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ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
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Editors:
Pavel Novgorodov, Novosibirsk State University of Economics and Management, Russian Federation
Matija Maric, University of Zagreb, Croatia
Luka Burilovic, Croatian Chamber of Economy, Croatia

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CONTENTS

FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: PROBLEMS AND MODELS

Aleksandr Novikov
Novosibirsk State University of Economics and Management, Russia
avnov59@yandex.ru

Irina Novikova
Russia
nov-iy@yandex.ru

ABSTRACT

The article considers the principal approaches to the relationship of financial development and economic growth, including the approach defining which of these concepts is the primary one. The article analyzes the essence and possibility of using the Keynesian (Keynesian model of dynamic equilibrium) and classical (neoclassical) model of economic growth from the perspective of the significance of the financial market. It is stated that the formation of a market economy in Russia comprises five stages. These stages show both the basic ideas of stimulating economic growth based on supply and demand, and the place and role of the financial market in each of them. It is argued that in Russia in 2020, the fifth stage of development can be identified, based on the growth of investment. The financial acceleration should become a tool for the investment growth.

Keywords: *Economic growth, Financial acceleration, Financial development, Financial market*

1. INTRODUCTION

The need to find an adequate model of economic development is frequently mentioned nowadays in scientific journals and discussed at different conferences and forums, methodological principles and techniques that allow us to correctly assess economic development are beeing justified. Also the usability of indicators that characterize it is evaluated. The fundamental question is the hypothesis that financial development is characterized by economic growth. Financial development is the state of the financial sector of the economy, which characterizes the potential of financial market participants and their ability to use mechanisms, sources of financing and financial instruments to help solve the problems of the economy as a whole, problems of regions, industries, companies and the population. Financial development itself is characterized by the presence of financial market participants, including issuers of financial instruments, investors, financial intermediaries, infrastructure and regulatory authorities. The full span of relations between financial market participants characterizes the degree of its maturity, including the ability to influence economic growth. We can say that financial market is a mechanism of the financial development. Thus, financial market is the lifeblood of the economy, delivering and redistributing financial resources. Based upon that it is necessary answer the following questions:

- Is there a correlation between economic growth and the level of financial development?
- If there is a correlation, what is primary: the degree of economic growth or the level of financial development?
- If there is no any correlation, what requirements should there be for the level of financial development so that this level allows the financial market to perform the function of the lifeblood of the economy?

Economists have been trying to answer these questions for more than 100 years, since capitalism entered an advanced stage of its development with a large number of participants attracting financial resources, including investment. The ability to attract these resources requires creating conditions for the functioning of consumers and suppliers of capital, financial intermediaries, financial market infrastructure, and institutions for its regulation.

2. DISCUSSION ON THE CORRELATION BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

It is believed that one of the first authors who put forward and justified the idea of the impact of financial development on economic growth is J. Schumpeter, who linked the impact of the financial development on economic development through the assessment of risks of accessing financial resources within the implementation of innovative technologies that determine potential economic growth [10]. His followers have conducted a research aimed at confirming the possibility of qualitative and quantitative assessment of the impact of the financial development on economic growth by assessing factors or channels through which the financial system influences economic growth [5, 11]. Later, a whole series of studies was conducted, among which we distinguish the research made by specialists of the World Bank (R. Levine, A. Demirguc-Kunt, V. Maksimovic et al.), in which the correlation between the indicators of the financial system and the rate of economic growth was empirically studied using various data. At the same time, there are also opposite points of view on the relationship between the levels of economic and financial development. For example, the Nobel laureate R. Lucas stated that the importance of the financial sector for economic growth is extremely overestimated [6]. In his opinion, finances are only one of the elements of supporting infrastructure, and their level of development is determined by the level of economic development. J. Robinson proposed the hypothesis of passive behaviour of the financial sector or the hypothesis of "financial demand" [9]. According to this hypothesis, the financial system only serves the emerging needs in intermediary services of the economy, so the level of financial development in general depends on changes occurring in the real sector. The empirical proof of the hypothesis was given by other researchers [2, 3]. Russian researchers also pay attention to the study of the role of the financial market in ensuring economic growth and financial development. So L. Grigoriev, E. Gurich, A. Savatyugin define approaches to the development of the financial market based either on minimizing state intervention in the formation of the financial market, or, on the contrary, supporting the formation of the financial market, primarily at the expense of private capital [4]. The monograph by M. I. Stolbov is of particular interest since it compares models of financial market influence in developed and developing countries, including from a perspective of typology of financial market structures. [12]. In addition, the work of M. Mamonov and his co-authors focuses on the search for tools to assess the impact of the financial market on economic growth and financial development [7]. Thus, there are different assessments of the role of the financial market in the economic development. We believe that it is true for developed markets that economic growth determines financial development, that is, it encourages institutions and infrastructure to serve the economies of developed countries if needed. For emerging markets, it would be correct to say that financial development is one of economic growth drivers, since it attracts investment, including from the external capital market. Russia is a developing country. Therefore, it is necessary to assess the significance of the financial market, which affects both the formation of the market economy as a whole and economic growth of the country.

3. ECONOMIC GROWTH MODELS

The problems of economic growth have been studied by many scientists. In the most general terms economic growth models were based on two concepts:

1) Keynesian theory of macroeconomic equilibrium;
2) Neoclassical theory of production.

These two concepts led to the development of two major economic growth models – Keynesian (later neoclassical) and classical (later neoclassical). The main ideas underlying the development strategies for Russia are as follows.

3.1. Keynesian models of dynamic equilibrium

The Harrod-Domar model is the most famous model of dynamic equilibrium built around Keynes's ideas. This model is based on two assumptions:

- the growth of national income is a target function that reflects the degree of capital accumulation, and all other factors (employment growth, the level the scientific and technical advance, improvement in the organization of production) that affect the growth of capital return are excluded;
- capital intensity does not depend on the price ratio of production factors, but is determined only by the technical conditions for the production.

According to neo-Keynesians, the investment growth is the determining factor of economic growth and its rate. In this model of economic growth, investments play an important role: on the one hand, they contributes to the national income growth, on the other – increase production capacity. In its turn, income growth contributes to the increase in employment. Since investment increases production capacity, the income growth should be sufficient to balance the increasing production capacity of society, preventing the unemployment and under-capacity losses of enterprises. According to neo-Keynesians, a permanent guaranteed growth rate in market economies is not something that is automatically achieved. They concluded that in order to achieve dynamic equilibrium, both state regulation of the economy and active participation of the state as an investor in the formation of the state's economic potential, including the development of production infrastructure, are required. Investments stimulate demand for products from the real sector industries, and real sector financing stimulates demand for investment products, including financial instruments. And since the state is able to support the population through increasing salaries, pensions and social benefits, the population also generates demand for goods and services. The combination of these factors, according to Keynesians, ensures economic growth through the direct stimulation of demand.

3.2. Neoclassical model of economic growth

The essence of the neoclassical model of economic growth is the consideration of the economic growth portfolio (many factors). For the successful development of the economy, it is proposed to recognize:

- the ability to create product value by all production factors;
- ability to determine the significance of factors in creating product value;
- calculation of the efficiency assessment and correlation dependence between the output and resources needed for its production, including the relations between the resources themselves;
- the possibility of production factors interchangeability, since the selected production factors are independent.

This approach allows us to build a multi-factor variant model of the economic development. The independence of production factors implies the identification of the most significant ones at each stage of the country's development, based on both geopolitical goals and the specific situation within a particular period. The main task is to determine the factors of economic growth, their significance, and the possibility of quantifying their impact on economic growth and thus form an economic policy based on the impact of economic growth factors on the development of the economy and society. Another important issue is the justification of a group of indicators or a separate indicator characterizing the effect of growth factors and allowing the comparison countries, regions, industries and individual companies. All these approaches are grouped on different grounds. One of these fundamental groups is the demand-based and supply-based models of economic growth. These models were implemented in Russia during the formation of the modern market economy.

4. FORMATION STAGES OF THE MARKET ECONOMY IN RUSSIA, AND THE SIGNIFICANCE OF THE FINANCIAL MARKET AT THESE STAGES

Supply and demand models are multi-factor models that reflect different characteristics of a particular country and a specific historical period of the country. One of these factors is the level of the financial market development, its features, purpose and significance of the financial market at the development stages of the Russian economy. Let us highlight the main stages of Russia's economic development.

- First stage (1990-1998) - Formation of the market economy based on the adoption of its basic principles. The financial market has been formed as a full-fledged sector of the market economy.
- Second stage (1999-2007) - Recovery growth of the Russian economy based on the model of demand stimulation. Institutional design of the financial sector. Financial market as a competitiveness factor.
- The third stage (2008-2012) - Search for a new model of economic growth based on the innovative development. Formation of internal investors. Legislative design of the financial market infrastructure with a purpose to create a global financial center and attract investors, primarily external ones.
- The fourth stage (2013-2019) - Transition to a new model of economic growth based on supply-side policy: investment, innovation, growth points, identifying of national and regional champions. Restructuring of the financial market under the sanctions in order to attract private sector investors.
- The fifth stage (2020 – present) - An attempt to launch investment growth based on national projects. The financial market as a driver of economic growth based on the financial booster policy.

How will the Russian economy develop? Will the evolutionary path of the development be adopted, or will acceleration and financial booster be activated? We support the opinion of Russian economists who argue that, despite the complexity of making radical decisions, Russia needs a financial booster [1, 8].

5. PROPOSALS FOR THE IMPLEMENTATION OF THE FINANCIAL BOOSTER POLICY

The following priority steps must be taken to serve as a financial booster:

- Financial literacy programmes for company managers and their deputies on economic and financial policy issues should be developed, allowing these individuals to distinguish between the features of investing with their own and borrowed funds;

- Based on the analysis of the investment attraction status quo, measures to encourage the use of external sources of investment attraction are to be developed, including at the expense of financial institutions with state participation;
- A pilot project with the participation of national and regional champions (companies leading in the growth and use of innovations) aimed at using financial market tools, including the use of exchange technologies, is to be identified;
- An accrual rate for companies with state participation is to be legislatively defined and incentives to establish an investment fund for private companies to be created.

The authors of the article believe that unless the financial booster and activating investment processes are implemented there is no chance to build a supply-side economy and implement the investment projects put forward by the President of Russia.

