releases/dws-sponsored-survey-of-pension-funds-finds-increased-usage-of-etfs-and-other-passive-solutions/>.
8. Grill, M., Lambert, C., Marquardt, P., Watfe, G., Weistroffer, Ch. (2018). *Counterparty and liquidity risks in exchange-traded funds*. Published as part of the Financial Stability Review November 2018. Location: European Central Bank.
9. *Horizontal Merger Guidelines*. (2010). U.S. Department of Justice and the Federal Trade Commission. Issued: August 19, 2010. Retrieved 15.02.2019 from <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010#5c>.
10. Hurlin, Ch., Iseli, G., Pérignon, Ch., Yeung, S. (2019). The counterparty risk exposure of ETF investors. *Journal of Banking and Finance*, 2019 (102), 215-230.
11. KPMG International. (2018). *Parting of the ways? Evolving Asset Management Regulation report. Chapter 2. Systemic risk - the big divide*. Retrieved 16.03.2019 from <https://assets.kpmg/content/dam/kpmg/nl/pdf/2018/advisory/evolving-asset-management-regulation-report.pdf>.
12. Lettau, M., Madhavan, A. (2018). Exchange-Traded Funds 101 for Economists. *Journal of Economic Perspectives*, 32 (1), 135-54.
13. Lietuvos Respublikos papildomo savanoriško pensijų kaupimo įstatymas (1999). 1999 m. birželio 3 d. Nr. VIII-1212, Vilnius. Consolidated Edition since 2019 February 1.
14. Milonas, N. T., Rompotis, G. G. (2006). *Investigating European ETFs: The Case of the Swiss Exchange Traded Funds*. Annual Conference of HFAA in Thessaloniki, Greece.
15. Ognyanova, K. (2015). *Network visualization with R*. POLNET, 2015, Workshop, Portland OR.
16. Pagano, M., Serrano, A. S., Zechner, J. (2019). Can ETFs contribute to systemic risk? (Research report no. 9). Location: European Systemic Risk Board.
17. Ramaswamy, S. (2011). *Market structures and systemic risks of exchange-traded funds*. (Research report no. 343). Location: Bank for International Settlements.
18. Su, E. (2018). *Exchange-Traded Funds (ETFs): Issues for Congress*. (Research report no. R45318). Location: Congressional Research Service.
19. Yiannaki, S. M. (2015). ETFs performance Europe - a good start or not? *Procedia Economics and Finance*, 2015 (30), 955-966.



## MANAGING FINANCIAL STABILITY IN A TURBULENT ENVIRONMENT

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### ABSTRACT

*The most important condition for the success of commercial organizations is the effective management of financial resources, focused on strengthening financial stability in the current and long vista. Morphological analysis of interpretations of financial stability revealed the emphasis of Russian and foreign researchers on the functioning of organizations in a turbulent environment. The imbalance of the national economy is the most important exogenous factor affecting the financial stability of organizations, respectively, the opposition to the unstable external environment is one of the main tasks of financial stability management. Considering financial stability management as a system, the article presents the main functions of the management subsystem. It is shown that the management of financial stability of the organization in a turbulent environment should ensure its stable development at a certain level of risk. It is proposed to include the tools of strategic management and, above all, the system of balanced indicators in the process of financial stability management in the conditions of turbulence of the external environment, which allows to more accurately determine the level of financial stability of the organization and to specify management decisions.*

**Keywords:** *turbulent environment, management, financial stability*

### 1. INTRODUCTION

In a turbulent environment, the management of commercial organizations is aimed at ensuring their competitiveness and stable functioning. The most important determinant of the success of organizations is the effective management of financial resources, focused on strengthening financial sustainability in the current and long term. As practice has shown, insufficient financial stability leads to lack of resources of operating, financial and investment activities, to insolvency and insolvency of organizations. Lack of financial resources, in turn, causes a decrease in the effectiveness of the organization as a whole, as well as its individual indicators: profitability, business activity, labor productivity, return fund, etc. in this regard, financial stability is the most important factor in the successful functioning of the organization in a turbulent environment, ensuring its stable development at a certain level of risk, which actualizes the importance of analytical tools for managing financial stability.

### 2. DEFINITIONS OF FINANCIAL STABILITY

Considering the approaches to the interpretation of the definition of "financial stability", presented in the domestic literature, it can be noted that in the historical aspect, this definition has expanded and become more capacious. Initially, Russian researchers defined financial stability as the ratio of own and borrowed capital and its structure in the sources of formation of the organization's property. At the beginning of the XX Millennium N. A. Blatov [1] proposed the distribution coefficients, which were based on the indicators of the balance structure. In the early 2000s, L. V. Dontsova and N. A. Nikiforov [2] noted that financial stability is characterized by a high share of equity. In modern literature, financial stability is considered not only as a direction of financial analysis, but also as a separate area of study,

since in a turbulent environment, managing financial stability, the organization is able to ensure a steady increase in business value. At the same time, the financial stability management system is considered as the most important component of the complex mechanism for maintaining the financial well-being of the organization. L. T. Gilyarovskaya [3] defines financial stability as the ability to carry out basic and other activities in the conditions of entrepreneurial risk and changing business environment in order to maximize the welfare of owners, strengthen the competitive advantages of the organization taking into account the interests of society and the state. I. V. Baranova, I. N. Demchuk and N. V. Fadeikina [4] note that financial stability is the adaptive ability of an organization to respond quickly to changes in the internal and external environment and to solve its strategic tasks in order to increase capital for the modernization of production while ensuring liquidity and solvency on the basis of a balanced risk management policy. G. V. Savitskaya [5] interprets financial stability as the ability of a business entity to function and develop, maintain the balance of its assets and liabilities in the changing internal and external environment, guaranteeing its solvency and investment attractiveness in the long term within the limits of the acceptable level of risk. According to E. Y. Fayantseva [6], financial stability is a complex concept that reflects the ability of an organization in a changing external and internal environment to maintain liquidity and solvency, to increase the capital of the organization, while maintaining its rational structure, and to develop in conditions of minimal risk. V. V. Kovalev believes that financial stability is the ability of the organization in the long term to maintain the target structure of funding sources [7]. Gilyarovskaya L. T. considers financial stability as the ability to carry out basic and other activities in the conditions of entrepreneurial risk and changing business environment in order to maximize the welfare of owners, strengthen the competitive advantages of the organization taking into account the interests of society and the state [8]. Melnik M. V. notes: "Financial stability is an opportunity at the available state of Finance to function effectively within the set goals" [9]. Thus, the financial stability of the organization is traditionally based on the optimal ratio of current or non-current assets (taking into account their internal structure) with the sources of their financing; the important characteristics of financial stability are the capital structure, liquidity and solvency of the organization. It is the optimal structure of individual types of resources, which will lead not only to a stable financial condition and high financial stability, but also to increase profitability and efficiency of activities, that underlies the management of financial stability of the organization. Considering the approaches to the interpretation of financial stability of Western researchers, including those presented in the works of Russian scientists [10, 11], it is worth noting that in foreign practice this term is used mainly in the banking sector or at the macro level. Thus, the banks of Korea and Hungary define financial stability as a state in which the financial system (financial institutions, financial markets and financial infrastructure) are stable, that is, contribute to the functioning of the real sector of the economy, resist financial imbalances arising as a result of external shocks [12, 13]. Garry J. Schinasi [14] proposes to consider financial stability as a system in a continuous, dynamic state from different sides of its essence, noting:

1. financial sustainability is a broad concept that encompasses various aspects of the financial system-infrastructure, institutions and markets;
2. financial sustainability is not only a consequence of the correct allocation of resources and risks, the mobilization of savings and the promotion of wealth accumulation, development and growth, but also the smooth functioning of payment systems throughout the economy (through official and private, retail and wholesale, formal and informal payment mechanisms);
3. financial stability implies not only the absence of real financial threats, but also the ability of the financial system to limit, contain and combat the emergence of threats of economic instability;

4. financial stability should be formulated in terms of potential implications for the real economy. Disruptions in financial markets or in individual financial institutions should not be considered a threat to financial stability unless they can harm economic activity as a whole.

J. Pera [15], summarizing the approaches to the interpretation of financial stability of foreign researchers, presented below, emphasizes that a stable organization is a constantly working organization that can prevent disturbances of the external and internal environment, without signs of loss of financial liquidity or solvency in the near future, which is expressed in the functioning of the enterprise in a dynamic and stable balance with its internal environment. J. Fidrmuc by financial stability we mean the absence of financial crises. A. Crockett defines financial stability is a state in which business activity is perturbed by neither changes in asset prices, nor financial institutions' difficulties in meeting their liabilities. J. C. Trichet defines stability is a sound condition and harmonious cooperation of financial institutions, in the environment of safe and predictable operation of money markets. J.K. Solarz defines financial stability is a state of dynamic and stable balance on the interlinked financial markets. It should be noted that Western concepts of financial stability [16, 17] are based mainly on qualitative indicators, which expands its boundaries and makes it synonymous with market stability. Garry J. Schinasi [14] notes that the assessment of financial stability can not be reduced only to quantitative indicators. Morphological analysis of the above interpretations of financial stability showed that modern researchers focus on the turbulence of the environment, which is a condition of uncertainty for the functioning of the organization. According to Ts. Mufudza [18], turbulent environment:

- seen as Hyper-competitive, that is, an environment with fierce competition leading to a decrease in sustainable advantage over competitors;
- due to a number of aspects, which include the rapid introduction of innovative products, changing tastes and preferences, increasing the pace of technological development, staff mobility, etc.

R. Ramirez, J. W. Selsky [19] note that cause-and-effect theory (CTT) interprets turbulence as an uncertain and unpredictable environment for strategic planning purposes. The school of social ecology will define turbulence as a contextual level phenomenon arising in the field of closely related interactions that can generate unexpected bifurcations. More than 30 years ago I. Prigogine [20] wrote that all systems contain subsystems that constantly fluctuate. Sometimes a single fluctuation or a combination of fluctuations can become (as a result of positive feedback) so strong that the pre-existing organization does not survive and collapses. At this tipping point (at the bifurcation point), it is fundamentally impossible to predict in which direction further development will take place: whether the state of the system will become chaotic or whether it will move to a new, more differentiated and higher level of ordering. Thus, the turbulence of the environment occurs at a time of instability of the national economy; crisis phenomena encourage organizations to act unconventionally and chaotically, which can lead either to the exit from the crisis or to the collapse. The instability of the national economy is the most important exogenous factor affecting the financial stability of organizations, which is emphasized in their works by both domestic and foreign researchers. The results of the study revealed that Western approaches to the definition of financial stability differ from Russian ones. In the domestic literature, financial stability is presented as the internal system of the organization, which is influenced, including external factors; resistance to disturbances of the external environment is the key to successful and stable functioning of the organization. Foreign researchers consider financial stability, first of all, at the macro level, taking into account the state of the external environment (financial system) and individual organizations.

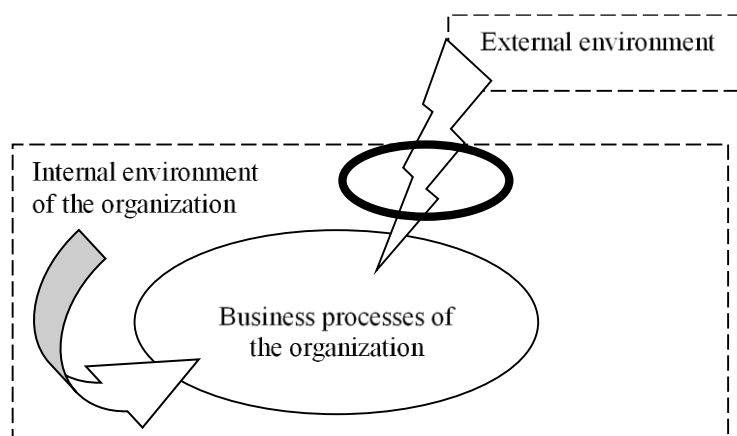
The above leads to the conclusion that in a turbulent environment, financial stability management should assess the stability of the external environment in order to ensure the sustainability of the organization.


### 3. FINANCIAL SUSTAINABILITY MANAGEMENT

Financial stability is currently, on the one hand, a determinant of economic stability, on the other hand, an element of the financial strategy of the organization; therefore, the management of financial stability is interested in both the management of the organization and potential investors and other stakeholders [10]. M. V. Matvienko [21] notes that the process of financial stability management is a set of cyclic actions associated with the identification of factors affecting financial stability, the search for unused reserves to increase it. According to A. Kirov [22] in the context of financial theory, refracting through its own ideology the provisions of the theory of management by results, the management of financial stability of the firm is based on:

- specification of the objectives of the company taking into account the subordination of financial stability management activities to the strategic goal;
- selection of appropriate strategic objectives of tactical tasks that determine the performance indicators that need to be achieved to ensure a given level of financial stability of the company;
- determination of quantitative indicators (criteria) of the goals and objectives;
- identification of external and internal factors affecting the financial stability of the company with the identification of their relationship and priority;
- selection of quantitative indicators characterizing the factors of financial stability of the company;
- management of factors of financial stability of firm with use of tools of the theory of management by results.

Thus, confronting an unstable external environment is one of the main tasks of financial stability management (Fig. 1).



 - bifurcation state

*Figure 1: Impact of internal and external environment on business processes of the organization*

In the conditions of turbulence, the dialectic of the external environment can lag behind the external environment, when the organization does not have time to react to external changes, losing financial stability and financial results. In this case, there is a state of bifurcation.

Considering the management of financial stability as a system, we should talk about the management and managed subsystems. The main functions of the control subsystem are shown in Fig. 2. As can be seen from figure 2, in the financial stability management system, its regulation is carried out according to the results of the analysis carried out on the basis of information-analytical and accounting data, by making management decisions. This approach to the presentation of the financial stability management system is traditional for financial management. Financial sustainability management can also be presented as an independent process, with a target setting, the achievement of which leads to its strengthening. The model of management of financial stability of the organization in a turbulent environment should be focused on achieving the target setting, which is subordinated to the development of analytical tools, including a system of balanced indicators and risk management of loss of financial stability (Fig. 3).