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FINANCIAL EDUCATION STRATEGY IN RUSSIA

Vladimir Balikoev
Novosibirsk University of Economics and Management, Russia
Balikoev1941@yandex.ru

Nina Protas
Novosibirsk University of Economics and Management, Russia
n.protas@mail.ru

Tamara Popova
Novosibirsk University of Economics and Management, Russia
popova.tamara1985@gmail.com

ABSTRACT

The article deals with the problems of improving financial literacy of the Russian Federation population and organizing financial education in Russia, although the relatively low level of financial literacy is a concern of all countries, even those that were the first to build a market economy: the UK, the Netherlands, France, the USA, Germany, etc. But in Russia it has a very specific character due to its historical, religious, cultural and socio-economic content. This is reflected in a significantly lower level of financial literacy of Russians. The article analyzes the concept of financial literacy in the scientific publications and notes that, unfortunately, it is understood as a desire to be able to earn money, become an entrepreneur, and accumulate wealth. The authors pose a question: what should those people who just want to be a worker, doctor, teacher, military officer, civil servant, bank employee, farmer, etc. and at the same time be financially literate, do? Therefore, financial literacy is not just a call to learn, think, and get rich. The authors carefully studied the statistical data and concluded that almost all the studies were conducted incorrectly regarding the assessment of financial literacy in different countries. Respondents answered general questions regarding business, but not financial literacy. The article presents arguments and proves that it is the state which is primarily interested in financial literacy of the country's population, because the level of financial education of people is the most important factor in the efficiency of the national economy. Therefore, the problem is an institutional one. The state should develop and implement mandatory legal norms and regulations for financial education of the population, develop programmes to improve financial literacy and financial education, identify sources of funding, and assign a government structure responsible for the programme implementation. Only in this case financial education in Russia will be successful.

Keywords: *Imperative financial education, development strategy, factor of national economy efficiency, financial literacy*

1. INTRODUCTION

The world is concerned with the relatively low level of financial literacy of the population. It is, indeed, a cause for real concern, both in countries with a developed market system and in countries that are on the path to market transformation. It is only in Germany and Switzerland, that the financial literacy rate is relatively high at 50 and 52% respectively, but in the USA it is significantly lower at 34% and in the rest of the OECD countries, the average level does not exceed 28-30%. In Russia the financial literacy rate is 4% [7]. In this regard, Russia sounds the alarm. And it is for a reason. According to various sources, 62% of Russians do not use any financial services since they are too complicated and difficult to understand. Only 45% of Russians are aware of the fact that certain amounts on their deposits are insured by the state.

Only 11% of Russians consider pension saving. Russians know almost nothing about their financial rights. Until now, 50% of Russians keep their savings at home [7]. Therefore, in Russia, the issue of financial education of the population is much more urgent than in Western countries, since Russian citizens do not have significant experience of living in a market economy and the financial literacy foundations have not been formed yet.

2. ON FINANCIAL LITERACY

However, the relatively low level of financial literacy is a concern for all countries, even for those that were the first to build a market economy: the UK, the Netherlands, France, the USA, Germany, etc. This is amazing. Indeed, the market as an economic category, a lifestyle and a method of farming, originated in Europe. In fact, the guild system which existed in France at the beginning of the 11th was the basis of the market system. Due to the development of usurious capital, it inevitably resulted in the initial accumulation of capital in the 16th and 17th centuries. Then in the 18th century there came the era of industrial revolutions in England, then in Holland, France, and etc. For more than a thousand years, the Europeans have been brought up socially, economically and psychologically in a market economy. In other words, the economic psychology of Europeans is a market psychology in its essence. The market psychology in Europe was also encouraged by the Protestant religion. M. Weber in his famous book "Protestant ethics and the spirit of capitalism" hailed the role of Protestantism in the development of market relations. And Russian economists write about this a lot [5]. Of course, we are deeply convinced that M. Weber and his followers, both in Western and Eastern countries, exaggerate the role of Protestantism in the development of the market, since the market emerged much earlier than Protestantism. But there is no doubt that Protestantism had a serious positive impact on the market development, and no economist will deny its role in the prompt formation of the market. However, the average financial literacy rate in Europe and the USA is 30%. So it is no surprise that the level of financial literacy of the Russian population, which has historically developed in a completely different social, economic and religious environment, is 4%. Given the difference in the conditions of socio-economic development of the Western countries and Russia, the level of financial literacy of the population in both countries is quite comparable. In this regard, we have a logical question if the statistical study conducted by M. Lusardi and O. Mitchell, and other statistical studies that all researchers often refer to, was correct and, in fact, what questions were offered to respondents? Here are the questions that explain such a depressing result.

1. How much money will you have in your account in 5 years if you deposit $ 100 on your account at 2% per annum?
2. If you deposit money at 1%, and the rate inflation in the country is 2%, then withdrawing them in a year, will you be able to buy more, the same or less goods and services?
3. Does buying shares in a company provide a more reliable income than a unit investment fund share?

It is obvious that to answer these questions, respondents really need to be financially and economically literate, have numerical skills, know operations with compound interest, to know what mutual funds, stocks are, etc. In other words, respondents must have at least a university degree. Can we expect that people who are not involved in business and do not have a higher education, will answer such questions correctly? We have to admit that for an average citizen of any country, the questions are too economically specific. We suppose that the questions are not correct. This conclusion is confirmed by the results of the global financial literacy survey conducted by Standard & Poor in 140 countries. According to their data, Russia ranked 24th in the world. Zambia, Zimbabwe, Senegal, Mongolia and Turkmenistan have higher positions. In 2019, a similar survey was conducted in the G20 countries, where Russia ranked 9th [10].

The results of the study on financial literacy among school students are also very surprising. For the first time, Russia took part in these studies in 2015 and ranked 10th with a result of 84%. The USA ranked 9th, while Germany, the Netherlands, Switzerland, the UK, and others did not even enter the top 15 countries. Isn't it strange? Most likely, the students' ability and skills in handling phones, smartphones, computers and various gadgets were studied. But this does not characterize the financial literacy of school students and does not even determine its level. We experienced a similar discomfort when having read the publications reviewing this problem.

3. FINANCIAL LITERACY PUBLICATIONS OVERVIEW

There is an array of socio-economic publications on this topic [3. pp. 25-26]. According to analysts, Bodo Schaefer's book "The money or the ABC of money" is the most popular book in this field [9]. The subtitle of the book is "How to make your first million". The book tells its readers how to start a business, how to invest, pay off debts and manage your income in a simple and clear manner. G. Clason's book "The richest man in Babylon" [2] describes the basics of investing, which are reduced to seven tips:

1. Start thy purse to fattening
2. Control thy expenditures
3. Make thy gold multiply
4. Guard thy treasures from loss
5. Make of thy dwelling a profitable investment
6. Insure a future income
7. Increase thy ability to earn

The book is written in the most fascinating and understandable language, in the form of a historical parable, illustrated with vivid examples. The books by R. Kiyosaki "Rich Dad Poor Dad" and R. Branson "To hell with everything, take it and do it" are also worth noting. Among Russian authors R. Yu. Akentiev's book "Financial literacy, or the foundations of personal finance management" should be noted. In general, the books are excellent. But all these books have one thing in common - they offer similar recipes: how to make money, get rich, start a business, become a successful person. This is, by all means, fine. But do they solve the problem of financial literacy of the population? Definitely not! And only one book stands out of the others. This is the book by John Kehoe "The subconscious can do anything!" [6]. He appeals to the internal capabilities and strengths of a person, to the talent, and claims that success is 20% of talent and abilities and 80% of the way of thinking, and the belief in success, and self-improvement. In this sense, this book rises above all others in its philosophical universality. All the other books mentioned above are addressed only to those who want to become an entrepreneur. Except for John Kehoe, no one asks the question, what should those people who just want to be a worker, doctor, teacher, military officer, civil servant, bank employee, farmer, etc. and at the same time be financially literate, do? Is financial literacy just a call to learn, think, and get rich? First of all, its aim, in our opinion, is to make as many people as possible, and not just those who are engaged in business, be aware of the simplest financial truths. Thus, there comes a very important question: what is financial literacy?

4. WHAT IS FINANCIAL LITERACY

Financial literacy is a certain level of knowledge, skills and abilities in the field of finance enabling to assess the situation in the market and then make rational economic decisions. This is the most general and standard definition in the scientific publications. Let us explain. Financial literacy implies the knowledge of the key financial concepts and using them in practice, managing your money correctly, keeping records of income and expenses, avoiding

excessive debt, planning your personal budget, creating savings, using savings and insurance tools, and minimizing risks. This is the introduction of important behavioral patterns into people's minds: "save money for the future", "avoid spontaneous purchases", "monitor the amount of money", "save for a secure old age", etc. This is also about the person's ability to receive, understand and evaluate the information needed for making decisions and anticipate their consequences. Financial literacy is a tool helping an individual to buy things, pay for them, be able to read and sign contracts, cope with transport and housing issues. And not to fall for the bait of Ponzi schemes, fraudulent real estate agencies, etc. Financial literacy is also a system for delivering clear and high-quality information to every consumer who needs it. This system of delivering the information is nothing more than a good system of financial education, the purpose of which is to form a national philosophy of "self-reliance", in an effort to achieve financial independence at any age. If to delve deeper into the essence of the problem, it becomes obvious that the problem in question is not only economic by nature, but also social, political, cultural, etc. The interpretation of this concept demonstrates its capaciousness and broadness. In this regard, it is very important to define the subject of the study, to specify what it is about. Is it about increasing the level of financial literacy of the country's population or financial education in general. It is essential to distinguish them in order to implement the project more efficiently. Speaking about the necessity to increase the level of financial literacy, we assume that people are already financially literate, though the level of their literacy is low, they still possess some financial knowledge. But it is not sufficient for life in a market economy and it should be increased. It is very important to realize that, in this case, people are the direct object of influence. Speaking of financial education, it is required to organize an educational process, continuous, permanent, for the entire population. In other words, the object of influence is the financial education system. For today's pensioners it will result in the elimination of financial illiteracy, for people of the middle generation and pre-retirement age, its objective is to increase the level of financial literacy, while school students and young people under 17 years of age will receive financial education. It is obvious that over time, financial education should become a universal educational process, as well as the process of primary, secondary and higher education. Therefore, it is very important to determine in what forms and sequence this education should be carried out. It is obvious that the above-mentioned financial literacy and financial education suggest variations for different age groups in terms of the complexity or simplicity of presentation, the forms of delivering them to the audience, in the volume of presentation, development of practical skills, etc. Thus, the object of financial education has been completely clarified. Then comes the question: what should be the subject? Who should be directly involved in financial education? First of all, it should be the State! Why? If today's level of financial literacy is primarily an economic issue, since it is becoming a factor of the efficiency of the national economy, the problem of financial education is an institutional problem. It is necessary to form a state structure responsible for financial education, designate a person responsible its implementation, identify sources of funding, train specialists, etc. It is obvious from the above that the concepts of "financial literacy" and "financial education" are very closely related. If only because the first is achieved through the organization of the second. But for the effective implementation of both processes, they should be fundamentally distinguished. Then the differences in resolving this important problem in Western countries and in Russia will become obvious and it will help to avoid toughtless and inefficient mimicking, as it happened in case of secondary and higher education in Russia. After all, the objects of financial education are people with different historical and cultural codes. For example, majority of Western economists believe that the main principle of rational economic activity of a person is their maximizing behaviour, and the Russian person is satisfied with reasonable sufficiency. Therefore, the low indicators of the financial literacy level of the Russians quite results from their ‘DNA code’, which was formed under the influence of

resource abundance, natural and climatic factors and a sacred attitude to the state. This is the non-bourgeois and non-market nature of their thinking, mismanagement (inability and unwillingness to count and calculate), irresponsibility, unpretentiousness, tendency to centralize power, worshiping and obedience to a person of authority [1. P. 227]. All this is embedded in the psychology of Russians as a national, cross-class, inter-corporate, inter-confessional way of developing and adopting national values. A unique feature of Russians is that they are not used to recognizing their responsibility for financial decisions, for some reason believing that this is the responsibility of the state, and it should also compensate them for possible economic losses. At the same time, they make no effort to improve their financial literacy. There is a rather unpleasant and sensitive situation of tension in relations between the state and the individual due to the wrong understanding of the country's citizens of their responsibility in economic activities. In the country as a whole, the social atmosphere is straining. Of particular concern is the fact that 31% of Russians have no experience in signing contracts. If a person deposits money into a bank or wants to obtain a loan, they are to be familiar with the terminology used in the contract. Nowadays, teaching the population to read documents before signing them and understand the consequences of the decisions made, is the task no less important than the task of improving financial literacy. That is why all countries are concerned with the low level of financial literacy. As you can see it is for a reason. The losses of the national economy resulting from it are extremely high, since financial illiteracy builds the ground for the growth of economic fraud, financially illiterate people do not use the insurance system, do not invest their savings into banks and other financial institutions, do not care about their financial well-being after the retirement, etc.

5. FORECASTS

Increasing the level of financial literacy will allow a person not to depend on the arising circumstances. A financially literate person has a personal financial plan where they control their debts. For such an idividual, a loan is a tool and source of income replenishment through the investment instruments (shares, deposits, bonds). A person insures their financial operations, therefore, they are less risky. All of the above mentioned skills should be common for an average Russian. Thus, the average standard of living will increase, as a financially literate person is looking for different sources of income. At the same time, a person develops not only knowledge, skills, and ability to earn money in various ways, but, which is equally important, it becomes psychologically stable. A person feels more worthy in their own eyes, becomes a successful person, and their prestige in society grows. Summarizing all this, we can say with confidence that a person realizes their human potential. The social burden on the country's budget is minimized. As a result, the financial responsibility and financial independence of citizens in solving these problems will grow. The social sphere will cover those areas of support that were outside of its impact and at the same time improve the service of its traditional areas. Social sphere management will be simplified and, consequently, its efficiency will increase; The level of economic culture will increase, and, consequently, the investment attractiveness of the Russian economy will grow. Financially literate, educated consumers place higher demands on product quality, have a positive impact on price policy, increase the competition and minimize inflation; Insurance, currency and securities markets will develop to a much greater extent. Overall debt in the country and risks will be reduced. Not to mention the reduction of fraud committed by unscrupulous market participants. In general, the market economy development will be brought a higher level, therefore, the country's financial and economic power will also grow. We can continue this way for a long time, but let's stop here, because it is obvious how important, profitable, useful and beneficial high financial literacy of the country's population is.

6. CONCLUSION

As mentioned above, the state is primarily interested in financial literacy of the country's population, because the level of education, including financial education, is the most important factor of the national economy efficiency. The state should introduce and implement mandatory legal norms and rules for the financial education of the population. Financial literacy and financial education programmes should be developed, funding sources should be identified, and a government structure responsible for implementing the program should be established. The economic question is being raised up to the level of an institutional problem. Therefore, it should be resolved imperatively. To do this, first of all, the state should determine the content and essence of financial education. It's not just a business issue. State programmes should take into account the psychological characteristics of Russians, not only are they financially illiterate, but also they are quite reluctant to increase this level. The state needs to make significant efforts to change the population's behavioral attitudes in the direction of greater commercialization of the people's life. So to say, to make the life of Russians more bourgeois. There is no contradiction between the spiritual and the material, since becoming an entrepreneur or wealthier person, one not only preserves their spiritual roots, but, on the contrary, acquires special opportunities for their implementation through funding the education, health care system, literature, art, etc. Financial literacy resulting from the financial education should become a way of thinking at the state level. Financial thinking will allow anyone to get rid of their misconceptions and biases. It will change the psychology of the perception of money and material goods in order to start thinking like successful people. It will bring the pleasure of managing their own money, and not being managed by it. Financial thinking teaches people to motivate themselves and look for non-standard approaches in any life situation. [4]. That is why it is necessary to structure the financial education by age groups, as mentioned above: children and school students, the younger generation, middle-aged people, and pensioners. More detailed gradation is possible depending on the region and its socio-economic conditions and national characteristics. The state should determine who will implement the strategy for the development and formation of financial education of the population, and involve science, universities, business, and citizens themselves into this process. And monitor the process tightly. Firstly, at the moment all the subjects working in this area at the improvement of the financial literacy are commercial in nature. Second, training programmes place hidden advertising of products by a particular firm or industry. At the same time, financial illiteracy of the population is actively used, especially when concluding contracts. Russians often sign contracts without reading them or skimming through them, trusting a well-spoken official or specialist. We should make a decisive break with it. Only in this case financial education in Russia will be successful.

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MOOCS IN TEARTIARY FOREIGN LANGUAGE TEACHING AMID DEVELOPING CREATIVE ABILITIES

Artyom Zubkov
Novosibirsk State University of Economics and Management,
Kamenskaya st., 630099, Novosibirsk, Russia
zubkov_nstu@mail.ru

ABSTRACT
The development of creative abilities is an important aspect in the system of training future specialists mastering higher education curricula. Creativity is an integral part of the professional activity of a future graduate. Even while studying at the university students should be creative in solving professional tasks and the cases proposed. It is, first of all, extracurricular project activities on the discipline that helps to enhance the creative potential of students. The implementation of project work helps to develop the necessary skills and abilities for the formation of creative personality. This study explores the use of massive open online courses along with creative projects of various kinds for the possibilities of developing creative abilities of students in the framework of the discipline "Foreign Language". An algorithm for the implementation of project extracurricular independent work of students is presented. A methodological model for integrating a massive open online foreign language course into the educational process of university is considered. The study also covers the content of foreign-language massive open online courses. As a result of the study, after the completion of NSUEM pilot project, a survey of economics student to study the capabilities of MOOCs and project activities for the development of creative abilities was carried out. It is concluded that the use of massive open online courses along with extracurricular project activities contributes to the development of creative abilities of students in the framework of the discipline "Foreign Language" in higher education institution.
Keywords: *massive open online course, MOOC, foreing language, tertiary, project work, creative abilities*

1. INTRODUCTION

Nowadays, the problem of the formation of creative abilities among students in the process of teaching English becomes especially relevant. In modern conditions of the educational process of a university, it is a scientific problem of social and pedagogical significance. The cardinal changes taking place in modern society put forward the need for modernization of the vocational education system, which creates the conditions for the formation of an individual with creative abilities. The number of changes in society that take place over a short period of time requires from representatives of professions in the field of economics and entrepreneurship qualities that allow them to solve professional problems in a situation of changes. In modern conditions, the creative personality of an entrepreneur is becoming demanded by society at all stages of its development. In order to survive in a situation of constant changes, as well as adequately respond to them, the entrepreneur must step up his creative potential. However, traditional approaches to the organization of economic education do not fully take into account the specifics and characteristics of the professional activity of graduates in modern society. Innovative technologies of professional training are required, addressing the problems of developing the creative personality of an entrepreneur.

2. BUILDING A RESEARCH PROBLEM

2.1. Literature Review

As for researchers, certain aspects of this issue are covered in the works of the following researchers who studied ICT as means for the development of creativity (Angarita, 2019, p. 116), creativity in entrepreneurship education (Hamidi, 2008, p. 111), blended graduate course teaching for developing creativity (Hao, 2013, p. 256), teaching creative problem solving in a MOOC (Hentenryck, Coffrin, 2014, p. 681), design of blended learning based on MOOC (Ji, 2019, p. 453), language teaching in MOOCs and the integral role of the instructor (Larreta-Azelain, 2014, p. 87), learning concepts applying creativity methods in education and industry (Nutzmann, 2019, p. 147), developing entrepreneurial abilities with ICT and technical presentations (Roy, 2018, p. 256), Integration MOOC on creativity and entrepreneurship into tertiary foreign language teaching (Zubkov, 2019, p. 53), language learners communication in MOOCs (Zubkov, Morozova, 2018, p. 182).

2.2. Basic Assumptions

Creativity presupposes the presence of abilities due to which a product is created that is distinguished by novelty, originality and uniqueness. Original and non-standard methods of solving complex and non-standard tasks involve the manifestation of creative activity, a complex individual psychological property of a person that stimulates creative activity. Creativity is closely connected with all mental processes, including imagination. Imagination is formed in the process of creative activity. Realization of professional tasks is impossible without creative imagination, which is formed in the future entrepreneur during the educational process by special means that create the conditions for revealing the creative potential of the personality of the future specialist. Creativity in pedagogy is one of the most natural forms of realizing the need for the search for true knowledge, which is expressed in the manifestation of a person's ability to make alternative decisions, generate non-standard ideas. A person's ability to integrate his skills into practical activity is a manifestation of creativity. Creativity is the individual personality traits related to the successful implementation of any activity, the result of which is a new product that has significance either for the subject or for society. The development of creative abilities is associated with the development of the student’s desire to manifest his own initiative, talent, willingness to act in non-standard situations, to fill knowledge and skills with personal meanings. It should be noted that the development of students' creative abilities in English classes will be more effective if the following conditions are taken into account:

- the need for professional skill and competence of the teacher;
- the presence of a high material and technical base of the university;
- the presence of a favorable psychological microclimate in the group,
- trusting relationship;
- classes are conducted systematically and qualified, scientifically-based guidance for the creative activities of students is provided;
- the use of a system of personally and socially significant educational and creative tasks of various levels of complexity, focused on the student’s individuality and degree of preparedness;
- refusal of command forms and methods of teaching;
- the formation and development of positive personality traits;
- use of extracurricular activities.