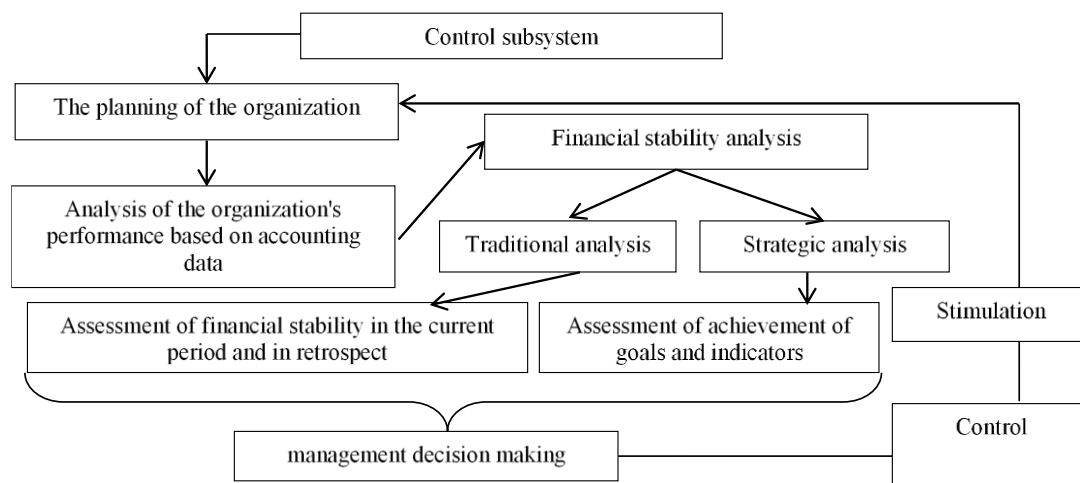


Figure 2: Control subsystem of financial stability management system

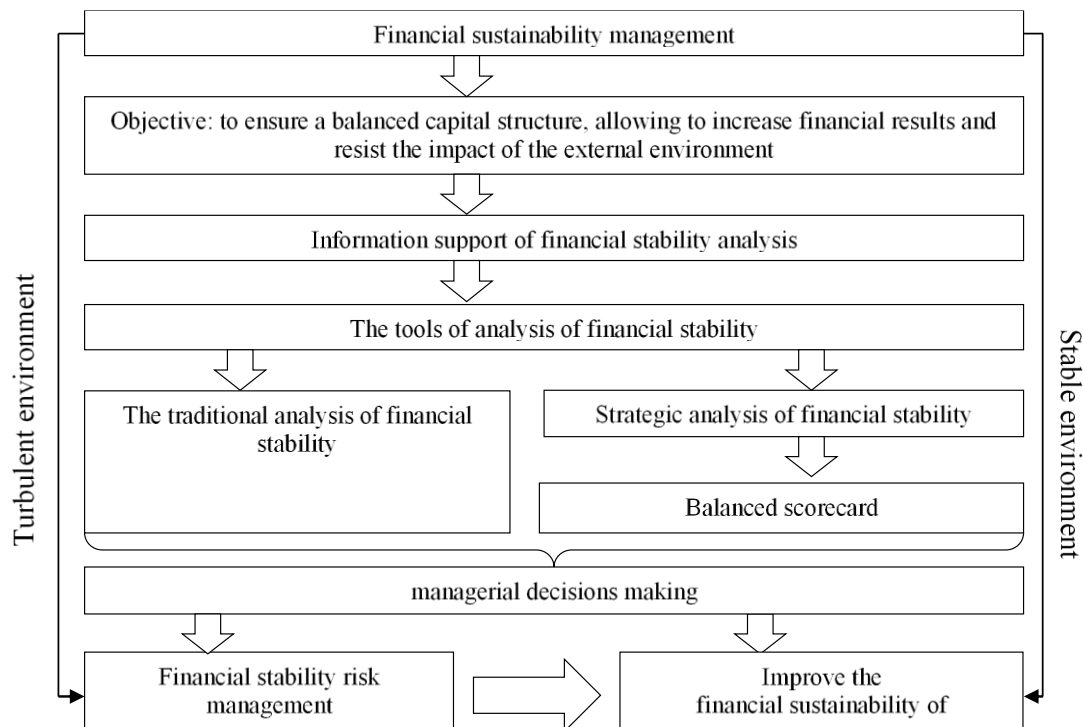


Figure 3: financial sustainability management Model of an organization

As noted above, financial sustainability management is an element of the financial management system of the organization as a whole and the management of its resources in particular, their effective distribution and use in conditions of limited resources at an acceptable level of risk. The purpose of financial stability management is to achieve a capital structure in which in the short term will provide sufficient liquidity and solvency of the organization, increase profits and capital, and in the long term, financial stability management will ensure the financial well-being of the organization and increase the value of the business. It should be noted that the expectations of stakeholders of the results of financial stability management can be different (table. 1).

*Table 1: Stakeholders' expectations in terms of financial sustainability management results*

Stakeholders	Stable environment	Turbulent environment
Owners	Use of borrowed capital for development of the organization, increase of financial results and investment attractiveness of the organization	Use of the borrowed capital in the minimum volume for maintenance of solvency and preservation of financial results
Investors	- Low level of financial risk, favorable environment for investment. - High level of financial risk is caused by investment in assets	High level of financial risk, as a consequence of low solvency of the organization, accumulation of accounts payable
Competitors	The high level of debt capital is due to aggressive financial policies	The high level of borrowed capital is due to a possible decline in the volume of the organization's activities
Suppliers	Increase of the borrowed capital causes development of the organization, growth of financial results	The increase in borrowed capital may lead to an increase in accounts payable, including overdue
Creditors	It is possible to use borrowed capital, but a high degree of solvency is required	Use of mainly own capital, high solvency and efficiency

With the development of approaches to the content of financial stability, the analytical tools for managing it are also expanding. As practice has shown, financial stability is influenced by various factors, including external ones, as mentioned above. The stability of the organization and the entire financial system are interrelated, so the development of analytical tools for managing financial stability predetermines the active use of factor analysis, including in the aspect of the study of external threats. In modern conditions, ensuring financial stability contributes to the effective use of resources of the organization, which predetermined the emergence of an integrated approach to the interpretation and analysis of financial stability, including the assessment of the rational use of all types of resources, not only financial. Analytical tools of financial stability management can be divided into traditional and strategic [23]. The traditional analytical tools of financial stability management include market coefficients of financial stability, assessment of the type of financial stability based on the analysis of the availability of reserves and costs of sources of their formation. The use of traditional tools can be sufficient in a stable environment. The turbulence of the external environment applies strategic analytical tools of management of financial stability, which borrows the tools of strategic management and, above all, the balanced scorecard, allowing you to more accurately determine the level of financial stability of the organization and to make management decisions. It is possible to implement a balanced scorecard in the process of financial stability management by expanding its four components (table. 2).

Table 2: Example of a balanced scorecard, taking into account financial sustainability indicators\*

Components of the balanced scorecard	Indicators
Financial	ROI Added value <i>The coefficients of financial stability</i> <i>Effectiveness of the organization</i> <i>Investment return</i>
Client	Customer satisfaction Customer base preservation Maintaining market share <i>Revenue attributable to regular customers</i>
Internal business processes	Product quality Terms of execution of orders New product development Level of income from innovation The amount of costs attributable to innovation The duration of the production and financial cycle <i>Share of equity and debt capital directed to production activities</i> <i>Share of profit from sales of new products</i> <i>Share of own and borrowed capital in sources aimed at the development of new products</i> <i>The level of sales of new products attributable to the ruble of equity</i>
Personnel training and development	Personnel satisfaction Availability of information systems Labour productivity Personnel qualification

\* Compiled by [24].

\*\* *Italics indicate the indicators characterizing financial stability proposed by the authors*

The priority direction of introduction of balanced scorecard in the process of financial stability management is the expansion of two components: Finance and internal business processes, which are the basis for strengthening financial stability. The financial component of the balanced scorecard is proposed to include market coefficients of financial stability (coefficients of autonomy, financial stability, financial leverage) and performance indicators of the organization (return on equity and debt capital, assets). At the same time, the ratio of indicators of financial stability and efficiency of the organization should be clearly regulated, since, other things being equal, there is an inverse relationship between them. The regulation of these indicators can be reflected in the financial strategy of the organization. The component of internal business processes can be expanded by the following indicators to strengthen the financial stability of the organization:

- 1) the share of own and borrowed capital in sources directed to production activities and to the development of new products; since borrowed capital is a relatively cheap source of funds, its use will increase profits and profitability, but will increase the risk of loss of financial stability;
- 2) the share of profit from the sale of new products and the level of sales of new products attributable to the ruble of equity. The production of innovative products requires large financial investments, the return on which leads to increased efficiency of the organization and in the long term to strengthen financial stability.

Thus, the system of balanced indicators, supplemented by indicators of financial stability, will lead to its strengthening in the long term and to increase the efficiency of the organization as a whole.

#### 4. CONCLUSION

The conducted research allowed to draw a conclusion that the extended interpretations of financial stability presented in the economic literature allow to indicate target installations of management of financial stability and to specify the directions of improvement of analytical tools of management. In modern conditions it is important to level the impact of external factors, which control internal business projects of the organization that, on the one hand, will reduce the risks of losing financial stability and, on the other hand, acquires a special significance in turbulence when under strong negative influence of the external environment, internal business processes do not have time to readjust. The development of analytical tools for financial stability management through the inclusion of strategic management tools will ensure the stable functioning of organizations, increasing the scale of their activities, which will ultimately contribute to their transformation in effective economic subjects.

#### LITERATURE:

1. Blatov N. A. (1928). Balance science (General course). L.
2. Dontsova L. V., Nikiforov N. A. (2004). Analysis of financial statements: studies. benefit. M.: Publishing house of Business and Service.
3. Gilyarovskaya L. T., Endovitsky A. V. (2012). Analysis and evaluation of financial stability of a commercial organization: studies. benefit. M.: Unity-Dana.
4. Fadeikina N. V., Demchuk I. N., Baranova I. V. (2011). Methodological tools for analysis of financial condition, assessment of financial stability of organizations and its application in the practice of credit organizations: monograph. Novosibirsk: SAFBD.
5. Savitskaya G. V. (2017). Methods of complex analysis of economic activity: studies. benefit. M.: INFRA-M.
6. Pancheva E. Y. (2014). The risk of reducing the financial stability of the enterprise in modern conditions. Effective crisis management. 2014. No. 84. Pp. 84-89.
7. Kovalev V. V., Kovalev Vit. V. Analysis of the balance sheet. 3rd ed. Moscow: Prospect, 2015. - 784 PP.
8. Gilyarovskaya L. T., Endovitsky A. V. (2012). Analysis and assessment of financial stability of a commercial organization. Moscow: Unity-Dana, 2012. 159 PP.
9. Boronenkova S. A., Melnik M. V. (2017). Comprehensive financial analysis in enterprise management. Moscow: FORUM: INFRA-M.
10. Kurilova A. A. (2017). Modern concepts of financial stability in financial management. Karelian scientific journal. 2017. Vol. 6 No. 1 (18). Pp. 70-73.
11. D. Cerf, A. Savage Financial management to support sustainability. Retrieved 15.03.2019 from <https://pdfs.semanticscholar.org/d7da/e1fa0e73b2e0fa6dfedd91b1fc92e9fe3683.pdf>.
12. The Bank of Korea. Retrieved 02.10.2019 from <https://www.bok.or.kr/eng/main/contents.do?menuNo=400037>.
13. Magyar nemzeti bank. Retrieved 02.10.2019 from <https://www.mnb.hu/en/financial-stability/defining-financial-stability>.
14. Schinasi G. J. (2004) Defining Financial Stability // IMF Working Papers. 2004. No. 4 (187), 1. Retrieved 15.03.2019 from <http://doi.org/10.5089/9781451859546.001>.
15. Pera, J. (2017). An enterprise's financial stability and its sustainable growth. A risk-based perspective. *Przedsiębiorczość Międzynarodowa*, 3(2), 49-62 (in: M. Maciejewski (ed.), *Ekonomia międzynarodowa wobec współczesnych wyzwań*. Kraków: Uniwersytet Ekonomiczny w Krakowie).
16. Leon P. (2001) Four Pillars of Financial Sustainability. The Nature Conservancy. Arlington, Virginia (USA), 2001. P. 29.
17. Vladimirova T. A., Sokolova T. V. (2017) Financial stability of the organization: essence, content, approaches to evaluation. *Siberian financial school*. 2017. No. 5 (124). Pp. 44-47



18. Mufudza Ts. Dynamic Strategy in a Turbulent Business Environment Retrieved 01.10.2019 from <https://www.intechopen.com/online-first/dynamic-strategy-in-a-turbulent-business-environment>.
19. Ramirez R, Selsky JW. (2016). Strategic planning in turbulent environments: A social ecology approach to scenarios. Long Range Planning. 2016. No. 49(1). P. 90-102.
20. Prigogine I., Stengers I. (1986). Order from chaos: a New dialogue between man and nature. M.: Progress.
21. Matvienko, M. V. (2016). Goals, objectives and main approaches to the management of financial stability of the enterprise. Management and communications: analysis of trends and development prospects: collection of scientific articles. OTV. ed.: A. N. Nikolaeva, E. A. Ilyina, L. G. Vasilyeva. Cheboksary: Chuvash state pedagogical University. I. Ya. Pp. 120-126.
22. Kirov A. (2011) financial stability Management in the context of performance management. Bulletin of the Institute of Economics of the Russian Academy of Sciences. 2011. No. 3. Pp. 305-313.
23. Bavykina E. M., Baranova I. V. (2018). Modification of the traditional model of analysis of the financial condition of the organization in the conditions of economic instability / / Siberian financial school. 2018. No. 3. Pp. 101-107.
24. Kaplan R. S., Norton D. P. balanced scorecard. From strategy to action. Retrieved 15.03.2019 from <https://www.pwc.ru/ru/training/assets/balanced-scorecard.pdf>.