Thus, the process of professional training of future entrepreneurs, integrating special content, methods and forms of training, provides the conditions for unlocking their creative potential.

One of such tools is a foreign language: within the framework of this discipline it is possible to use creative tasks and exercises that require students to work independently, to display creative abilities aimed at developing imagination.

3. MATERIALS AND METHODS

In the state educational standard of higher vocational education in the field of major "Economics" it is indicated that in order to master a foreign language, an entrepreneur must know and correctly use professional vocabulary in his activity, having a vocabulary of 4.000 lexical units; know the culture and traditions of the countries of the language studied, the rules of speech etiquette; be able to conduct dialogical and monologic speech using the most commonly used lexico-grammatical means in basic communicative situations. An analysis of the requirements shows that the implementation of knowledge and skills in a foreign language does not imply skills conducive to the realization of creative abilities, which creates the need to develop means of forming creative imagination, in particular design techniques. The specifics of the entrepreneur's professional activity lies in the implementation of project activities. The design methodology promotes the development of creative imagination: conditions are created for the implementation of creative activity within the framework of a given topic, independent obtaining of the necessary information, forecasting the results and possible consequences of applying options for solving professional problems. The design culture is now included in many areas of educational practice in the form of project methods. The project method is also actively involved in teaching foreign languages. It is necessary to highlight the following forms of teaching on the development of creative skills:

- practical lessons;
- hometasks;
- use of special software;
- protection of abstracts and projects;
- business games, conferences;
- work with text, dialogue or monologue, built in an unusual way.

The most distinctive directions of students' creative activity are manifested in their hobbies. They make something from natural materials, are fond of literature, keep diaries, take photos, shoot videos, make collections, spend time outdoors and chat with foreign friends. Such hobbies can be used to enhance the cognitive activity of students in classes in a foreign language. At the teacher's request, students bring to the classroom photographs, postcards, letters, objects from their collections that enliven communication in a foreign language, make this communication more meaningful, close and interesting for its participants. The teacher's task is to deeply study and know the hobbies of students, to use them for creative expression of students in the classroom.

4. RESEARCH DATA

During the study we found that the low level of knowledge of a foreign language at the time of admission to the university does not allow full use the motivation. The student does not want to study a subject in which he "knows" quite a bit and does not see the possibilities of revealing his creative potential. Along with this, it is natural to assume that students have motivational reserves that need to be used. In this regard, the use of multimedia and ICT is a necessary communicative tool which provides the opportunity for the formation and development of interest in a foreign language among students of non-linguistic universities. Modern information and communication technologies increase interest and motivation in learning foreign languages, offering a variety of educational materials, effectively supporting the educational process, since they are a combination of all authentic teaching aids.

The use of programs of this kind makes it possible to record students' language preparedness levels, to develop assignments of varying degrees of difficulty, which makes it possible to implement the principle of an individualized and differentiated approach to teaching. At the same time, the principle of feasible difficulty and accessibility of tasks is observed, the individual pace of each student, his psychological characteristics are taken into account. In our study, we prefer the use of ICT resources such as massive open online courses (MOOCs) because of their methodological and authentic value. The development of the student's creative abilities is possible under the conditions, the observance of which subsequently develops the eccentricity of thoughts, the ability to act outside the box in various situations, and generate innovative ideas.

- Identification of personal interests
- Free choice of tasks and projects
- Creating a creative environment
- The situation of motivation
- Engaging students in the creative process
- Demonstration of results

Carrying out the study on the basis of the Novosibirsk State University of Economics and Management with students who major in Entrepreneurship, we proceeded from the conditions described above. The algorithm for the implementation of design extracurricular independent work of students is as follows. During the lessons the English teacher reveals the personal interests and talents of the students he teaches. Then the teacher compiles a selection of relevant scientific and creative events and competitions. Interested students choose an event for participation during the semester, as well as a massive open online course in a foreign language thematically corresponding to the field of the chosen event for its parallel study. For example, to participate with a report in a scientific conference, a student can choose an MOOC based on the fundamentals of public speaking or a research methodology. On the other hand, if a student intends to participate in a video contest in foreign languages, he chooses the MOOC for Video Recording and Processing, etc. Then, in consultation with the teacher and the student's extracurricular work, a creative atmosphere is created. Students' motivation is achieved by possible rewards for participating in the event, as well as additional academic rating points for intermediate certification in the discipline "Foreign Language" of the curriculum. Often, an English teacher himself is the organizer of various events, such as an essay contest, a translation contest, a scientific conference in foreign languages, etc., thereby involving students in the creative process. At the final stage, students demonstrate to the teacher and classmates the results of participating in the event, showing a specific product of their creative activity (scientific article, video, translation), commenting on the progress of the project and their impressions of it. At this stage, we see the implementation of the reflection of the participants in the educational process. Integrating MOOC into the process of teaching a foreign language at a university, we adhered to the developed methodological model. It is assumed that a foreign language teacher takes a massive open online course in advance. Then, tasks of language support are developed for a more comfortable study of MOOC materials by students. An English teacher organizes an introductory workshop on the basics of learning at MOOCs and working with online platforms. During the learning of MOOCs, students can consult with subject teachers. An English teacher also removes language difficulties for students with a low level of knowledge of a foreign language. The ability to obtain a certificate of completion an online course developed by one of the leading universities in the world serves as a motivating factor for students studying the discipline "Foreign Language". The table below shows the creative activities (type of activity) and MOOCs selected by students, as well as the content of training in a massive open online course.

Creative event	MOOC, organization	MOOC content
Scientific report	Introduction to Public Speaking, University of Washington	Methods of illustrating and delivering of ideas
Essay contest	Getting Started with Essay Writing, University of California	Compare/Contrast Essays Cause/Effect Essays Argument Essays
Foreign language olympiad	Grammar and Punctuation, University of California	Verb Tenses and Conjunctions, Compound and Complex Sentences Commas, Parallel Structure, and Sentence Variety
Video contest	Fundamentals of Digital Video and Image Processing, Northwestern University	Signals and Systems, Fourier Transform and Sampling, Motion Estimation
Translation competition	Principles and Practice of Computer-Aided Translation, Peking University	Corpus-based Translation, Electronic Dictionary, Reference Book for Translation Practice
Writing a scientific article	Writing in the Sciences, Stanford University	Grammar, Medical Writing, Science Communication, Writing
Presentation contest	Presentation Skills: Public Speaking Project, Tomsk State University	Script, Slides, Preliminary Presentation, Live Delivery

Table1: Correlation of creative activities with MOOC content selected by students

During the study, the students' creative abilities were recorded in such manifestations as:

- sustained interest in knowledge, expressed in the manifestation of a desire to study increasingly complex phenomena and processes;
- need for creative assignment, high personal interest;
- a high level of production of a new, exemption from imitation;
- fluency of thinking, ease of completing tasks, the expression of a large number of ideas;
- a high level of production of a new, exemption from imitation;
- fluency of thinking, ease of completing tasks, the expression of a large number of ideas.

Conducting classes and extracurricular activities in an original, non-traditional form is aimed not only at the development of the main types of speech activity, but also at the formation of critical thinking, memory, communication skills in the team and creative initiative of students. The creative nature of the tasks offered during various events contributes to better memorization and assimilation of various grammatical phenomena, the expansion of the vocabulary, the development of monologic and dialogical speech and opens up great opportunities for individual work of students. An analysis of the results shows that there was a significant change in all components of creative abilities (fluency, flexibility and originality, a sense of novelty, criticality, and focus on creativity). This allows us to conclude that inclusion project extracurricular work and MOOCs contributed to the activation of creative abilities and had a positive impact on their development as a whole. After conducting experimental training, we conducted a survey of students aimed at identifying the possibilities of using extracurricular project activities and the parallel study of MOOCs as part of the study of the «Foreign Language» discipline for the formation of creative abilities. 95% of students believe that participating in such contests can contribute to their creativity. A preliminary study of MOOC materials was useful for 94% of respondents. Only 90% believe that while learning a foreign language in non-standard ways it is possible to develop creative abilities in themselves. 90% of business students believe that speaking a foreign language they will be more creative in their professional decisions.

However, 6% of students consider it impossible to use creative skills acquired in English classes in their professional field. All students who participated in experimental training want to repeat this experience once more.

№	Poll question	Yes	No	Difficult to answer
1	Do you think participating in such contests can improve your creativity?	95%	0%	5%
2	Was a preliminary study of MOOC materials useful for you?	94%	6%	0%
3	Do you think that while learning a foreign language in non-standard ways it is possible to develop creative abilities in yourself?	90%	3%	7%
4	Is it possible to apply creative skills acquired in English classes in your professional field?	94%	6%	0%
5	Do you think that an entrepreneur who speaks a foreign language will be more creative in his professional decisions?	90%	6%	4%
6	Would you like to participate in such training again?	100 %	0%	0%

Table 2: Questionnaire results after the experiment

5. CONCLUSION

We believe that the "Foreign Language" discipline can be the most important factor in the formation of the creative personality of a future entrepreneur due to its significant creative potential based on communication and developing a professional culture, self-awareness and the general competence of future specialists. Further formation of creative abilities based on MOOCs and project extracurricular activities in a foreign language will contribute to the development of creative abilities of student entrepreneurs and will significantly increase the competitiveness of future graduates in the labor market.

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ANALYSIS OF THE DEVELOPMENT OF THE SHADOW SECTOR OF ECONOMY IN RUSSIA

Asiyat Magomedovna Kipkeeva
Associate Professor at Department of Economics and Management,
Federal State Budgetary Educational Establishment of Higher Education,
"North Caucasian State Academy"
Cherkessk, Karachay-Cherkess Republic, Russia
asya-Ki@yandex.ru

ABSTRACT

The article provides a comprehensive concept of the shadow economy, currently used in international practice. The main incentives for the shadow activity of business entities in advanced countries are investigated: taxes, payments to the social security fund, and so on. The article analyzes the degree of the shadow economy in the Russian Federation, as well as informal employment by gender and age composition. The analysis of the level of gross domestic product per capita (GDP) is carried out. Data on the number of people employed in the shadow sector as a percentage of the total population for the study period is also presented. Information on the scope of the shadow economy that are not taken into account by Rosstat, is introduced. The main reasons for the formation and development of shadow business in the country are identified. It should be noted that the methods of combating the shadow economy have not had the desired effect so far, which suggests that the causes of the shadow economy have deep roots and are outside the field of economic relations. We have concluded that the causes of shadow economic relations are behavioral characteristics of people, socio-psychological as a result of a low level of culture, lack of trust in society, specific characteristics of mentality, etc. Also, the main causes for the formation and growth of the shadow sector of the economy in Russia include economic (high tax obligation), political, administrative, legal and social.