## MARKETING STRATEGY OF NINTENDO COMPANY

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### ABSTRACT

*The technological advances in various companies' departments is being inevitable trend nowadays. Also the world of gaming, games consoles and video games have blossomed into very a profitable entertainment industry. The content of the article is analysis of marketing strategy of Japanese company of Nintendo, which is one of the main representatives in current IT and technological industry. Nintend is main focus is producing specialized platform for video games and games consoles. The company is considered the most valuable enterprise on Japanese market with market value over 37 billion USD and it is market capitalization was estimated 55 billion USD on average in 2018. Nintendo considered to be the most significant global consumer electronics and video game company by market capitalization. The aim of the paper is to analyze company's development of marketing strategy from brief analysis of product portfolio and consumer segmentation to company's distribution and communication policy. Because of the fact that the video game industry is considered as the most innovative in the world of business the article is focused on diversification of Nintendo's product portfolio. The paper also aims on international business activities, especially distribution politics of the company. Analysis of customer segmentation consists of identification of primary and secondary segments based on product portfolio. The specific product values are also analyzed and the positive and negative aspects are defined in the article. Discussion part consists of analyzed data evaluation and the results lead to generalization of Nintendo's marketing strategy and application of the results towards other competing companies in the video game and video consoles market.*

**Keywords:** *Nintendo, video games, marketing strategy, segmentation*

### 1. INTRODUCTION

The diversity of the international environment is influenced by a number of factors. According to Ivan and Čepel, differentiation is due to the increasing openness of economies and stronger integration processes (Ivanova, Cepel, 2018, p. 54 – 72). However, these areas may also include the value factor of the brand, the applied marketing strategy and consumer behavior. However, the current trend in this environment is the perception of brand value and its impact on the marketing strategy of an international company. Views of brand value and strength can vary due to various factors. Kliešťiková and Janošková argue that brand value is mainly affected by the subjective consumer preferences. These may ultimately also influence the change and implementation of the international marketing strategy (Kliestikova, Janoskova, 2017, p. 149 –

157). The Japanese undertaking Nintendo, whose main activity is the production of gaming consoles and games, may also be included in that area. Currently, the company employs 5944 employees on average. Since 2016, the company has (seen) recorded an increase in net income. In 2017, the company's net income reached US \$ 4,366 million. dollars, in 2018 its value rose to 9 595 million US dollars and in 2019 net income was 10 914 US dollars. Despite the unprecedented adverse situation that the company is undergoing from 2013 to the end of 2016, it can be argued that at present net income is similar to the 2006 - 2011 period when the company launched Nintendo DS and Nintendo Wii. (Margino, 2008)

## 2. ANALYSIS OF NINTENDO COMPANY

In the next chapter there is a short analysis of the Nintendo company, its product structure, customer segments and (briefly described) competition of the company is described briefly. Based on the above analysis, the discussion part of the article describes the general marketing strategy of the company.

### 2.1. Product structure of company

Table 1 gives an overview of the products since the company was established. From 1974 to 1978, Nintendo distributed Magnavox Odyssey. The company began providing its own hardware in 1977. In 1980, the company launched the first series of video games called Game & Watch. The most popular game was Famicom, published by the company in 1983. Nintendo 64 was the product introduced by the company in 1996. The advantage was its innovative design and low technical demands. In 2003, the company released Game Boy Advance SP, which was the editor of the classic Game Boy Advance. In 2004, the company launched Nintendo DS, and later in 2006 began selling the Nintendo Wii. With the advancement of innovative technologies, in 2011 the company released (in 2011) Nintendo 3DS based on the 3D platform. Later came the more innovative version of the Nintendo Wii U. (Nintendo Wins Emmy for DS, 2008)

*Table 1: Historical overview of the company's product portfolio*

Season	Product
1974 - 1978	Magnavox Odyssey video game console
1979 - 1982	Game & Watch
1983 - 1989	Family Computer („Famicom“)
1989 - 1995	Super Famicom
1996 - 200	Nintendo 64
2001 - 2003	Game Boy Advance, GameCube
2004 - 2011	Nintendo DS, Nintendo Wii
2011 - 2015	Nintendo 3DS a Nintendo Wii U

Currently, Nintendo's best-selling products include Nintendo DS (DS Lite and DSi), Nintendo 3DS, Wii and Wii. In 2011, 75.28 mil. 3DS product and is currently considered the best selling product of the company. In 2018 and 2019, 3DS recorded a year-on-year decline in product sales of 39.2% on average. Nintendo Switch, however, at the turn of 2018 and 2019 recorded a year-on-year increase in the number of pieces sold, an average of 23.5%. and Wii U sold 13.56 million units in 2012. (Video Game Industry Statistics. Ratings, 2019). One of the best-selling products is the Wii console, which recorded 101.63 million worldwide sales in 2016. The entire Wii concept was created with a compact look and state-of-the-art technology. The company even participated in the production of PowerPC processor with advanced 90 mm SOI CMOS technology. Wii includes a service called "WiiConnect24", which allows the console to be connected to the Internet even when it's turned off (Angelo, 2018).

Based on the concept of a complex product, it can be determined that the core of the product constitutes the essential benefit of play, relaxation, entertainment and (relaxation) abreaction. The product itself is a design because the products are developed by the latest technologies taking into account current design trends. In addition to the design, the product itself is 3D control, quality, technical support, or the use of the latest technologies (eg in the case of Switch rank). The extended product category includes online gaming with other players, access to a 20-year archive of games, or the introduction of various innovations in the form of improving the quality of games, graphics and the like.

## **2.2. Structure of customer segmentation**

Segmentation structure of Nintendo is defined in the following categories:

- Primary segments are families with children aged 6-14 years and parents aged 30-55 years. The mission of the business is to provide entertainment and relaxation. Games are unpretentious, simple, colorful, which will keep the attention of children. When playing games, the family can spend more time with the children, have fun with them and not think about common worries and enjoy life. This can also be considered as the value that the product provides to customers. As it is now possible to see the trend of family separation, when there is a misunderstanding between a 15 year old child and a 40 year old parent, the Nintendo product should be the one that should connect the family with children through relaxation and fun. For this reason, we have decided to define this segment as primary. Even some Nintendo products also provide multiplayer for up to four family members. This can ultimately bring pleasant playing together in a circle of loved ones and family meetings.
- The secondary segment is a group of friends aged 20-27 who can use Nintendo products for leisure, entertainment and relaxation in terms of leisure. As in the first segment, Nintendo should bring people together and maintain a coherent friend status.
- The tertiary segment is a group of women aged 28-45 who spend a lot of time at home. This segment can be defined as a "housewife". For this type of segment, the company launched the Nintendo Wii Fit, which is designed primarily for women who do not have (the) time to go to the fitness center and still want to stay (in a slim line) slim and fit. In the case of leisure time, the product can also be used by men or children.

As mentioned in the previous sub-chapter, the company is trying to bring different values to its customers. Based on the definition of the company's main customers (of the company), it is also possible to define values. The most important values provided by Nintendo products include the unique control system, entertainment, relaxation, abreaction, connection and cohesion of family and friends. Within the tertiary segment, it is also possible to define a value in the form of maintaining a lean line, fitness and better health. Nintendo also brings culture with its games. They are pleasant and iconic characters that are well known all over the world. One of them is Mario, who is now known all over the world. Others are characters from the series, but also Pokémon games especially for younger players, who besides playing "pokeballs", collect cards, participate in various Internet clubs Nintendo. Samples of 25 respondents aged 20-27 were asked which factors the gaming console should fulfill. This mini survey was focused mainly on the secondary segment, as young people fell into this area according to their age structure. Each of the respondents identified 3 factors that he thinks the game console should fulfill. Individual factors and their response by respondents are shown in Table 2. Subsequently, we compared the real expectations of the respondents with the real expectations of the customers who marked the rating on the official site of the game console vendors. Data was analyzed by reviews. A point was assigned to each factor for each positive assessment. The survey was conducted on Ninentdo Wii U, Nintendo 3DS and Nintendo Wii. Based on the data we can confirm our defined segmentation.

*Table 2: Comparison of respondents' real and ideal expectations*

<b>What features should a game console have?</b>	<b>Ideal expectations</b>	<b>%</b>	<b>Real expectations</b>	<b>%</b>
<b>Price</b>	13	<b>17,3</b>	12	<b>16,0</b>
<b>A lot of games</b>	13	<b>17,3</b>	7	<b>9,3</b>
<b>Power</b>	11	<b>14,7</b>	5	<b>6,7</b>
<b>The game console has multiple uses</b>	6	<b>8,0</b>	8	<b>10,7</b>
<b>Playing experience</b>	5	<b>6,7</b>	15	<b>20,0</b>
<b>Design</b>	5	<b>6,7</b>	12	<b>16,0</b>
<b>Compatibility</b>	4	<b>5,3</b>	6	<b>8,0</b>
<b>Good graphic design games</b>	3	<b>4,0</b>	1	<b>1,3</b>
<b>Quality</b>	3	<b>4,0</b>	2	<b>2,4</b>

The table shows that a significant factor in terms of 'ideal expectation' is the cost of the game console and the amount of games the customer can play on the console. In terms of "real expectations", the most important factor is the gaming experience, design and price. In this case, it can be seen that respondents assigned the gaming experience to 5th place in the ideal expectation. Therefore, based on real expectations, it can be argued that the gaming experience provided by the game console is more important than the cost factor. Based on the analyzed data it is possible to confirm our identified customer structure. In defining the first two segments, the value provided to the customer should be determined based on the fulfillment of the gaming experience (Video Game Industry Statistics. Ratings, 2019).

### **2.3. Opportunities and threats affecting Nintendo company marketing strategy**

Opportunities and threats can significantly influence the marketing strategy of a company not only in the positive but also in the negative way. Opportunities should try to strengthen the business, while threats should try to reduce. The first opportunity a business can take is to increase marketability. Game console sources have shown that up to 40% of the total number of players are women, a tertiary segment for society. The business opportunity arises by increasing the sales of the Wii with WiiFit. Statistics show that 41% of women used the Wii in 2008, and two years later in 2010 it was 80% of the women who had the Wii. According to the statistics, it can be seen that sales are currently rising in women. The figures given represent global values. The second opportunity the company can take advantage of is expansion into new markets. Nintendo has already reduced production costs by 40% of the \$ 88 game console. In setting such a price, companies have opened up new markets such as Latin America, Eastern Europe. In technological development, which the company can effectively apply to the production of products with lower costs, it is possible to take advantage of the opportunity to find new markets. The development of new segments and the adaptation of the marketing strategy can be another opportunity for the company to increase its sales. Quality of life is an invaluable part for people and is mainly related to a healthy lifestyle, personal health but also education (eg obtaining information about health status). It is precisely on the principle of determining health, measuring pressure, helping to build a healthy lifestyle that the company can take the opportunity. We see this in the technology solution that is currently available on the market, and it can challenge Nintendo how to gain new customer segments and strengthen the current marketing strategy. In addition to opportunities there are also threats that can reduce business revenue and revenue and ultimately weaken the implementation of the marketing strategy. The first threat may be PC BOX, which currently produces accessories for Nintendo products. The device is capable of playing copied "pirated" games and MP3 music. Nintendo game consoles have their own chip, and therefore only games purchased from or exclusively licensed by the company should work on it. Currently, Nintendo is in court with PC BOX.

In this sense, it is a business that provides cheaper options for accessories and is a big threat to Nintendo, as the "accessories" provided by PC BOX customers can also perceive the poor quality associated with Nintendo. In this case, it is possible to see a weakening of the company's marketing strategy. The second threat is the number of children in households. At present, there is a trend in the decline in household children. This trend is influenced by the fact that women postpone pregnancy to a later age due to career growth, life use and other factors. The trend is expected to continue. This may compromise the marketability of Nintendo for game consoles and games. Therefore, the company should take the opportunity to focus on new segments and thus strengthen the marketing strategy in this sense. In addition to the decreasing number of children in households, there is also a trend of market saturation. It is now saturated with games, game consoles and products so many that customers are unable to decide which gaming product can meet their high-level needs. The result of the decision-making process is also the non-realization of the final purchase.

### 3. DISCUSSION

Currently, the company's marketing strategy focuses on selling current products. Based on the data, it is possible to claim that the company has secured an effective strategic position on the market. The disadvantage, however, is that it is unable to exploit the potential provided by the international environment. Therefore, the main strategic recommendation for Nintendo is to strengthen and strengthen the defense strategy in the international market. In particular, this strategy should be fulfilled by expanding its operations with existing products to new markets and thereby more effectively exploiting the potential provided by the international environment. On the basis of the above, it can be argued that the defined strategy will be strengthened and strengthened when new products are introduced, eg a tablet that includes all the usage options and can be connected to a game console (such as Wii U). Essentially, the implementation of this strategy may be related to the combination with a new product in a new market, but the essence will remain in the existing gaming industry. By applying the strategy, the company will preserve its gaming culture and strengthen the brand in the world, thereby firmly strengthening its international presence. Key activities are essential for the proper implementation of Nintendo's marketing strategy. As has been found, Nintendo is taking a different path than its competitors, but in fact its priority is to sell gaming consoles, games and accessories. It mainly sells products through specialized online and offline stores. It should be emphasized that Nintendo also presents itself through its stores. One of them is a store in New York that provides not only consoles, games and accessories, but mainly space, which is properly located, divided into sections according to what customers like. For example, one can find a Pokémon section, a Mario section or a Sonic section. Customers meet their cartoon characters and heroes. Every week in this store is something special. Other such Nintendo WorldStore stores can be visited in Tokyo and the latest is being prepared in China. This activity is occurring. The development of new products can be considered as a key activity. Nintendo was the first to introduce motion-playing technology. Even now, the company seeks innovative solutions in the gaming industry, which can ultimately add value to its customers. Nintendo also focuses on low-cost consoles. The games available on Nintendo do not have high HW or SW demands and therefore the company saves production costs. It should be added that the company is also engaged in strengthening the game culture while playing games. Customers live with Mario and Pokémon characters, and it also adds value when playing games. Many of them are collectors of Pokémon cards and fans of Pokémon or Sonic. In addition to the key activities, the key resources are important for the company. For Nintendo, they are employees, finance and suppliers. Without the efficient use of these resources, the company would not be able to function properly. Employees are important because they have a lot of developers, service technicians and managers who are responsible for developing not only new products, but also internal business

processes. Besides employees, financial analysis is an important indicator of the company's success. Bartosova and Kral argue that financial analysis results are effective when they can objectify analytical results. (Bartosova, Kral, 2016, p. 189-197) Fogarassy, Neubauer et. al. (Fogarassy, Neubauer, Mansur, Tangl, Olah, Popp, 2018, p. 52-66) The main financial source and basis for financial analysis is the profit from the sale of gaming goats, games and accessories.

#### 4. CONCLUSION

For the fulfillment of marketing strategy is also important competitive advantage of the company, which should gain by implementing the development strategy. Nwachukwu and Olatunji, who claim that a well-elaborated strategy can provide a competitive advantage to the company, also share this statement. (Chijioke, Olatunji, 2018, p. 15-25) As mentioned above, this should be achieved by penetrating new products into new markets. This is evidenced by the fact that three years after the Wii was launched, the company managed to reduce production costs by an average of 30%. It is with this existing product on the market that companies are opening up new markets such as Latin America, Eastern Europe, where these products are not very available. Therefore, the company should focus on the development of other products with lower costs. Other factors that will influence the fulfillment of the development strategy may be, for example, improving WiiFit, opening new markets for the company, creating a gaming console to monitor health. An important factor that can give a company a competitive advantage is the use of new technological opportunities offered by the market. Roberts and Marchais argue that the use of digital technology has radically changed the way consumers behave. This can ultimately be used by Nintendo to promote sales (Roberts, Gauthier, 2018, p. 9-42). It also identifies itself with the aim Majerova and Kliestik. (Majerova, Kliestik, 2015, p. 546-552). In general, a marketing strategy should primarily bring benefits and value to customers. Mirică says that emotions are also an important element in influencing shopping behavior. (Mirică, Oana, 2018, p. 39-44) It also identifies itself with the aim Gajanova, Nadanyiova and Kliestikova. (Gajanova, Nadanyiova, Kliestikova, 2019, p. 239-252). It is possible to agree with the author and the enterprise can achieve this mainly by bringing together players and creating new friendships and acquaintances between them. The value can also be seen in the key activities described above (eg stores where players can meet their main characters or innovative product solutions).

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#### LITERATURE:

1. Bartosova, V, Kral, P. (2016). A Methodological Framework of Financial Analysis Results Objectification in the Slovak Republic. *European Proceedings of Social and Behavioural Sciences*. Future Academy.
2. D'Angelo W. (2018). *Year on Year Sales & Market Share Charts*. Retrieved 02.09.2019 from <http://www.vgchartz.com/article/440688/year-on-year-sales-amp-market-share-chart-s-september-14-2019/>
3. *Dedicated Video Game Sales Units. Financial Data*. Retrieved 30.08.2019 from [https://www.nintendo.co.jp/ir/en/finance/hard\\_soft/index.html](https://www.nintendo.co.jp/ir/en/finance/hard_soft/index.html)
4. Fogarassy, C, Neubauer, E, Mansur, H, Tangl, A, Olah, J, Popp, J. (2018). The main transition management issues and the effects of environmental accounting on financial performance – with focus on cement industry. *Administratie si Management Public*. The Bucharest University of Economic Studies.

5. Gajanova, L, Nadanyiova, M, Kliestikova, J. (2019). THE POTENTIAL OF USING BLUETOOTH-BASED SYSTEM AS A PART OF PROXIMITY MARKETING IN THE SLOVAK REPUBLIC. *Marketing and management Innovations*. Sumy state University.
6. Chijioke, N, Vu, H M, Olatunji, F. (2018). Influence of strategy formulation drivers on strategic performance. *Ekonomicko-manazerske spektrum*. The University of Zilina.
7. Ivanova, E, Cepel, M. (2018). The Impact of Innovation Performance on the Competitiveness of the Visegrad 4 Countries. *Journal of Competitiveness*. Tomas Bata University in Zlin.
8. Kliestikova, J, Janoskova, K. (2017). Branding with understanding: how national profile of consumer influences brand value perception. *Marketing and management of innovations*. University of Maryland.
9. Majerova, J, Kliestik, T. (2015). Brand valuation as an immanent component of brand value building and managing. *Procedia Economics and Finance*. Ephesus, TURKEY
10. Magrino, T. (2008). "CES '08: Nintendo wins second Emmy". Retrieved: 30.08.2019 from <https://www.gamespot.com/articles/ces-08-nintendo-wins-second-emmy/1100-6184421/>
11. Mirică D, Cătălina, O.(2018). Judgments and Decision Making in Consumer Behavior: The Use of Psychophysiological Measures to Investigate Emotions and Cognitive Responses. *Economics, Management, and Financial Markets*. Addleton Academic Publishers.
12. *Nintendo Wins Emmy For DS And Wii Engineering*. (2012). Retrieved 30.08.2019 from <https://web.archive.org/web/20121011171547/http://news.sky.com/story/565392/nintendo-wins-emmy-for-ds-and-wii-engineering>
13. *Nintendo Wii U Premium. Sales References*. (2008). Retrieved 05.09.2019 from <https://herne-konzoly.heureka.sk/nintendo-wii-u-premium/recenze/>
14. Roberts, T, Gauthier M. (2018). Assessing the Role of Social Media and Digital Technology in Violence Reporting, *Contemporary Readings in Law and Social Justice*. Addleton Academic Publishers.
15. *Video Game Industry Statistics. Ratings*. Retrieved 05.09.2019 from <http://www.esrb.org/about/video-game-industry-statistics.jsp>



# LINKING STUDENTS' SATISFACTION WITH COMMUNICATION WITH PROFESSORS WITH STUDENTS' SATISFACTION WITH FACULTY AND RE-ENROLLMENT ATTITUDE OF THE SAME STUDY

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## ABSTRACT

*Higher education around the world is undergoing a process marked by significant changes in educational demand and educational supply and they are in a position to find solutions to problems arising from the various specific needs of the end users of their services, respectively current and future students. The emergence of privately owned versus state-owned higher education institutions has led to fierce competition in the higher education market. In such a highly competitive environment, where students have many options available, higher education institutions must carefully analyze the factors that affect student satisfaction and lead to attracting new and retaining existing students. This study is designed to analyze is possible to explain the variance of student's satisfaction with faculty by the influence of satisfaction with communication with professors and to determine if there is a correlation and what direction between satisfaction with communication with professors and re-enrollment attitude of the same study. Students' responses were measured through an adapted questionnaire based on the Likert scale from 1 to 7. The research sample includes 414 students from the public and private higher education institutions. The results of the regression analysis revealed a significant and positive impact of students' satisfaction with communication with professors on their satisfaction with faculty. A small positive correlation between satisfaction with communication with professors and re-enrollment attitude of the same study was calculated.*

**Keywords:** *higher education, student' satisfaction, communication*

## 1. INTRODUCTION

The main focus of this paper is primarily aimed at determining the importance of students' satisfaction with communication with professors which result in increasing students' satisfaction with faculty and create the opportunities for advancement in this field in order to improve management in education. Also, the aim is to determine if there is a relationship between satisfaction with communications with professors and the re-enrollment attitude of the same study. As Fox (2006) states, "Communication is a vital part of all management functions - planning, organizing, human resources care, leadership and controlling. Management can only be realized through communication - management is communication." It is an organizational function that involves the deliberate, planned, designed, systematic and continuous establishment and maintenance of understanding between an enterprise and its environment. It is the key to effective communication in all sectors of business, government, academia and NGOs.

According to Delros (1996) communication is the key of education, the foundation of successful teaching and all relationships. The whole activity is based on communication. All problems arise from the lack of adequate and successful communication. Communication, according to experts, improves business relationships and as good and successful communication can increase profit, so bad and wrong communication can reduce it (Dobrijević G., 2011, p. 7). Accordingly, the role of communication in the management process is evident. The process of globalization has also affected higher education institutions. The emergence of privately owned higher education institutions has led to the creation of harsh competition in the higher education market and the necessity for applying the general theoretical principles of management and marketing in the governance of these institutions (Terzić and Aščić, 2018). Analyzing the literature of numerous researches so far, we can conclude that communication realized through strategically planned public relations contributes to increasing the overall student satisfaction, which is one of the main goals of higher education institution management. Hetch (1978) states that “satisfaction with communication means support provided when a communication process or event meets positive expectations.” Based on the above, the aim of higher education institutions must be to consider the needs and desires of students as end users and, accordingly, adapt the educational system. Management of higher education institutions should think about how to offer programs that maintain or enhance long-term student satisfaction. The success of an educational institution, the quality of services it provides, as well as the satisfaction of the end user, in this case the student, largely depends on the implementation of an adequate model of communication, therefore it is necessary to seriously elaborate on this complex issue. Communication is one of the central components of every organization, and it is therefore clear why a better knowledge of communication techniques is largely related to overall organizational success. Communication in an organization means the transfer of information, ideas, attitudes or emotions from one person or group to another person or group, usually with the intention of influencing behavior (Bahtijarević-Šiber & Sikavica, 2001). Satisfaction of a student as customer is not a new concept and higher education institutions are becoming more aware of the fact that education is a service activity and that it is of utmost importance to meet the needs of users. Faculties are increasingly becoming aware of the importance of student satisfaction as it has been proven that satisfaction has a positive effect on student motivation, attendance, attraction of new students and increasing income (Vranešević, Mandić, & Horvat, 2006, p. 84). Customer satisfaction is a significant factor in positive word of mouth and customer loyalty. Faculty's attempts to deliver more value to clients with a view to their greater satisfaction indicates the need to refine business processes and apply modern business behavior and approach to clients. A customer-centered culture involves the rejuvenation of the client as a partner, and employees need to spread their beliefs that their existence is conditioned by their success in solving the problems of key partners - in this case, students (Vranešević, Mandić, & Horvat, 2006, p. 90). The number of competitors in higher education is increasing, and for this reason it is necessary to create an approach that will properly detect the needs of students, and the importance of the concept of their satisfaction in higher education is indisputable, as satisfaction affects repeat purchases, positive word of mouth and student loyalty. In such a competitive academic market where students have many options to choose from, factors that enable educational institutions to attract and retain students should be seriously studied (Terzić and Aščić, 2018).

## **2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

Higher education around the world is undergoing a process marked by significant changes in educational demand and educational supply and they are in a position to find solutions to problems arising from the various specific needs of the end users of their services, respectively current and future students.

The emergence of privately owned versus state-owned higher education institutions has led to fierce competition in the higher education market. In such a highly competitive environment, where students have many options available, higher education institutions must carefully analyze the factors that affect student satisfaction and lead to attracting new and retaining existing students. The concept of student as a client is not new (Crawford & F, 1991), and its use has continued in studies by other authors (Hill, 1995; Narasimhan, 2001). Students pay tuition fees and expect the highest value possible for the money they invest, and for this reason, students are viewed as clients whose satisfaction is extremely important (Terzić and Aščić, 2018). The goal of a higher education institution should not only be profit but the satisfaction of the client or student because the satisfied client will repeat the purchase, spread positive word of mouth and remain loyal and thus the higher education institution will maximize its profit (Scot, 1999). Stronger and deeper relations with students as and effective and creative ways of attracting new and retaining existing ones are of even greater importance to privately owned higher education institutions since they do not receive any financial assistance from the state (Teo, 2001). Internal communication is often neglected in relation to communication with other, external publics. But successful organizations and successful managers know that the internal public is actually the most important public and therefore communication with them is of great importance and should by no means be neglected. Numerous scientific studies and researchs have proven the link between quality of internal communication and the business success of an organization. Organizations that successfully and efficiently communicate with their internal public and develop quality relationships with them have a better reputation and more loyal customers and achieve better financial results. Regardless of the quality of the offered teaching processes and study programs, if an educational institution with a positive image and reputation, which is based on quality internal communication, does not stand out from the competition, it certainly cannot boast of successful business. Tench & Yeomans (2009) state that internal communication has a strategic purpose as it builds two-way trust relationships with the internal public in order to improve effectiveness. Better informed internal public will be more motivated and thus contribute to higher productivity of the company as well as improvement of image. Retaining existing students is just as important as attracting new ones because it is much more expensive to attract new students than retaining existing ones (Helgesen & Nasset, 2007). Patti, Tarpley, Goree, & Tice (1993) found that students who are more satisfied with their studies will continue their studies next year. They also found that students who perceived that faculty members were interested in their well-being and progress were also more likely to continue their studies than students who did not have that perception. While until recently, management has been an important factor in the teaching sector, today management has a different role to play, which is the intention and willingness to satisfy students as a key internal public and thus influence the student's perception of service quality. All attention is focused on the negative sides of the model, which emphasizes that dealing with dissatisfaction, and the aspects that lead to it, can increase satisfaction (Nyer, 2000). According to (Vranešević, Mandić, & Horvat, 2006) faculties are aware of the fact that education is a service activity and that it is of utmost importance that they meet the needs and desires of their clients or students. How can it be inferred from the theoretical analysis of available literature, and globally, that interest has been shown in exploring the importance of effective communication in organizations and in educational institutions (Bush, 2011; Gorton & Alston, 2011; OECD, 2008). Informal student contact with faculty staff is associated with student retention (Terenzini & Pascarella, 1980), and student retention is conditioned by their satisfaction (Druzdzel & Glymour, 1995). Relations with professors and teaching assistants, the assistance of faculty staff and obtaining feedback all have a significant impact on students' satisfaction with the research they conducted (Yusoff, McLeay, & Woodruffe-Burto, 2015). The quality of feedback, the teacher-student relationship and interactions with fellow students all have a major impact on student satisfaction

with the university (Sojkin, Bartkowiak, & Skuza, 2012; Kuh & Hu, 2001). Douglas, McClelland, & Davies (2008) found in their study that communication was one of the most significant sources of college student satisfaction and dissatisfaction, but did not delve deeper into research to determine its significance and direct impact on overall satisfaction. In general, now all educational institutions in the world, in the form of a feedback questionnaire, seek the opinion of students on all aspects of academic life (Douglas, Douglas, & Barnes, 2006). Universities around the world are now competing for students both nationally and internationally. In order to recruit and retain students, universities should strive to improve student satisfaction and reduce student dissatisfaction. This can only be achieved if all services that contribute to “academic life” are implemented to the proper standards. Students are the sole judges as to whether or not this has been achieved. Student satisfaction surveys at universities should be conducted on a regular basis in order to adapt services to student expectations (Douglas, Douglas, & Barnes, 2006).