Keywords: *Gross domestic product (GDP), informal employment, number of employed people, shadow sector of the economy, scope, taxes*

1. INTRODUCTION

The shadow economy (informal economy or hidden economy) is an economic activity that is hidden from state control and accounting to minimize costs. Income from business activities is carefully hidden and is not a taxable economic activity. For the first time, the problems of the shadow economy attracted the attention of researchers in 1930. During this period, some researches deal only with the criminal side of such activities. Scientific research in this field appeared in the 1960s and 70s. One of the first serious works was the book by P. Gutman (USA) "Underground economy" (1977). The work indicated the unacceptability of ignoring the scale and role of the shadow economy in the world. The beginning of systematic research of the shadow economy abroad is associated with the formation of a new direction of economic science - the economic theory of crime. In Russian practice, interest in the shadow economy was shown in the '80s. This phenomenon was caused by its increase in the branches of the national economy and criminalization. Historical analysis shows that the shadow sector is characterized by criminal acts and non-economic seizures. By the time of the collapse of the USSR, the shadow economy had become an established economic institution of Soviet society [1, p. 28]. The main stage in the development of the shadow economy is 1994 when the redistribution of state property was carried out.

2. ANALYSIS OF THE DEVELOPMENT OF THE SHADOW ECONOMY IN RUSSIA

The main reasons for the development of the shadow economy in Russia include:

1) High tax burden. Practice shows that increase the taxation lead to a more complex mechanism for registering a business, the greater the level of leaving the business in the shadows. This phenomenon is caused by the fact that organizations hide their income and increase their net profit.
2) Corruption of civil servants and law enforcement agencies. The more complex and more bureaucratic procedures, the more profitable for government employees. Having a certain amount of power, state employees deliberately slow down the process of paperwork to exert pressure on law-abiding citizens who are forced to follow the well-established system.
3) Crisis phenomena of the national economy, accompanied by a high level of unemployment, low wages. This phenomenon also encourages the lion's share of the population to carry out economic activities without registration with the Federal tax service of Russia (FTS of Russia).
4) The imperfection of the state mechanism for combating economic crimes.

Along with the negative aspects of growth and development of the shadow sector of the economy, it is necessary to consider the positive ones which include:

1) Participants in shadow relationships have the opportunity to earn additional income and increase their income;
2) The shadow economy stimulates the growth of employment;
3) Prevents from bankruptcy.

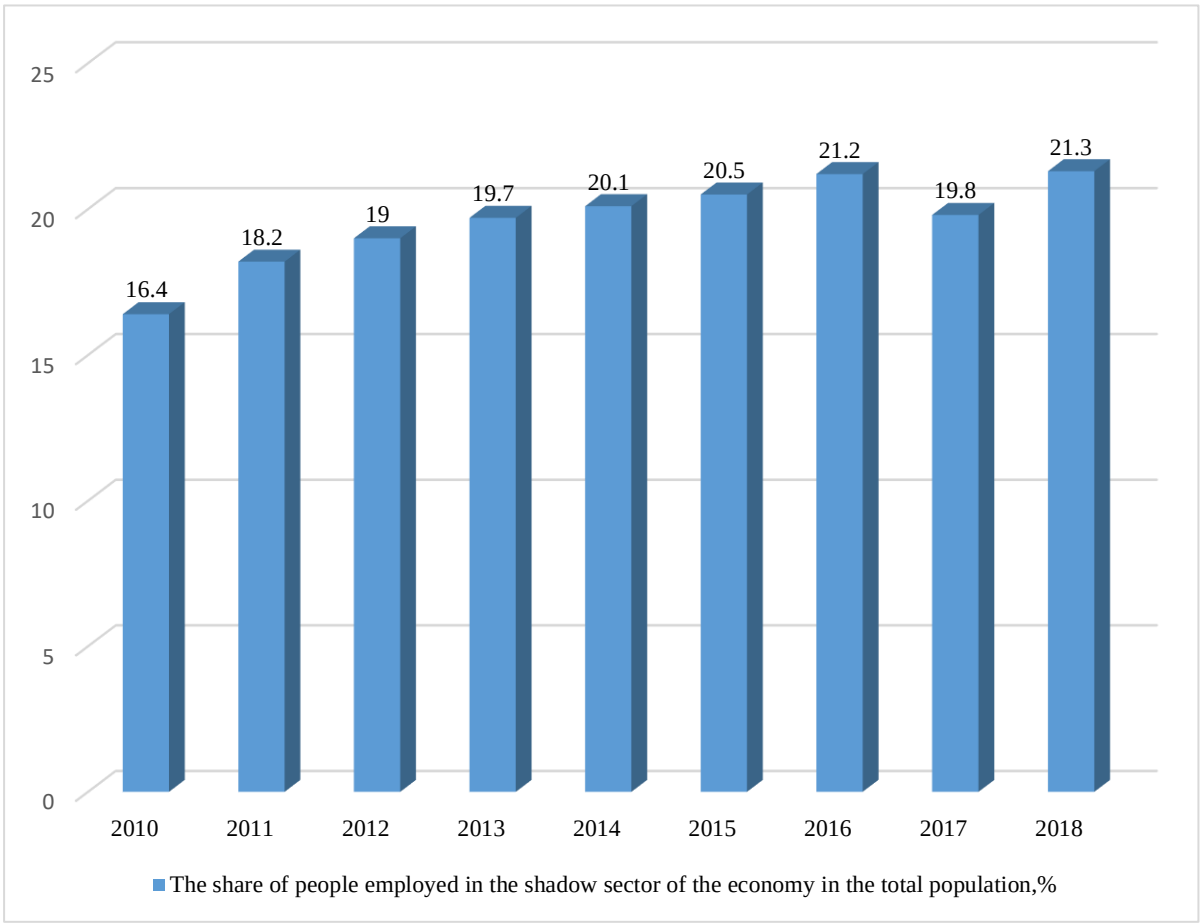

Figure 1: The number of people in the shadow sector of the economy from the total number, %

Figure 1 shows the data of people employed in the shadow sector of the economy from the total population for 2010-2018. According to figure 1, the number of people employed in the shadow sector is steadily growing. The maximum growth of employment in the shadow sector is observed in 2016, which amounted to 21.2 % of the total population, then in 2017 there is a slight decrease, in 2018, the level of employment in the informal sector was 21.3% of the total population. According to official data from Rosstat, the level of employment in the informal sector reached 21.3 % in mid-2019. Analysts and experts attribute this phenomenon to the decline of small businesses, the migration of entrepreneurs to sole proprietors, or the self-employed. According to official data from Rosstat, at the end of the second quarter of 2019, every fifth person is employed in the shadow sector of the economy, that is, 15.25 million people. More men (8.36 million) than women (6.89 million) work in the informal sector. The largest increase in informal employment was recorded in the republics of the North Caucasus (SC), namely in:

1) the Chechen Republic has 65.6 % of the total employed population.
2) The Republic Of Ingushetia - 50 %;
3) Kabardian-Balkar Republic (KBR) - 49.6 %.
4) The Republic Of Dagestan - 43.7 %.

This phenomenon is caused by an insufficient number of official jobs. But it should also be noted that there are no unemployed people in the regions of the North Caucasus. It follows that the majority of the population works in the informal sector and do not have official employment due to the excessive tax burden on small and medium-sized businesses. Rosstat also published which industries are most deeply in the shadows. The largest share of production is observed in real estate, trade, construction, and agriculture. The share of real estate transactions in the informal sector is 6.3 % of GDP or half of the country's entire grey economy, in agriculture, hunting, and fishing - 1.4 %, the same situation in retail and wholesale trade. As a rule, the shadow sector grows where the tax burden is high, the pressure on the state's business is high, and the level of poverty is high [2, p.21].

Years	GDP in billion rubles	GDP in nominal value, billion dollars	GDP in PPP, billion dollars	Inflation, %	Average annual rate
2010	46 308,5	1 480	3 095	8,78	30,36
2011	60 282,5	1 885	3 227	6,10	29,39
2012	68 163,9	1 954	3 338	6,58	31,08
2013	73 133,9	2 097	3 492	6,45	31,85
2014	79 199,7	1 849	3 558	11,36	38,61
2015	83 387,2	1 326	3 473	12,91	61,07
2016	86 148,6	1 267	3 745	5,50	67,00
2017	92 037,2	1578,45	4 000	4,00	58,3086
2018	103626,6	1571,85	4168,884	5,00	62,9264

Table 1: Gross domestic product of Russia for 2010-2018, (nominal value, ruble, dollar)

According to table 1, the following conclusion can be drawn. During the analyzed period, the inflation rate tends to decrease. The maximum increase in the inflation rate is observed in 2015, which amounted to 12.91 % of the GDP level. Then there was a decrease in the inflation rate to 5 % of the GDP level. The average annual exchange rate of the dollar for the study period tends to increase. So, in 2018, the average annual exchange rate of the dollar was 62.9264 rubles.

3. CONCLUSION

The research shows that the shadow economy is one of the most difficult problems in Russia. The shadow sector of the economy hurts all spheres of life of the country's population. In this regard, the state should make every effort to bring enterprises out of the shadows, exerting influence through the taxation mechanism.

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POVERTY TRAP AND SMALL BUSINESS

Dmitriy Lapov
Novosibirsk State University of Economics and Management
Novosibirsk, 630099, Kamenskaya str. 56, Russia
lapvd@rambler.ru

ABSTRACT

This article discusses the issues of small enterprise development related to investment behavior and household capabilities. The issue of small enterprise development is relevant worldwide. It is small business that is the basis of economic advancement, stimulates employment and improves the quality of living within the territories. Various small enterprise support programmes are being implemented in many countries around the world. However, this is not always enough to get the desired result. Despite the fact that the providing consulting and educational services often gives a higher income from the funds spent by the state, in most cases there are objective reasons that impede the implementation of business initiatives. With rare exceptions, capital is required to start and run a business. In general, the employee does not have the opportunity to accumulate the necessary savings to invest, so social stratification of the population and insufficient development of small business are inevitable. To analyze this situation, we can use the Kiminori Matsuyama model, which describes the investment behavior of households, given that the capabilities of the current generation are the result of a long historical process and are caused by the behavior of both current and previous generations. However, this model is presented in a general way and does not enable to obtain objective facts about the problems of creating and running a business. The supplements to the Kiminori Matsuyama model proposed in the article adjust it for entrepreneurship. This model takes into account changes in incomes and expansion of credit restrictions for households that have implemented the investment project, taxes paid by households, the dependence of the value of the investment project on the income it generates, the increase in value and the exhaustion of investment projects.