### 3. DATA AND METHODOLOGY

This study is designed to examine whether satisfaction with communication with professors significantly contributes to the students' satisfaction with faculty and to determine if there is a relationship between satisfaction with communications with professors and the re-enrollment attitude of the same study. The following are the research questions in this study:

- Q1. Is possible to explain the variance of student's satisfaction with faculty by the influence of satisfaction with communication with professors?
- Q2. Is there a correlation between satisfaction with communication with professors and re-enrollment attitude of the same study?

The questionnaire was distributed to 500 undergraduate students in private and public sector faculties in Bosnia and Herzegovina. 463 completed questionnaires were received. 414 of them were usable. Prior to completing the questionnaire, the respondents received information on the purpose of the research and instructions on how to fill in the questionnaire accurately. A questionnaire as a method of collecting data was used in this survey. The questionnaire consists of four sections: demographic characteristics of the respondents, students' satisfaction with faculty, satisfaction with communication with professors and a single item question, „Would you re-enroll in the same study“. Students' satisfaction with faculty was measured by single-item question, „How well are you satisfied with your faculty“, on a Likert scale of 1 (extremely dissatisfied) to 7 (extremely satisfied). The questionnaire used for measuring satisfaction with communication with professors is based on the questionnaire developed by Ana Tkalac Vercic (2009), called UPZIK, which uses the Likert scale from 1 to 7, with 1 being extremely dissatisfied and 7 extremely satisfied. The questionnaire was modified for research purposes at a higher education institution. The question, „Would you re-enroll in the same study“, had two possible answers, yes and no. The data were analyzed using the Statistical Package for the Social Sciences (SPSS). A principal component analysis (PCA) was conducted on 6 items of the satisfaction with communication scale. Regression analysis was used to examine whether satisfaction with communication with professors significantly contributes to the satisfaction with study. Correlation analysis was conducted to assess if there is a relationship between satisfaction with communications with professors and the re-enrollment attitude of the same study.

### 4. RESULTS AND DISCUSSION

#### 4.1. Profile of the respondents

Demographic information includes the following characteristics of the respondents: type of the faculty, gender and year of study. Demographic characteristics presented in Table 1. are based

on frequencies and percentages. In the study 206 (49.8%) students are from public faculties and 208 (50.2%) students are from private faculties. In this study, there were 168 (41.4%) male students and 238 female students (58.6%). 8 (1.9%) students did not respond about gender. 129 (31.3%) students are at first, 124 (30.1%) are on second, 90 (21.88%) are on third and 69 (16.7%) on fourth year of study. 2 (0.5%) students did not respond about year of study.

*Table 1: Profile of the respondents*

		<b>TYPE OF FACULTY</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	206	49.8	49.8	49.8
	Private	208	50.2	50.2	100.0
	Total	414	100.0	100.0	
		<b>GENDER</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	168	40.6	41.4	41.4
	Female	238	57.5	58.6	100.0
	Total	406	98.1	100.0	
Missing	System	8	1.9		
Total		414	100.0		
		<b>YEAR OF STUDY</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	129	31.2	31.3	31.3
	Second	124	30.0	30.1	61.4
	Third	90	21.7	21.8	83.3
	Fourth	69	16.7	16.7	100.0
	Total	412	99.5	100.0	
Missing	System	2	.5		
Total		414	100.0		

#### 4.2. Descriptive statistics for variables

For the variable satisfaction with faculty, only one item measured on the Likert's seven-point scale was used. The variable - satisfaction with communication with professors consists of six parts. The Likert's seven-point scale was used to measure variable satisfaction with communication with professors. In Table 2. it can be noticed that students are generally satisfied with faculty ( $M = 5.33$ ) as well as with communication with professors ( $M = 5.31$ ). The lowest result of satisfaction with faculty is 2, which tells us that there are no students who are extremely dissatisfied with their studies. The highest result of satisfaction with faculty is 7, which tells us that there are students who are extremely satisfied with their faculty. Results for the variable - satisfaction with communication with professors range from 1.33 to 7. Therefore, we see that the results show that there are students who are extremely dissatisfied with communication with professors, as well as those who are extremely satisfied with that dimension of communication. Table 3. shows that 354 (85.9%) students would choose the same study again and 58 (14.1%) would not. 2 (0.5%) students did not respond to this question.

*Table following on the next page*

*Table 2: Descriptive statistics for satisfaction variables*

	N	Minimum	Maximum	Mean	Std. Deviation
Students' satisfaction with faculty	414	2	7	5,33	1,211
Satisfaction with communication with professors	413	1,33	7	5,31	1,187
Valid N (listwise)	413				

*Table 3: Descriptive statistics for re-enrollment attitude of the same study*

If i was going to faculty again i would enroll this one						
		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	YES	354	85.5	85.9	85.9	
	NO	58	14.0	14.1	100.0	
	Total	412	99.5	100.0		
Missing	System	2	.5			
Total		414	100.0			

#### 4.3. Reliability of the research

The results of the reliability test are presented in Table 4. The Cronbach coefficient Alpha = 0.910, points to a very good reliability and internal agreement of the measuring scale for this sample of respondents.

*Table 4: Statistical reliability*

Reliability Statistics	
Cronbach's Alpha	N of Items
.910	6

#### 4.4. Principal component analysis for satisfaction with communication

A principal component analysis (PCA) was conducted on 6 items of the satisfaction with communication with professors scale. Before conducting the analysis, the suitability of data for analysis was evaluated. A review of the correlation matrix revealed many coefficients of a value of 0.3 and higher and no coefficient greater than 0,9 what would indicate to the problem of multicollinearity in the data. The value of the Kaiser-Meyer-Olkin's measure is 0.882, which exceeds the recommended value of 0.6. Bartlett's sphericity test has reached a statistical significance, which points to the factuality of the correlation matrix.

*Table 5: KMO and Bartlett's test*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.882
Bartlett's Test of Sphericity	Approx. Chi-Square	1645.650
	Df	15
	Sig.	.000

Analysis of the main components revealed the presence of one component with eigenvalue over 1 (Kaiser's criterion ) which explains 69.75% variance.

*Table following on the next page*

*Table 6: Results of PCA*

<b>Total Variance Explained</b>						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.185	69.749	69.749	4.185	69.749	69.749
2	.589	9.817	79.566			
3	.415	6.923	86.488			
4	.382	6.365	92.854			
5	.226	3.770	96.624			
6	.203	3.376	100.000			
Extraction Method: Principal Component Analysis.						

Table 7 shows the factor loadings for each item of the allocated factor. We see in the table that each item has a decent high weight (above 0.4) for that factor. Thus, items of satisfaction with communication with professors can be used as one factor in future analyzes

*Table 7: Component Matrix of factor loadings for items of the satisfaction with communication with professors scale*

<b>Component Matrix<sup>a</sup></b>	
	Component
	1
Availability of the professors	.845
Familiarity of the professors with students' problems/difficulties	.819
The promptness of the professors response to the mail	.772
Kindness and curtsy of the professors in communication with students that need assistance	.893
The professor's communication in the lecture is satisfactory	.870
Teaching professors demonstrate a good knowledge of communication skills and create a comfortable climate	.807
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

#### 4.5. Regression analysis on satisfaction with faculty

A review of the results of the regression analysis in Table 8. indicates that the regression ( $F = 169,572$ ) is statistically significant at the level of 0.01 (Sig.F). The coefficient of determination ( $R^2$ ) and multiple correlations ( $R$ ) show that it is possible to explain the variance of student's satisfaction with faculty 29% by the influence of satisfaction with communication with the professors and that their correlation is 0.54. The value of Beta coefficient (0,54) and t - value (13,022) is statistically significant at the level of 0.01.

*Table following on the next page*

*Table 8: Relation of students' satisfaction with communication with the professors and their satisfaction with faculty*

R=0.54	R <sup>2</sup> =0.29	F - relation=169.572	Sig. F=0.000		
			Beta	t-value	P
Students' satisfaction with communication with the professors			0.54	13.022	0,000

#### 4.6. Correlation of students' satisfaction with faculty and attitude on re-enrollment of the same faculty

Correlation between students' satisfaction with faculty and attitude on re-enrollment of the same faculty was analyzed using the Pearson linear correlation coefficient (Table 9). Preliminary analyzes were conducted to prove that the assumptions for this analysis were met. A small positive correlation between the two variables was calculated, with  $r=0.26$ ,  $p<0.0005$ .

*Table 9: Correlation of students' satisfaction with faculty and attitude on re-enrollment of the same faculty*

Correlations		Re-enrollment attitude of the same study	Students' satisfaction with communication with the professors
Re-enrollment attitude of the same study	Pearson Correlation	1	.260**
	Sig. (2-tailed)		.000
	N	412	411
Students' satisfaction with communication with the professors	Pearson Correlation	.260**	1
	Sig. (2-tailed)	.000	
	N	411	413

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

## 5. CONCLUSION

This paper had two goals. The first was to analyze is possible to explain the variance of student's satisfaction with faculty by the influence of satisfaction with communication with professors. The second was to determine if there is a correlation and what direction between satisfaction with communication with professors and re-enrollment attitude of the same study. Results of the research conducted on students of the faculties in Bosnia and Herzegovina showed that satisfaction with communication with professors has statistically significant impact on student's satisfaction with faculty which is also the answer to our first research question. Results revealed a significant and positive impact of students' satisfaction with professors and student's satisfaction with faculty. It is possible to explain the variance of student's satisfaction with faculty 29% by the influence of satisfaction with communication with the professors. A small positive correlation between satisfaction with communication with professors and re-enrollment attitude of the same study was calculated, which is answer to our second research question. Achieving student satisfaction has become an extremely important challenge for the management of higher education institutions as satisfied students create a positive image of the faculty, which will ultimately reflect on the attractiveness of the faculty for prospective students which is one of the key factors for the success of a college business. Based on the results of the research, it is necessary to set a strategic framework for a two-way communication model between professors and students that will contribute to increase the satisfaction of the students, which in the future leads to more success and competitiveness of the institution. For successful business, besides attracting new students, it is very important to create loyalty to the existing ones by enabling them to have quality two-way symmetrical communication that will make them feel the parts of the institutions and increase their level of satisfaction. The results obtained will be significant for the management of the higher education institution as the influence of



satisfaction with communication with professors in students' satisfaction with faculty has been identified and thus contributed to a better understanding of their interconnections which will give a clearer picture of the activities to be undertaken and prioritized with respect to the objective to be pursued.

## LITERATURE:

1. Bahtijarević-Šiber, F., & Sikavica, P. (2001). *Leksikon Medadžmenta*. Zagreb: Masmedia.
2. Bush, T. (2011). *Theories of Educational Leadership and Management (4th edition)*. London: Sage Publications Inc.
3. Crawford, F. (1991). *Total quality management*. Committee of Vice-Chancellors and Principals, Occasional paper, London.
4. Delors, J. (1996). *Learning: The Treasure Within*. Paris: UNESCO.
5. Dobrijević, G. (2011). *Poslovno komuniciranje i pregovaranje*. Beograd: Singidum Univerzitet.
6. Douglas, J., Douglas, A., & Barnes, B. (2006). Measuring student satisfaction at a UK university. *Quality Assurance in Education*, 251-267.
7. Douglas, J., McClelland, R., & Davies, J. (2008). The development of conceptual model of student satisfaction with their experience in higher education. *Quality Assurance in Education*, 16(1), 19-35.
8. Druzdzel, M., & Glymour, C. (1995). Application of the TETRAD II program to the study of student retention in US colleges. *Procedia of the AAAI-94 KDD Workshop*, (pp. 419-430).
9. Fox, R. (2006). *Poslovna komunikacija*. Zagreb: Pučko otvoreno učilište, Hrvatskka sveučilišna naklada.
10. Gorton, R., & Alston, J. (2011). *School Leadership and Administration: Important Concepts, Case Studies, and Simulations*. New York.
11. Helgesen, O., & Nasset, E. (2007). What accounts for students loyalty? Some field study evidence. *International Journal of Education Management* 21 (2), 126-143.
12. Hetch, M. (1978). The conceptualisation and measurement of interpersonal communication satisfaction. *Human resource Research*.
13. Hill, F.M. (1995). Managing service quality in higher education: the role of the student as primary consumer. *Quality Assurance in Education*, 3 (3):10-21.
14. Kuh, G., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *Review of Higher Education*, 24(3), 309-332.
15. Narasimhan, K. (2001). Improving the climate of teaching sessions: the use of evaluations by students and instructors. *Quality in Higher Education*, 7(3):53-65.
16. Nyer, P. (2000). An Investigation into Whether Complaining Can Cause Increased Consumer Satisfaction. *Journal of Consumer Marketing*, Vol. 17 (1), 9-19.
17. OECD. (2008). *Improving School Leadership Project*. Paris.
18. Patti, M., Tarpley, R., Goree, C., & Tice, G. (1993). The relationship of college facilities and service to student retention. Rad prezentiran na Mid-South Educational Research Association Meeting, New Orleans, LA. *Rad prezentiran na Mid-South Educational Research Association Meeting*, . New Orleans, LA.
19. Scott, S. V. (1999). The academic as a service provider: is the customer always right? *Journal of Higher Education Policy and Management*, 21(2):193-202.
20. Sojkin, B., Bartkowiak, P., & Skuza, A. (2012). Determinants of higher education choices and student satisfaction: the case of Poland. *Higher Education*, 63 (5), 565-81.
21. Tench, R., & Yeomans, L. (2009). *Otkrivanje odnosa s javnošću*. Zagreb: PRint.
22. Teo, C.L. (2001). Realities of private institution. *New Strait time*, 4.