Keywords: *business training, households, poverty trap, small business, social stratification*

1. INTRODUCTION

In the context of the current crisis, the theory of rational behavior of the individual becomes particularly important to study the economic behavior of households. Household income can be divided into labor and non-labor ones. Non-labor income can include income obtained from capital, wins, passive income gained with renting property, etc. household Labor income is often associated with income generated with employment. But the income gained with employment does not always mean employee's labor contribution. Therefore, income from employment, as well as non-labor income, cannot always be called fair. Unfair allocation of wealth in society led to the unfairness of unearned income. The real economy is significantly different from the theoretical models of perfect competition. Equality of entrepreneurs is not feasible. Capital is built up by generations, enabling its owner to increase production and capture more and more markets. Institutions of ownership, technology, licenses, patents, advertising, limited to resources access and other barriers to enter the market reinforce inequality. Moreover non-market methods of competition, including illegal ones, are extensively used in real life. As a result, all entrepreneurs are in an unequal position, significantly determining the success opportunity for each of them. Most households cannot afford income generating activities. The unfairness and ineffective allocation of employment earnings are based on the dominant position of the employer. As the total labor productivity grows and capital intensity of production in the of goods increases, labor is replaced by capital.

This means that the role of human labor as a production factor is decreasing and will decrease in the foreseeable future. It is particularly topical for those areas of activity of quite high labor supply. Employment is becoming a more important value for the employee than the level of remuneration of the work. Therefore, the employee is inclined to agree to the terms of the tenant, even if they, in his/her view, encroach on his/her rights. The main reasons of the unfairness of labor remuneration of an employee can be described as follows:

- market mechanisms create inequality in the remuneration of employees of various professions and sectors of the economy;
- the market power of the employer reduces the bargaining power of workers in establishing working conditions and pay level leading to:
  - subjective assessment of labor contribution and unearned nature of remuneration;
  - the employer`s charging the employee for his/her own activities.

As for consumption, there are also growth factors for social stratification of the population. Monopolization of markets, excessive government intervention in the economy and quasi-taxes reduce the total utility of the goods consumed by households. The appreciation of goods most negatively affects the poorest citizens. Acceleration of social stratification of the population was caused by inefficient and unfair allocation and withdrawal of incomes. This situation cannot be called fair and efficient from the point of view of the social and economic development of society. Poverty affects all aspects of social life, reducing the potential to improve well-being. However, in addition to social causes, poverty is economically caused by budget constraints. In the literature, this phenomenon is called the "poverty trap". The unavailability of requisite capital to set up a business is the primary reason for the lack of small business development in many countries of the world. At the same time, small business occupies an important place in the economy, as it increases competition, availability of goods for society, generates employment, and often occupies precisely those production niches that large firms are not interested in. It is improbable to imagine a balanced social and economic development of society without small enterprises, so the state should take measures to support small businesses.

2. POVERTY TRAP

To describe the causes of social stratification of the population, let us consider the Kimonori Matsuyama poverty trap model. This model assumes a certain investment project worth F, restrictions on the amount of the loan provided (λR) and two strategies of investing household behavior (ω_{t+1}),, each depending on the amount of resources inherited by the household (ω_t):

$$\omega_{t+1} = \begin{cases} \beta(y + r\omega_t), & if:\ \omega_t < \omega_c \equiv F - \lambda\dfrac{R}{r} \quad (2.1) \\ \beta(y + r\omega_t + R - rF), & if:\ \omega_t \geq \omega_c \equiv F - \lambda\dfrac{R}{r} \quad (2.2) \end{cases}$$

Where,

ω_c – minimum amount of wealth to invest the project.
β – share of non-consumed inheritance;
y – household income;
R – investment project income;
r – deposit interest rate.

Also, this model assumes that R> $r\omega_t$, otherwise investments in the project will not be made.

This model enables to describe a situation when success in improving the welfare of a household depends on the accumulated inheritance and credit restrictions. Such a situation may occur in the areas of marketplace, education, migration, etc. whenever it is essential to invest significantly to overcome the current state. The considered investment project does not have to be related to business. For example, education investment can have similar effects and change the fate of more than one generation. However, the problem of social inequality is associated primarily with the issue of the efficient use of labor and capital. Considering the poverty trap in terms of starting a business, it should be noted: if $\beta(y + r\omega_t) > \omega_t$, the next generation will inherit more than the previous one, and sooner or later the household will accumulate the amount required to implement the investment project. The value of business assets is not permanent in a real economy. Inflation can devalue the accumulated household resources regarding the investment project. According to the free market laws, the assets of outstripping demand will rise in price foremost. To explain this statement, we consider what additional benefits will be gained in the future by the household implementing the investment project. The performance of the substitution effect will encourage the household that implemented the investment project to refuse to receive labor income (y), substituting it with a more preferable income of investment projects implementation (R). Then the inheritance owing to the next generation will be determined by the formula:

$$\omega_{t+1} = \beta\,(\sum_{i\to t}(R_i - rF_i - N_i) + r\omega_t \qquad (2.3)$$

Where, N_i – taxes paid for the corresponding period.

Increasing of current income and inheritance from generation to generation will enable a household to invest in larger projects, as well as to invest in several projects at once. Thus, it may differ significantly from R_{i-1}, and F_i from F_{i-1} . The entrepreneur's investment earnings will increase as the net investment increases, while the labor and Bank deposits income will remain practically constant. As the rate of return of the investment project we are considering is higher than the loan interest rate, if a decrease in the share of rental income (y) in the inheritance(ω_i), the investment will give the household implementing the investment project a greater increase in wealth. The shares of capital and labor in output change slowly. Therefore, when racking up net investment, the entrepreneur receives almost constant returns from them, increasing his/her well-being. The labor supply of the household is limited by physiological capabilities, and therefore income gained by hiring cannot be increased, unlike entrepreneurial activity income. The offer of investment projects in the business sector is much more limited than the offer of money. As investment projects are implemented, their number decreases. The emergence of new investment projects has factor limitations and can only depend on the development of technologies, access to new markets, growing goods differentiation and other cutting edge solutions. Owners aspire to get as much earnings as possible by selling or leasing their assets, thus being encouraged to increase the cost of offering their goods and, above all, the projects of higher capital returns. Therefore, the cost of a business project (F) depends on the amount of return it generates(R) and the time it takes (t).

$$F = f(R, t) \qquad (2.4)$$

The income increase of the household that implemented the investment project has the result of an increase in the credit limit. Loan proceeds accelerate accumulating a minimum amount of wealth to invest. Household income from hiring (y) is created as part of a business investment project. At the same time, if the investor cannot influence the offer of investment projects, then he has market power in the labor market.

Therefore, while implementing an investment project in the business sector, the household will seek to reduce the overall costs by reducing the remuneration. The decrease of labor role as a production factor can be shown by data on Russian economy over the past three years (Fig.1).

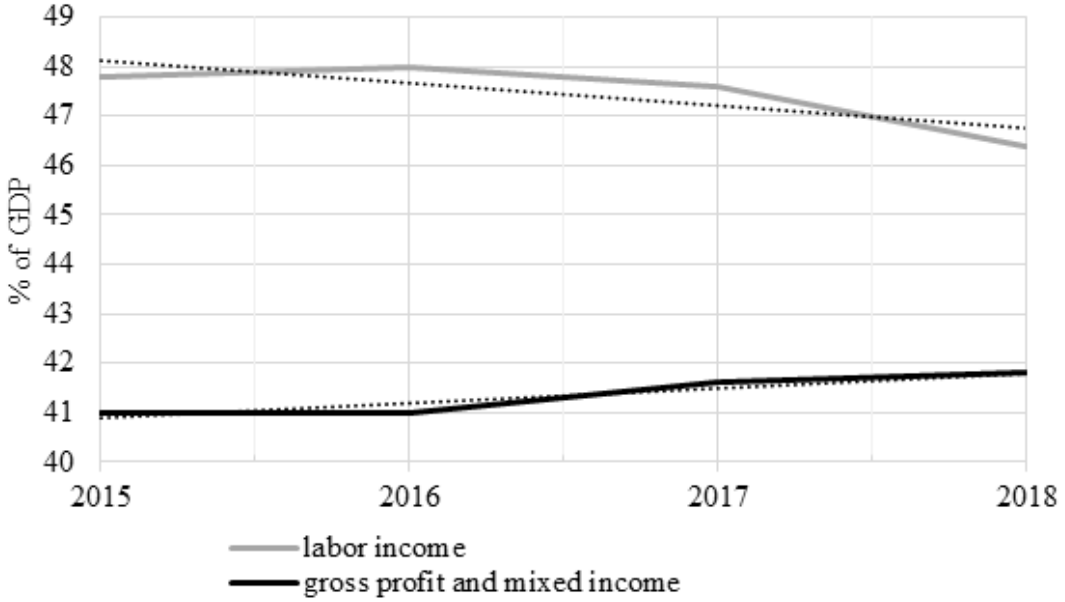

Figure 1: Pay, profits and mixed incomes in the Russian GDP structure (Source: Federal State Statistic Service of the Russian federation[1])

Thus, investors are increasing their business returns faster than the remuneration. The implementation of an investment project by a household has a multiplicative effect enabling it to gain and increase its advantages. The above mentioned enables to describe the conditions for emergence and growth of social stratification of the population called the " poverty trap»:

1. Credit resources are limited, both by the borrowing interest rate and the loan amount.
2. The return on the investment project exceeds the borrowing interest rate.

$$r < \frac{R}{F} \qquad (2.5)$$

3. An investment project becomes more expensive faster than the reserved wealth of households that have not implemented the investment project.

$$\beta(y + r\omega_t) > \frac{\Delta F}{\Delta t} \qquad (2.6)$$

4. The difference in the share of welfare consumption (β) accumulated by households that implemented and have not implemented the investment project is not significant.
5. The supply of investment projects is limited and insufficient to meet the demand of all households.

Fulfilling the above conditions leads to preventing some households from managing to improve their well-being by setting-up a business.