23. Terenzini, P., & Pascarella, E. (1980). Toward the validation of Tinto's model of college student attrition: A review of recent studies. *Research in Higher Education*.
24. Terzić, E & Aščić, A. (2018). Linking students' satisfaction with communication and their overall satisfaction: student as a customer approach. *Proceedings of the 9th International Conference of the School of Economics and Business*. Sarajevo: University of Sarajevo, School of Economics and Business.
25. Vranešević, T., Mandić, M., & Horvat, S. (2006). Istraživanje činitelja zadovoljstva studenata. *Poslovna izvrsnost, znanstveni časopis za promicanje kulture kvalitete i poslovne izvrsnosti Vol. I. No. 1*.
26. Yusoff, M., McLeay, F., & Woodruffe-Burto, H. (2015). Dimensions driving business student satisfaction in higher education. *Quality Assurance in Education*, 86-104.

## PHILANTHROPIC WORK, ACTIVISM AND SOCIAL ENTREPRENEURIAL INTENTION ANTECEDENTS

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### ABSTRACT

*The paper is the first part of the research that is aimed at measuring the impact of social entrepreneurial education on social entrepreneurial intention and its antecedents. The aim of this paper is to examine whether greater experience in philanthropic work and activism is associated with greater social entrepreneurship desirability and social entrepreneurship feasibility among the business students at the beginning of Social Entrepreneurship course. The results show that the students with more experience in philanthropic work perceive social entrepreneurship as more desirable. However, these experiences are not associated with perceiving social entrepreneurship as more feasible. On the other hand, the experience in activism is not associated with the perceived desirability of social entrepreneurship, but it does seem to strengthen one's ability to gather a team of capable people to start a company that would solve a social problem.*

**Keywords:** *activism, desirability, donating, feasibility, philanthropic work, prosocial behavior, volunteering, social entrepreneurship*

### 1. INTRODUCTION

According to the operational definition of social enterprise in the European Union, a social enterprise is an undertaking whose primary objective is to achieve social impact rather than generating profit for owners; which uses its surpluses mainly to achieve these social goals; which is managed in an accountable, transparent and innovative way, in particular by involving workers, customers, and stakeholders affected by its business activity (European Commission, 2011, 2019). In 2015 the Government of the Republic of Croatia presented the Strategy for Social Entrepreneurship Development in Croatia for the period 2015-2020. The Strategy listed four specific aims including the establishment and improvement of legislative and institutional framework for social entrepreneurship; the establishment of a financial framework for the effective work of social entrepreneurs; the promotion of social entrepreneurship through all forms of education; and visibility of social enterprises. Although the Strategy (Government of the Republic of Croatia, 2015) could have been implemented better providing more support to social enterprises in Croatia, social entrepreneurship at least gained some support from the higher education sector. Croatian higher education institutions have recognized the importance of introducing social entrepreneurship and related courses in their curricula including VERN University, University of Zagreb (Faculty of Law, Faculty of Organization and Informatics, Faculty of Education and Rehabilitation Sciences, Faculty of Economics and Business, Faculty of Agriculture, Faculty of Political Science), Josip Juraj Strossmayer University of Osijek (Faculty of Economics), Juraj Dobrila University of Pula (Faculty of Economics and Tourism "Dr. Mijo Mirković"), University of Rijeka (Faculty of Tourism and Hospitality Management), Zagreb School of Economics and Management and others (European Commission, 2019; Kedmenec et al., 2019). The number of social entrepreneurship and related courses is growing and researchers have to evaluate whether these efforts have the desired outcomes. The introduced courses are mostly elective with the exception of the course Social Entrepreneurship which was introduced three years ago at the Faculty of Organization and Informatics as a mandatory course in the study program Economics of Entrepreneurship. Since it is a mandatory course, it gives an opportunity to evaluate the impact of social entrepreneurship education on

the population of business students which is unbiased in terms of students' current aspirations towards solving social problems. This paper is the first part of the research that is aimed at measuring the impact of social entrepreneurial education on social entrepreneurship intention and its antecedents. The paper will present the analysis of students' experiences in philanthropic work and activism at the beginning of the Social Entrepreneurship course and examine whether there are associations between these experiences and social entrepreneurial intention antecedents. The paper is organized as follows. Section 2 presents the results of the previous research related to the topic. Section 3 explains the data and methodology used in the study. Section 4 presents the results while section 5 concludes the paper and presents the plan for further analysis.

## **2. SOCIAL ENTREPRENEURIAL INTENTION MODEL**

According to the theory of entrepreneurial event, entrepreneurial intentions form when a person perceives entrepreneurship as both desirable and feasible and has a propensity to act (Shapero & Sokol, 1982). Mair and Noboa (2006) proposed a theoretical adaptation of entrepreneurial intention model to social entrepreneurship. According to that model, if a society wants more social entrepreneurs, higher education should focus on increasing social entrepreneurship desirability and social entrepreneurship feasibility. Ahuja et al. (2019) presented a thorough literature review on the many factors that potentially lead to the development of social entrepreneurial intention. This long list of factors also includes the experience in volunteering. Hockerts (2017) developed and empirically confirmed the model in which the variable prior experience represents a starting point in social entrepreneurial intention formation whose influence is mediated by empathy, moral obligation, self-efficacy and perceived social support. In this research the variable prior experience measured the experience in volunteering or otherwise working with social organizations on social problems.

### **2.1. Philanthropic work and activism**

Social entrepreneurship emerges on the overlap of public, private and civil sector and as such has some common characteristics with other types of prosocial behaviors typical for the civil sector such as philanthropic work and activism. Philanthropic work basically refers to donation – giving something without getting something in return. A person can donate his or her time (which is known as volunteering), money or things. Purely philanthropic work is driven by social mission, beneficiaries pay nothing for received goods or services, processes are financed by donations and workers are volunteers. On the other hand, social enterprises create both social and economic value, they often apply price discrimination or subsidized rates and have a mix of fully paid staff and volunteers (Dees, 1998). What social enterprises have in common with humanitarian organizations is that their social mission is aimed at alleviation of exclusion, marginalization, or suffering of the targeted group of people which lacks the financial means or political clout to achieve the transformation on its own (Martin & Osberg, 2007). Based on the sample of 80 social entrepreneurs Shaw and Carter (2007) found that most of them had previous working experience in the social sector. An exploratory study involving 13 interviews to social entrepreneurs from Portugal found that volunteering, associated with values that a person has and the feeling of usefulness, was an important motivation for social venture creation among 53% of respondents (Braga et al., 2014). The experience of volunteering for social causes is especially valuable because volunteers gain deeper understanding of social problems which may lead to propositions of better solutions. Previous research shows that experience in prosocial behavior positively impacts both social entrepreneurship desirability and social entrepreneurship feasibility among business students even when controlled for empathy (Kedmenec, 2015). One explanation might be that these types of experiences bring greater awareness to social problems and thus make social entrepreneurship desirable as a potential

solution of these social problems. In this research the variable experience in prosocial behavior included experiences in volunteering, in making donations and in activism. These experiences also made social entrepreneurship more feasible.

Thus, the following hypotheses are proposed:

- **H1a:** Students with higher levels of experience in philanthropic work perceive social entrepreneurship as more desirable.
- **H1b:** Students with higher levels of experience in philanthropic work perceive social entrepreneurship as more feasible.

The most efficient social entrepreneurs in Croatia in terms of the number of social enterprises they have created are the two founders of ACT group (ACT Grupa, 2019). Both of them started to work on solutions for social problems as activists (Posavec, 2018). Social activists attempt to create change through indirect action by influencing governments, consumers and others to take action (Martin and Osberg, 2007). In that way they gain knowledge about social problems which may inspire them to also express a direct action in the form of social entrepreneurship.

Thus, the following hypotheses will be tested:

- **H2a:** Students with higher levels of experience in activism perceive social entrepreneurship as more desirable.
- **H2b:** Students with higher levels of experience in activism perceive social entrepreneurship as more feasible.

### 3. DATA AND METHODOLOGY

A quantitative survey method was used to obtain data on experience in philanthropic work and activism among the third year students of the undergraduate study program Economics of Entrepreneurship. This group of students was chosen because in the third year of their studies they have a mandatory course called Social Entrepreneurship. The survey was conducted at the beginning of the course. The students were asked to voluntarily fill in the questionnaire under anonymous conditions in classroom settings. After excluding the incomplete questionnaires, the sample consisted of 68 respondents out of 81 students who were enrolled in the course Social Entrepreneurship. In the sample 88% of the respondents were women reflecting the sex structure of the third year students of the undergraduate study program Economics of Entrepreneurship. The average age of students was 21.4 years (st. dev. 0.8). Perceived desirability of social entrepreneurship and perceived feasibility of social entrepreneurship were measured using the previously developed measurement scales (Kedmenec, 2015). The experience in philanthropic work and the experience in activism were measured by closed YES/NO questions. For the experience in philanthropic work the students were asked whether they have volunteered for a non-profit organization, donated money and donated blood, clothes, furniture etc. For the experience in activism the students were asked whether they have voted in elections, signed a petition and engage in a protest. For the data analysis, the students' responses were divided into groups based on their previous experiences. Firstly, the students were divided into two groups based on their experience in philanthropic work and secondly, they were divided into two groups based on the experience in activism. The independent t-test was used to determine whether there is a statistically significant difference in social entrepreneurship desirability and social entrepreneurship feasibility between the groups with different levels of experiences.

#### 4. RESULTS

Table 1 shows the mean and standard deviation of each item measuring perceived desirability of social entrepreneurship (SED) and perceived feasibility of social entrepreneurship (SEF). The students on average perceive social entrepreneurship as desirable. On average they show the lowest agreement with the statement that starting a company that solves some social problem represents an attractive professional choice. The level of agreement with social entrepreneurship feasibility items is lower in comparison with social entrepreneurship desirability items. The highest average level of agreement among the SEF items the students expressed for the statement that they would be able to gather a team of capable people if they decided to start a company that would solve a particular social problem.

*Table 1: Descriptive statistics of statements measuring social entrepreneurship desirability and social entrepreneurship feasibility*

Code	Construct with corresponding statements	Mean (St. dev.)
<i>SED</i>	<i>Perceived desirability of social entrepreneurship</i>	
SED1	It would bring me great pleasure to start a company whose mission would be to help the solving of social problems.	3.8 (0.8)
SED2	Starting a company that solves some social problem represents an attractive professional choice.	3.4 (1.0)
SED3	Owning a company that emphasizes its social mission has more advantages than disadvantages for me.	3.9 (0.8)
<i>SEF</i>	<i>Perceived feasibility of social entrepreneurship</i>	
SEF1	I would be able to gather a team of capable people if I decided to start a company that would solve a particular social problem.	3.4 (0.8)
SEF2	It would be easy for me to start and manage a company that solves a particular social problem.	2.7 (0.7)
SEF3	I know all the possibilities for financing a company whose mission is to solve social problems.	2.8 (0.9)

Cronbach's alpha coefficient of perceived desirability of social entrepreneurship and perceived feasibility of social entrepreneurship amounted to 0.739 and 0.499, respectively. Cronbach's alpha coefficient for perceived desirability of social entrepreneurship was in line with its reliability measured in the previous research (Kedmenec et al., 2015). However, on this sample of students the construct social entrepreneurship feasibility did not have a satisfactory reliability as was the case in the previous research (Kedmenec et al., 2015). The reason for this lack of the feasibility construct reliability might be in the sample size or the sex structure of the sample. Since the construct did not show satisfactory reliability, it was decided to test the difference for each statement belonging to the construct perceived feasibility of social entrepreneurship. Table 2 presents the data on the number of students who have experience in different types of philanthropic work and activism. Regarding philanthropic work, the students mostly have experience in making donations, both in money and things while volunteering experiences are rare. Regarding activism, the great majority of the students has voted in elections. Half of the students signed at least one petition, while only 7 of them engaged in a protest. Higher share of students who have signed a petition is probably due to the fact that nowadays the petitions are often available on-line and promoted on social networks which makes them more easily accessible.

*Table following on the next page*

*Table 2: The number of students who have/do not have the experience in philanthropic activities and activism*

Experience	YES	NO
<i>Philanthropic work</i>		
Volunteering for a non-profit organization	12	56
Donating money for humanitarian causes	55	13
Donating blood, clothes, furniture or other items	59	9
<i>Activism</i>		
Voting in elections	64	4
Signing a petition	33	35
Engaging in a protest	7	61

Since the three types of philanthropic work were measured, the students were divided into two groups in the following way. The first group was made of those students who did not have any experience in philanthropic work or had only one type of experience. The second group of students included those who had experience in at least two types of philanthropic work. The independent t-test compared the social entrepreneurship desirability between these two groups of students. The results are presented in Table 3. Students with higher levels of experience in philanthropic work had on average higher social entrepreneurship desirability (mean 3.81, st. dev. 0.65) in comparison to students with lower levels of experience in philanthropic work (mean 3.10, st. dev. 0.82). The difference in social entrepreneurship desirability was statistically significant confirming the hypothesis H1a ( $p=0.001$ ).

*Table 3: Independent t-test for social entrepreneurship desirability between groups of students with different levels of philanthropic work experience*

		Levene's Test for Equality of Variances		t-test for Equality of Means		
Code	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)
SED	Yes	.304	.583	-3.349	66	.001
	No			-2.907	15.786	.010

Since the concept social entrepreneurship feasibility did not have a reliable Cronbach's alpha coefficient, the analysis was made for each statement separately. Table 4 shows that there is no statistically significant difference in perceived social entrepreneurship feasibility items between the students with more experience and students with less experience in philanthropic work so the hypothesis H1b is rejected.

*Table 4: Independent t-test for social entrepreneurship feasibility components between groups of students with different levels of philanthropic work experience*

		Levene's Test for Equality of Variances		t-test for Equality of Means		
Code	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)
SEF1	Yes	1.153	.287	-1.037	66	.303
	No			-.843	15.015	.412
SEF2	Yes	.338	.563	-.236	66	.814
	No			-.208	16.012	.838
SEF3	Yes	.553	.460	-1.334	66	.187
	No			-1.273	17.224	.220

Since the three types of experience in activism were measured, the students were divided into two groups in the following way. The first group was made of those students who did not have

any experience in activism or had only one type of experience. The second group of students included those who had at least two types of experiences in activism. The independent t-test compared the social entrepreneurship desirability between these two groups of students. The results are presented in Table 5.

*Table 5: Independent t-test for social entrepreneurship desirability between groups of students with different levels of activism experience*

		Levene's Test for Equality of Variances		t-test for Equality of Means		
Code	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)
SED	Yes	1.205	.276	1.548	66	.126
	No			1.536	60.157	.130

The difference in social entrepreneurship desirability was not statistically significant ( $p=0.126$ ) between the students with more experience in activism (mean 3.53, st. dev. 0.82) compared to the students with less experience in activism (mean 3.80, st. dev. 0.63). Based on the obtained results the hypothesis H2a is rejected. Table 6 shows the results of independent t-tests comparing the means of social entrepreneurship feasibility items between the students with different levels of experience in activism. Students with more activism experience on average think that they are more capable to gather a team of capable people to start a company that would solve a social problem (mean 3.61, st. dev. 0.86), in comparison with students who have less activism experience (mean 3.14, st. dev. 0.73). The difference is statistically significant ( $p=0.020$ ). On the other hand, the difference was not statistically significant in the easiness of starting a company that solves a social problem, nor in the knowledge about financing a company whose mission is to solve a social problem. Thus, the hypothesis H2b is partially confirmed.

*Table 6: Independent t-test for social entrepreneurship feasibility components between groups of students with different levels of activism experience*

		Levene's Test for Equality of Variances		t-test for Equality of Means		
Code	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)
SEF1	Yes	1.278	.262	-2.388	66	.020
	No			-2.377	62.921	.021
SEF2	Yes	1.125	.293	-.914	66	.364
	No			-.914	65.747	.364
SEF3	Yes	.442	.508	1.124	66	.265
	No			1.123	65.450	.266

## 5. CONSLUSION AND FURTHER RESEARCH

While previous research confirmed that experience in prosocial behavior including both philanthropic work, making donations and activism strengthens social entrepreneurship desirability and social entrepreneurship feasibility, this research looked into the matter in more detail. The experience in philanthropic work was analyzed separately from the experience in activism. Among the third year students of Economics of Entrepreneurship volunteering experiences were rare while most of the students had experience in making donations, both in money and things. Almost all students in the sample had voted in elections, half of the students signed at least one petition, while the engagement in protests was rare. The students participate more in the prosocial activities which do not require a lot of their time. The students on average perceive social entrepreneurship as desirable, but show the lowest agreement with the statement



that starting a company that solves some social problem represents an attractive professional choice which confirms the need for better social status of social entrepreneurs which is missing in Croatian society. The students' express lower levels of agreement with social entrepreneurship feasibility items in comparison with social entrepreneurship desirability items. Among the SEF items the students expressed the highest average level of agreement with the statement that they would be able to gather a team of capable people if they decided to start a company that would solve a particular social problem. The results show that the students with more experience in philanthropic work perceive social entrepreneurship as more desirable, but not as more feasible. On the other hand, the experience in activism is not associated with the social entrepreneurship desirability, but it does seem to strengthen one's ability to gather a team of capable people to start a company that would solve a social problem. The research confirmed the importance of one's experiences in the civil sector for the social entrepreneurial intention antecedents. Thus, the course Social Entrepreneurship will include gaining experiences in philanthropic work and activism. In the next phase of the research the impact of such social entrepreneurship education on social entrepreneurial intention and its antecedents will be evaluated. The main limitation of the research is the sex structure of the sample which did not reflect the sex structure of the population, but with 88% of respondents being women, the results should yet be confirmed on a larger sample of male business students.

## LITERATURE:

1. ACT Grupa. (2019). Community – ACT Grupa. Retrieved August 2, 2019, from <http://act-grupa.hr/en/community/>
2. Ahuja, V., Akhtar, A., & Wali, O. P. (2019). Development of a comprehensive model of social entrepreneurial intention formation using a quality tool. *Journal of Global Entrepreneurship Research*, 9(1), 41. <https://doi.org/10.1186/s40497-019-0164-4>
3. Braga, J. C., Proença, T., & Ferreira, M. R. (2014). Motivations for social entrepreneurship – Evidences from Portugal. *Tékhne*, 12, 11–21. <https://doi.org/10.1016/j.tekhne.2015.01.002>
4. Dees, J. G. (1998). Enterprising nonprofits. *Harvard Business Review*, 76, 54–69.
5. European Commission. (2011). *Social Business Initiative Creating a favourable climate for social enterprises, key stakeholders in the social economy and innovation*. Retrieved from [http://ec.europa.eu/internal\\_market/social\\_business/docs/COM2011\\_682\\_en.pdf](http://ec.europa.eu/internal_market/social_business/docs/COM2011_682_en.pdf)
6. European Commission. (2019). *Social enterprises and their ecosystems in Europe Updated Country Report: Croatia Author: Davorka Vidović*. Retrieved from Publications Office of the European Union website: <https://ec.europa.eu/social/main.jsp?advSearchKey=croatia&mode=advancedSubmit&catId=22&policyArea=0&policyAreaSub=0&country=0&year=0>
7. Government of the Republic of Croatia. (2015). *Strategy for Social Entrepreneurship Development in Croatia for the period 2015-2020 (Strategija razvoja društvenog poduzetništva u Republici Hrvatskoj za razdoblje od 2015. Do 2020. Godine)*. Retrieved from <http://www.esf.hr/wordpress/wp-content/uploads/2015/02/Strategija-razvoja-dru%C5%A1tvenog-poduzetni%C5%A1tva-u-RH-za-razdoblje-2015-2020.pdf>
8. Hockerts, K. (2017). Determinants of Social Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, 41(1), 105–130. <https://doi.org/10.1111/etap.12171>
9. Kedmenec, I. (2015). *The Impact of Individual, Social and Cultural Factors on the Social Entrepreneurial Intentions of Business Students* (PhD thesis). University of Maribor, Maribor.
10. Kedmenec, I., Detelj, K., & Kadoić, N. (2019). The potential of ICT-enabled social innovation. In: K. Skala, (Ed.) *MIPRO 2019 Proceedings*, 1628–1633. Retrieved from <https://www.bib.irb.hr/1003367>

11. Kedmenec, I., Rebernik, M., & Tominc, P. (2015). Development of Social Entrepreneurial Intention Model. In: A. Kavkler & K. Logožar (Eds.) *Proceedings of the 6th Global Conference on Managing in Recovering Markets, GCMRM 2015*, 373–382. Retrieved from <https://www.bib.irb.hr/770211>
12. Mair, J., & Noboa, E. (2006). Social Entrepreneurship: How Intentions to Create a Social Venture are Formed. In J. Mair, J. Robinson, & K. Hockerts (Eds.), *Social Entrepreneurship* (pp. 121–136). New York, USA: Palgrave Macmillan.
13. Martin, R. L., & Osberg, S. (2007). Social entrepreneurship: The case for definition. *Stanford Social Innovation Review*, 5(2), 27–39.
14. Posavec, R. (2018). *Punk entrepreneurs (Pank poduzetnici)*. Čakovec: ACT Grupa.
15. Shapero, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. In C. Kent, D. Sexton, & C. Vesper (Eds.), *Encyclopedia of entrepreneurship* (pp. 72–90). Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1497759](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1497759)
16. Shaw, E., & Carter, S. (2007). Social entrepreneurship: Theoretical antecedents and empirical analysis of entrepreneurial processes and outcomes. *Journal of Small Business and Enterprise Development*, 14(3), 418–434. doi.org/10.1108/14626000710773529

## PREDICTIVE MODELLING OF ACADEMIC PERFORMANCE BY MEANS OF BAYESIAN NETWORKS

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### ABSTRACT

*Predicting academic performance is an often-required task in Higher Education field. Development of data mining, especially educational data mining (EDM) provided algorithms for effective data analysis with the aim to improve quality of the educational processes. In this paper, probability based approach to machine learning (Bayesian networks) is applied in order to predict academic performance of IT students based on data about their socio-demographic characteristics, attitudes, motivation and behavior. Main aim of presented research was twofold: (i) to predict students' academic performance and to identify most significant predictors of students' success, (ii) to investigate possibilities of probability based machine learning approach for developing predictive models in educational domain. Research results indicated high level of potential for Bayesian networks application on educational datasets.*

**Keywords:** *Bayesian networks, academic success, data mining, CRISP DM process model*

### 1. INTRODUCTION

Student retention, as well as students' failure to graduate and to complete their educational goals, has been in the focus of many research efforts in recent years. The process of identifying students who start their studies but do not finish it with successful outcome is an important topic in the domain of teaching-and-learning. Most often managers and educators rely on experience to identify the factors of students' retention quality. However, actions should be designed by educators to deal with this issue. Growing number of researches state this problem (McCoy and Byrne, 2017; Paige et al., 2017; Li and Carroll, 2017; Webb, Wyness and Cotton, 2017) while trying to identify determinants of students' failures/success. In order to predict students' academic performance, it is essential to find significant variables that could contribute to the accurate and reliable prediction. Previous research results (Fernandes et al., 2019; Shahiri and Husain, 2015; Asif et al., 2017; Burgos et al., 2018; Miguéis et al., 2018; Adekitan and Salau, 2019; Gray and Perkins, 2019; Xu et al., 2019) indicated data mining and machine learning approaches as useful for this purposes. Data mining is the field of discovering novel and potentially useful information in large amounts of data. Data mining has been applied in a large number of fields so far. In recent years, there has been growing interest in the use of data mining within the field of educational research. This has led to the development of an area of educational data mining. Educational data mining (EDM) is defined as the area of data analysis focused on development of methods for discovering of knowledge on educational settings data. The aim of this research is to apply machine learning approach in order to successfully predict the quality level of academic performance. This paper is structured as follows. Section two explains research methodology focusing on data mining process and data description.

Section three gives an overview of the results. Section four concludes the paper by listing limitations and guidelines for further research.

## **2. METHODOLOGY**

The primary goal of this research was to develop predictive models of students' success in order to make early identification of students at risk. Hereinafter, the data used in data mining modeling is explained. Process of data mining is described in second part of this section.

### **2.1. Data description**

The measurement tool used in data collecting was a questionnaire based on which the respondents consisting of graduate students were asked about their success at the university, students' characteristics and behavior. A total of 114 questionnaires were collected. Each questionnaire consisted of 36 multiple-choice questions with a focus on testing the commitment of students during the entire learning process at the university (attending lectures, seminars, independent work or group work, etc.), and on the learning mode (the preferred styles of learning, a way of mastering teaching units, materials used for learning, etc.). Variable selection was performed in data preparation phase with the aim to select 15 most important variables. Relief technique for variable selection was applied (Kira and Rendell, 1992). Selected variables are presented in Table 1.

*Table following on the next page*

*Table 1: Selected variables description*

Variable	Description
Gender	<i>Categorical</i> Female or male
High school GPA	<i>Numerical - continuous</i> Students Grade Point Average in high school
Year of enrolment at the Faculty	<i>Categorical</i> Year in which student started to study
Lecture attendance	<i>Categorical</i> I did, almost all I used permissible absences Most of the time I did not
Seminar attendance	<i>Categorical</i> I did, almost all I used permissible absences Most of the time I did not
Preparation for classes	<i>Ordinal</i> Completely disagree Disagree Neither agree or disagree Agree Completely agree
Preparation for classes by using	<i>Categorical</i> Notes of others My notes Books Combined
Learning materials	<i>Categorical</i> E-learning Books Combined
In-class activity	<i>Ordinal</i> Completely disagree Disagree Neither agree or disagree Agree Completely agree
Admission exam score	<i>Categorical</i> 1-10 10-30 30-70 70-100
I find teamwork useful	<i>Ordinal</i> Completely disagree Disagree Neither agree or disagree Agree Completely agree
I love to work alone	<i>Ordinal</i> Completely disagree Disagree Neither agree or disagree Agree Completely agree
Learning style	<i>Categorical</i> Judicial Executive Legislative Combined
Persistence in learning	<i>Ordinal</i> Completely disagree Disagree Neither agree or disagree Agree Completely agree
Grade point average	<i>Numerical</i> Overall grade achieved at the course

Detailed description of data and variable distributions can be found in (Oreski, Pihir and Konecki, 2017). CRISP DM process model has been applied in this research to analyze the data and it is explained in the next part of this section.

## 2.2. CRISP DM process model

CRISP DM stands for CROss-Industry Standard Process for Data Mining (Wirth and Hipp, 2000). CRISP DM implies six steps for data analysis (see Figure 1).