[1] Federal State Statistic Service of the Russian federation (27.01.2020) URL: http://www.gks.ru/free_doc/new_site/vvp/vvp-god/tab34b.xls

3. IMPACT OF THE "POVERTY TRAP" ON SMALL ENTERPRISE DEVELOPMENT

The issue of small enterprise development practically shows a situation called “Poverty trap". It is the lack of resources that is the main problem for small business development. A lot of opportunistic people have to abandon their entrepreneurial incentives because they do not have the opportunity to accumulate enough finance in the foreseeable future, as well as to overcome credit limits. Investment projects limit challenges investors to implement first of all the projects that will provide the greatest return on capital. This is due not only to the desire to recoup the investment as fast as possible, but also to the realizing that these projects can be implemented by others. Therefore, the number of high profitability business projects decreases over time. Imbalances in the resources distribution and the market power of goods producers make less successful producers of economic goods leave the market. More successful producers of goods appropriate the released factors of production thus intensifying the imbalances and taking even more market power. More successful producers of economic goods have the opportunity to buy production factors from less successful producers, and those, in turn, are more likely to hand over their assets. Just as households compete for investment projects, firms compete for limited resources. Increasing the size of business or expanding can also be limited by accumulated wealth and credit restrictions. Therefore, households that have implemented investment projects can face the same problems as households that have not implemented an investment project, when developing their business further. The temporary dynamics of the number of small business entities in Russia has shown their reduction amid a growth in the volume of investment in fixed capital (Fig.2).

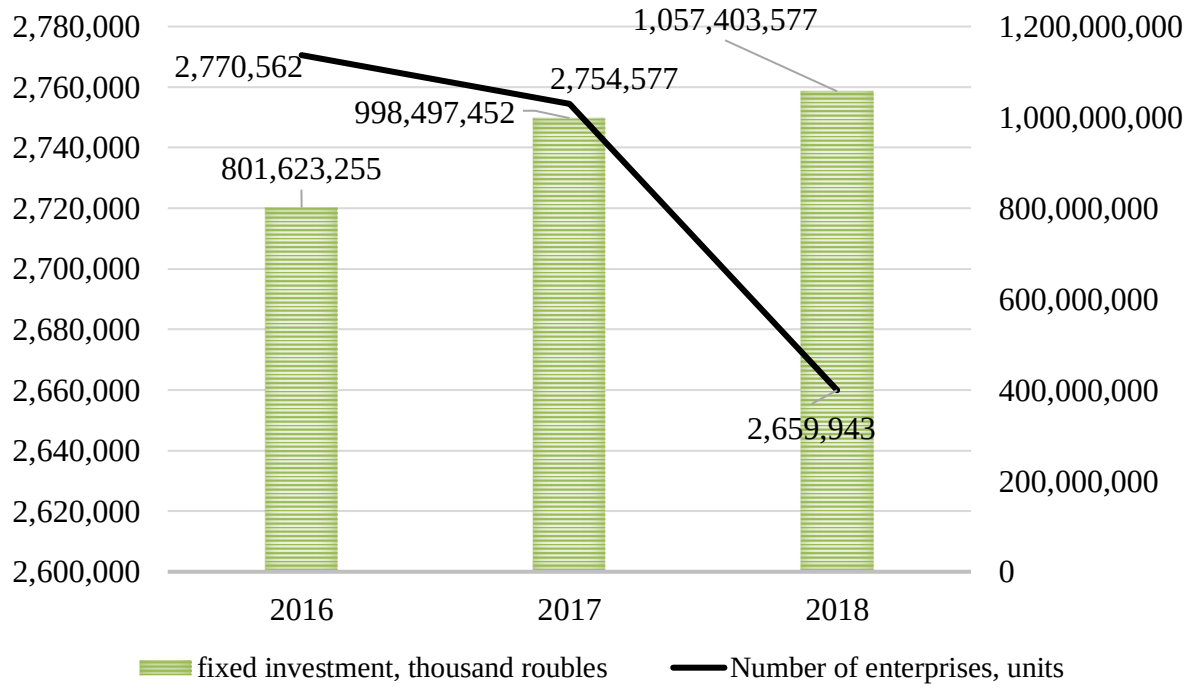

Figure 2: Dynamics of the main activity indicators of small businesses in Russia (Source: Federal State Statistic Service of the Russian federation[2])

The graph in Fig.2 shows the dynamics of investments in fixed assets and both the increase in the cost of investment projects and the use of more resources by existing businesses.

[2] Federal State Statistic Service of the Russian federation (27.01.2020) URL: https://gks.ru/free_doc/new_site/business/inst-preob/tab-mal_pr_m.htm

Many entrepreneurs phase down. First of all, those producers of economic goods who are able to make the necessary capital investments manage to keep the business going. Therefore, industries and territories do not develop proportionally. The most profitable types of business are becoming drivers of economic growth, accumulating more and more capital. Thus, the barrier to entre markets goes up, and stratification of households in terms of welfare increases. A similar situation is observed in a number of countries of the world. Over the past three years, there has been a steady decline in the number of small enterprises with up to 50 employees in countries such as India, Germany, Italy, Poland, Mexico, the United States, Canada, Australia, Ireland, Spain, South Africa, and the United Kingdom. Upon average, the share of such entities in these countries decreased by 2.69%. Competition makes less successful producers of economic goods whose expectations were not met leave the market. Investment projects are becoming more expensive, while the number of such projects is decreasing. The capital intensity of the business is growing. Less appealing projects are being implemented as investment projects become exhausted. Moreover, these projects are less appealing, primarily because of their greater riskiness or obviously lower profitability. There is no information about the profitability of such projects, which motivates households wishing to improve their well-being to implement these projects. In addition, it is a complicated task to estimate the necessary investments and the scale of production of economic goods. The desire to implement an investment project is not enough to come out on top. Investments made may not give the desired level of return on capital. In such conditions, the maintenance of the achieved level of well-being becomes a much more vital task. Therefore, one of the most efficient methods to support start-up entrepreneurs is management consulting and obtaining economic education. This type of support gives the greatest return on resources spent by the state. The expertise and help of experienced consultants, even without the personal experience of a first-time entrepreneur, can help avoid losses and ruin. However, even a very high-quality business education does not enable to overcome the poverty trap. The main objective of business education is to teach entrepreneurs how to run their business and help them avoid losses. It is the fear of suffering losses, thereby lowering the level of well-being that is the main reason that a very small number of households decide to start doing business. If households did not exercise due diligence, this would cause as much harm to society as a low level of business activity. In this regard, it is confident to state that the assessment of business opportunities should be one of the main challenges of business education. Knowledge in the field of business management is also keynote. At the initial stage of conducting a business, the owner `s personal participation in its management, motivation and entrepreneurship can be more vital for success than complex accounting and planning systems. The ability to overcome difficulties can help make up for the lack of experience and knowledge, but as the business develops, this will clearly not be enough. One will need to tackle more and more complex problems, it will become more difficult to control the business, and the role of hired managers will increase. As financial management, sales, personnel, marketing, etc. will become particular areas demanding a narrow specialization ttherefore, entrepreneurship as a profession requiring a comprehensive economic and managerial education. However, knowledge and experience cannot substitute capital. There are no universal solutions. Not all factors are interchangeable and transformable. If in one case consulting and providing educational services is an efficient measure to support business, in another case they may backfire. It is not prudent to compare business support measures by efficiency without taking into consideration the specifics of each particular business entity. Support programs for small businesses should combine a wide range of measures, including providing producers of economic goods with production factors. The poverty trap tends to be an objective problem that cannot be overcome without external funding. Capital is the basis for the distribution of income and resources in society. Capital is the main source of inequality and specifies the entire economic structure of society.

There is no economic growth without an increase in capital, and there is no development without its proper allocation of capital. The experience of 28 EU countries has shown that the development of small businesses can reduce unemployment and social inequality. Thus, according to statistics of 2018, micro-business generates 29% of jobs in the EU, small business-20.1%. In general, small businesses create 56.4 % of the added value of the EU economies. The high social efficiency of small business can be explained by its higher labor intensity in comparison with large business. The investments made by the state to support small businesses enable to get a greater return in employment growth and reduction of social tension, in comparison with similar measures taken to support large businesses. However, this does not mean that the development of small businesses is the main task of society and any business is equally useful for society. Financial support of business has two drawbacks to consider:

- increasing social stratification of the population;
- budget expenditures increase;

Therefore, measures for financial support of small enterprises should be aimed at supporting socially important types of business and the development of those territories that are in need of it most.

4. CONCLUSION

In conclusion we want to note that the Kiminori Matsuyama model has significant assumptions, since it does not take into account the difference in consumption of accumulated wealth, taxes, exhaustibility of investment projects, etc. At the same time, this model thoroughly describes l the problem that every household faces when it intends to increase its level of well-being by implementing the project. Most of all, this problem is crucial for households willing to set up their own business. Market mechanisms do not provide equal opportunities for households, since each particular situation in the economy has its own prerequisites being a consequence of historical processes. The heterogeneity of investment projects in the business sector, the dependence of the cost of implementing business projects on their expected profitability and the limited supply of resources required to implement such projects make them inaccessible to most households. Low entrepreneurial activity caused by limited resources leads to imbalances in the development of territories and sectors of the national economy, creates injustice and inequality in consumption, and social production inefficiency and of resources applications. To mitigate the imbalances in economic development, the state should implement programs to support small businesses, which would encompass a wide range of measures, including training and financial support for entrepreneurs. In addition, only producers of economic goods implementing socially significant areas of business can be recipients of grants.

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THE ROLE OF PSYCHOLOGICAL KNOWLEDGE AND SKILLS FOR SOCIAL ADAPTATION OF STUDENTS IN ECONOMIC AND MANAGEMENT PROFILE

Dmitry V. Neshchadim
Associate Professor of Psychology, Education and Law,
Novosibirsk State University of Economics and Management,
Novosibirsk, Russian Federation
d.neshchadim@mail.ru

ABSTRACT

The modern world is quickly changing. It requires a man to have a very flexible response and rapid adaptation to a situation. Quick changes affect all the spheres of human activity (economy, social activity, politics, spiritual order). At present, people are keenly aware of the growth of economic risks and natural and man-made disasters and catastrophes, which make our lives extremely unstable, unpredictable, and vulnerable. It suffices to recollect the world-wide crises of 2008 that affected all the countries all over the world. The world is losing its clear boundaries and becoming more virtual and intangible. The currency is depreciating and is replaced by new analogues (e.g., cryptocurrency). According to several studies with the elderly persons in all the industrialized countries, a man is experiencing difficulties in self-identification and in the emotional-volitional sphere, which indicates the widespread psychological problems that require treatment. How can a person not only survive in the modern economic realities but also maintain his psychological health, activity and become successful both in everyday life and at work? Our study examines the various aspects of psychology, both scientific and practical discipline, aimed not only on the way to deal with everyday exertion and stress but also provides a unique tool for a deeper understanding of himself with regard to unconscious motives, desires, fears and repeating difficulties with regard to his desires and well-being). There is a general vision of how psychological disciplines (particularly psychoanalysis, clinical psychology and others), as well as role therapy and trainings on how to work with imagination, can successfully help the economic to master their own competency and reduce the risk of premature professional burnout in the future. The experience of domestic psychologists and foreign colleagues can be successfully used in the process of education and training of students and specialists on how to adapt more easily and quickly to the challenges of the changing world.