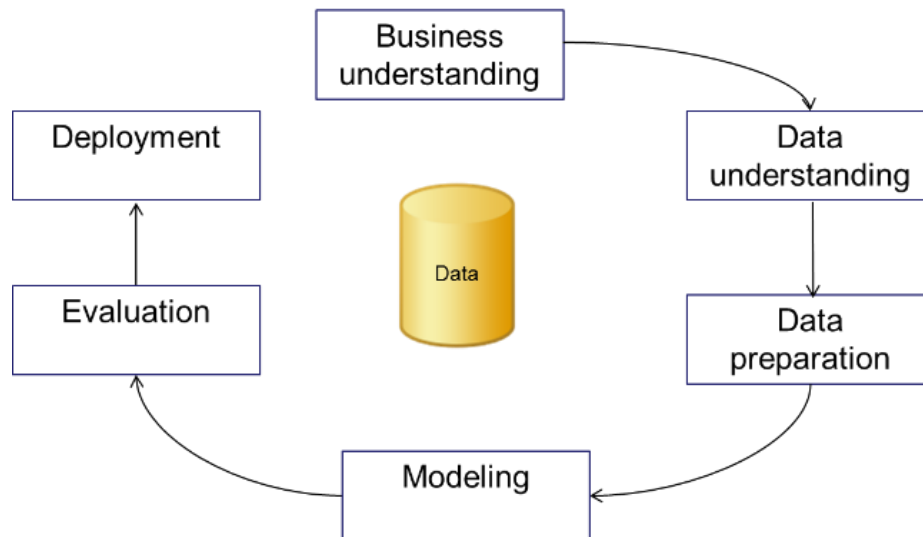


Figure 1: CRISP DM process  
(Oreski, Pihir and Konecki, 2017, according to Wirth and Hipp, 2000)

Data understanding and data preparation were performed first. These steps have been explained earlier: data description for data understanding phase and variable selection for data preparation phase. Modeling phase consists of activities of building and assessing the predictive models. In this research, students' academic performance prediction based on their characteristics and attitudes has been performed. In order to do so, modeling technique had to be selected. Four different machine learning approaches have been developed so far. These approaches are:

- 1) information based machine learning approach,
- 2) probability based machine learning approach,
- 3) error based machine learning approach,
- 4) similarity based machine learning approach.

Authors of this paper have previously developed and tested information based machine learning approach in academic performance prediction (Oreski, Pihir and Konecki, 2017). Hereinafter, the development and testing of probability based machine learning approach (Bayesian networks) is presented and discussed.

## 3. RESULTS

Bayesian network modeling was applied on prepared dataset. Correlation analysis served as the basis for defining network structure. Network is presented in Figure 2. Each input node is directed to the output, students' GPA. Once the Bayesian network has been created, it needed to be tested. Testing was performed on ten student graduates. Each tester made his own assessment in the defined model and compared the result with the actual average. Actual and predicted values by Bayesian network were compared. Developed model achieved accuracy of 83,21%.

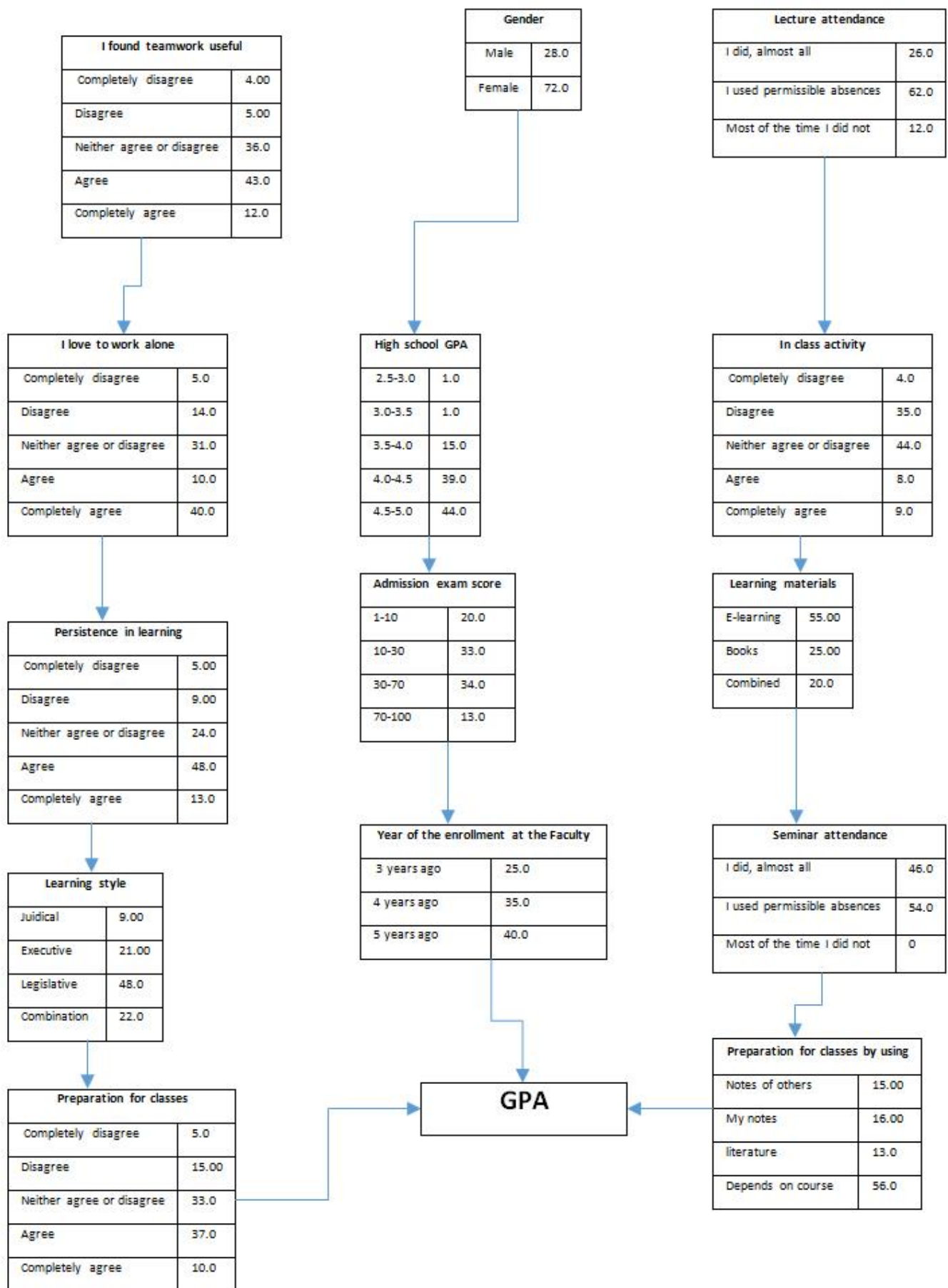


Figure 2: Bayesian network model

Sensitivity analysis was performed in order to identify most important variables for student success prediction. Results are presented in Figure 3.

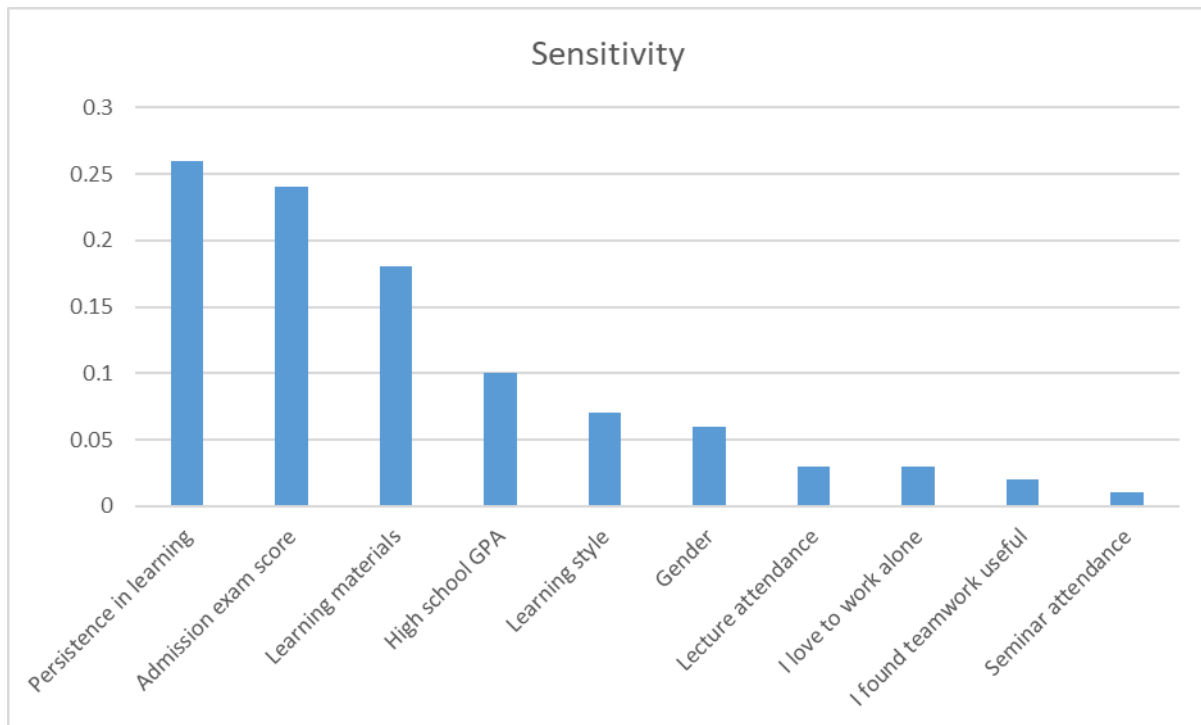


Figure 3: Sensitivity analysis

Sensitivity analysis results indicated the highest association of the GPA with the variable Persistence in learning, following by Admission exam score and type of Learning materials used. This result demonstrates that students who are persistent achieve success. Admission exam score is also significant predictor of students' success at the university. Students with better results at the admission exam score were more successful at the university. Since the high school GPA is also among the strongest predictors of academic success, it can be concluded that previous education level impacts university success. Students' gender and style of learning are also among significant predictors of their academic success.

#### 4. CONCLUSION

Results of this research contribute to research of educational data mining in prediction of academic performance by demonstrating that probability based machine learning approach is effective for educational data analysis. It has been demonstrated that Bayesian networks show great potential, so it can be assumed that if the characteristics of other datasets are similar, then the performance of the probability machine learning approach on these datasets is similar as well. However, this research also faced several limitations. The most significant limitation is the limited number of respondents. Thus, the results cannot be mapped to the whole population. The survey was conducted on computer science students, so a general conclusion cannot be applied to all students. In the future research students of more diverse studies will be included. The curriculum changes over the years and the data collected in the survey are specific to a particular generation of students. For these reasons, it is difficult to generalize the given conclusions because they are valid only for a specific environment. In order to avoid these limitations, it would be necessary to conduct a longitudinal study on a larger sample of respondents over several years to obtain representative results that would be generally valid for all students.



**LITERATURE:**

1. Adekitan, A. I., & Salau, O. (2019). The impact of engineering students' performance in the first three years on their graduation result using educational data mining. *Heliyon*, 5(2), e01250.
2. Asif, R., Merceron, A., Ali, S. A., & Haider, N. G. (2017). Analyzing undergraduate students' performance using educational data mining. *Computers & Education*, 113, pp. 177-194.
3. Burgos, C., Campanario, M. L., de la Pena, D., Lara, J. A., Lizcano, D., & Martínez, M. A. (2018). Data mining for modeling students' performance: A tutoring action plan to prevent academic dropout. *Computers & Electrical Engineering*, 66, pp. 541-556.
4. Fernandes, E., Holanda, M., Victorino, M., Borges, V., Carvalho, R., & Van Erven, G. (2019). Educational data mining: Predictive analysis of academic performance of public school students in the capital of Brazil. *Journal of Business Research*, 94, pp. 335-343.
5. Gray, C. C., & Perkins, D. (2019). Utilizing early engagement and machine learning to predict student outcomes. *Computers & Education*, 131, pp. 22-32.
6. Kira, K., & Rendell, L. A. (1992). A practical approach to feature selection. In *Proceedings of the 9th international workshop on Machine learning*, Location: Aberdeen, Scotland.
7. Li, I. W., & Carroll, D. (2017). Factors influencing university student satisfaction, dropout and academic performance: An Australian higher education equity perspective. Perth, Western Australia: National Centre for Student Equity in Higher Education, Curtin University.
8. McCoy, S., & Byrne, D. (2017). Student retention in higher education. *Economic insights on higher education policy in Ireland* (pp. 111–141). Springer.
9. Miguéis, V. L., Freitas, A., Garcia, P. J., & Silva, A. (2018). Early segmentation of students according to their academic performance: A predictive modelling approach. *Decision Support Systems*, 115, pp. 36-51.
10. Oreski, D., Pihir, I., & Konecki, M. (2017). Crisp-DM process model in educational setting. *Economic and Social Development: Book of Proceedings*, pp. 19-28.
11. Paige, S. M., Wall, A. A., Marren, J. J., Dubenion, B., & Rockwell, A. (2017). *The learning community experience in higher education: High-impact practice for student retention*. Taylor & Francis.
12. Shahiri, A. M., & Husain, W. (2015). A review on predicting student's performance using data mining techniques. *Procedia Computer Science*, 72, pp. 414-422.
13. Webb, O., Wyness, L., & Cotton, D. (2017). *Enhancing access, retention, attainment and progression in higher education: A review of the literature showing demonstrable impact*. Higher Education Academy.
14. Wirth, R., Hipp, J. (2000). CRISP-DM: Towards a standard process model for data mining. In *Proceedings of the 4th international conference on the practical applications of knowledge discovery and data mining*, pp. 29-39, Location: New York, USA.
15. Xu, X., Wang, J., Peng, H., & Wu, R. (2019). Prediction of academic performance associated with internet usage behaviors using machine learning algorithms. *Computers in Human Behavior*, 98, pp. 166-173.



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