Keywords: *economy, emotional burnout, stress, clinical psychology, psychoanalysis, role therapy*

1. INTRODUCTION

In the current economic realities, it is often difficult to keep up your psychological health and activity, both at home and at work. Our study examines different aspects of psychology, both scientific and practical disciplines, aimed not only at how to cope with everyday intenseness and stress, but also to provide a unique tool for a deeper understanding of yourself in the current economic situation and relations (e.g., understanding of one's unconscious motives, desires, fears, and recurring difficulties in welfare support). There is some general vision of how psychological disciplines (particularly psychoanalysis, clinical psychology, and others), as well as acting (role-playing) trainings aimed at the imagination, can successfully help economic students to master their professional competencies and reduce the risk of premature professional burnout. The experience of domestic psychologists and foreign colleagues can be successfully used in the process of education and training of specialists who will be able to adapt more easily and quickly to the challenges of the changing world.

2. THE IMPORTANCE OF PSYCHOLOGICAL KNOWLEDGE FOR ECONOMIC STUDENTS

Nowadays, it is not necessary to explain to a present-day man who Sigmund Freud is and what is the value of his psychological research for mankind all over the world. However, until now, Freud's writings have been bypassed and unfairly criticized. This Viennese psychiatrist and thinker in the late the 19th century developed and proposed to the public his scientific method of testing the psyche, and later the mental therapy called psychoanalysis. He was the first in history since the ancient Greek thinkers - Socrates, Plato, and Aristotle - who explained the reasons for the formation of neurotic disorders not from the point of view of the biological nature of the psyche, but from the point of view of intangible theory (Reshetnikov, 2018). He was the first to postulate the existence of the unconscious and pleasure principle, which mainly determine the motives and behavior of each person. He also developed a theory of sexuality according to which all psychic phenomena should be interpreted based on the sexual instinct in a human beings. It is safe to assume that psychoanalysis helped the Puritan Victorian society of the century before last enter the modern era of the sexual revolution. Besides, Freud was the first to offer to be attentive to dream content and to interpret dreams from the point of view of internal personal conflict, limited by suppressed desires and prohibitions (anxiety and fear of violation). Here is his well-known popular quotation: Dreams are the royal road to the unconscious' (Freud, 2010). The art of late modernism and postmodernism has fully absorbed the views and ideas of psychoanalysis based on the phenomenon of dreams. For example, surreal paintings of Spanish artists - Salvador Dali and Remedios Varo Uranga – exactly may be called vivid examples of such art of "dreams." Monumental book by James Joyce Ulysses can be considered as an example of such free associations and painstaking introspection in literature. The whole of cinema and modern advertising is essentially "dreams of the real life". Thus, we see that psychoanalysis, as well as Karl Marx's The Capital and Einstein's Theory of General Relativity, has become one of the pillars for understanding the modern world where we live. Psychoanalysis became the first method of non-pharmacological psychotherapy and the ancestor of the three main streams of modern psychotherapy in the world; that is psychodynamic, cognitive-behavioral, and existential-humanistic directions (Patterson and Watkins, 1996; Prochaska and Norcross, 2010). It should be said that Freud's psychoanalysis is not only a method of psychotherapy, but first and most, it is a method for studying the psyche and life understanding in general. A good many forget that the founder of psychoanalysis, as well as his students and followers, were not only practicing doctors and psychologists, but also versatile and profound thinkers and philosophers. As is well known, philosophy has long helped humanity to understand itself, the world, and its place in this world. Psychoanalysis, as one of the philosophical doctrines, gives a concrete tool to everyone who seeks answers to the questions about the universe and overcoming any sufferings. In modern philosophy, there are four ways to overcome suffering: religion (through faith), science (through knowledge and cognitive ability), art (through intentionality and creative imagination), and philosophy (through understanding (Russel, 1996). The modern psychoanalysis combines all four ways of overcoming suffering, which makes this tool conventionally "universal" in practice, but not the only one. Unfortunately, at present many universities of our country in the process of training of future economists (as well as other theoretical and applied specialties) pay low attention to the development of a qualitative course on the philosophy of metaphysics and, in particular, the psychodynamic theories of the psyche (in terms of modern psychoanalysis). Above all, there is a reduction of time for successful assimilation and practical application of the professional knowledge learned. Please find below some clear examples of how psychoanalysis can help students in their successful academic and professional development.

2.1. Psychotherapy as a way of self-awareness in profession

The choice of future occupation, as it may seem at first glance, is spontaneous. But according to psychoanalytic studies, the choice of profession is governed by unconscious interpersonal conflict and is a form of compromise education (Brenner, 1974). Freud laid the foundation for the theory of protective mechanisms that his daughter, Anna Freud, had thoroughly elaborated after his death. In their opinion, the most "healthy type" of the protective mechanism is sublimation. Sublimation helps to relieve internal tension by redirecting the vital energy of libido to the achievement of socially acceptable goals and creativity. Each person, in one way or another, intuitively seeks the solution of his interpersonal conflict in all spheres of life, including work. It is possible that not every student is aware of why he chooses economics as his future profession. Even the first answer he will give to this question maybe some form of rationalization that will lead him and his entourage away from the real reason for such choice. However, the reasons and motives of such a fateful choice can be very diverse. It is important to be aware of the exact reason for compromise in the choice of profession. Otherwise, you can become a hostage to your unconscious and, in case of a crisis, will not be able to cope with internal tension and disappointment in your choice. As a result, this may lead to the development of emotional and professional burnout, to the overall decrease of life quality index and, as one of the unfavorable variants of pathological development, to the formation of a variety of psychosomatic and psychological disorders. In order to prevent the unfavorable outcome of the "wrong" chosen profession, as well as difficulties in mastering the chosen profession of an economist, it is necessary to increase the individual self-comprehension (Stolin, 1983). Improvement of self-comprehension and responsibility prior to making the choice of career are key goals in any psychotherapeutic work. Unfortunately, many people do not have any skills in self-observation and understanding themselves, even when they reach the age of majority. To facilitate understanding of the meaning of the process of self-disclosure, we can refer to the following visual concept. Famous American psychiatrist and existential psychotherapist Irvin Yalom (2017) in The Gift of Therapy considers the Johari window, a venerable personality paradigm used in teaching group leaders and group members about self-disclosure and feedback has much to offer for self-understanding. Its odd name is a conflation (Joe + Harry) of the two individuals who first described it — Joe Luft and Harry Ingram. Note the four quadrants (Table 1):

- Quadrant 1 (known to me and to others) is the public self
- Quadrant 2 (unknown to self and known by others) is the blind self
- Quadrant 3 (known to self and unknown to others) is the secret self
- Quadrant 4 (unknown to self and to others) is the unconscious self

	Known to Self	Unknown to Self
Known to Others	1. public	2. blind
Unknown to Others	3. secret	4. unconscious

Table 1: Johari window

The quadrants vary in size between individuals: Some cells are large in some individuals, shrinking in others. In therapy, we attempt to change the size of the four cells. We try to help the public cell grow larger at the expense of the other three and the secret self to shrink, as patients, through the process of self-disclosure, share more of themselves — at first to the therapist and then judiciously to other appropriate figures in their lives. And, of course, we hope to diminish the size of the unconscious self by helping patients explore and become acquainted with deeper layers of themselves. But it is the blind self, that we particularly target — both in individual and group therapy. A goal of therapy is to increase reality testing and to help individuals see themselves as others see them.

It is through the agency of feedback that the blind self-cell grows appreciably smaller. The more a student learns about himself, the more he understands his motives for the profession choice. As an example of how self-analysis can help overcome professional barriers, you can consider the founder of cognitive psychotherapy Aaron Beck (Prochaska and Norcross, 2010). By his first profession, Beck is a psychiatrist, but after graduating from internship and residency, he became disappointed with his choice. According to his words, he did not understand how psychiatry can help people in the treatment of their mental disorders. For two years, he was in search of his destination in the field of scientific neuroscience, where everything was clear and well-defined. Two years later, however, Beck again had to undergo six-month retraining in psychiatry to keep his diploma and doctor's license. This retraining did not change the perception of Beck, who was already disappointed in this field of medicine. On the advice of his psychiatrist friends, whom he trusted very much and whose opinion he recognized, Beck resorted to personal psychoanalysis to understand the meaning of this "misunderstanding" of psychiatry. As a result of the two-year analysis, Beck was able to solve the internal conflict, which prevented him from improving in the chosen profession of a psychiatrist. Later Beck moved away from psychoanalysis and developed *cognitive psychotherapy*, which appeared to be rather effective in the therapy of such disorders such as depression, anxiety disorders, eating behavior disorders (e.g., bulimia) and others. Perhaps, familiarity with psychoanalysis and going through personal psychiatric analysis gave us the future founder of one of the currently popular areas in psychotherapy of mental disorders.

2.2. Psychology of Money and Profits

Most market professionals argue that the only factors influencing the market are greed, fear, and the gregarious instinct. However, David Cohen (2001), in the monograph Fear, Greed, and Panic: The Psychology of the Stock Market, believes that this is a too narrow view in judging about the psychology of money and profits. He cited many papers that explore rational factors of success in the financial sphere. For example, Nagy, in his study of the motivation of investors, showed that up to 40% of investors in making their decisions relied on the "feeling about the company" in which stocks they were going to invest money. This paper clearly shows that the types of feelings described by investors in making their decision are not always rational or conscious. Cohen cited the results of his research, during which he interviewed analysts, brokers, and traders, and identified different groups of brokers: brokers on conviction, market players, family-style brokers, custodians of capital and true speculators. In each group, people had their irrational reasons why they chose the profession of the broker and explained the success and failure in their careers. Money in all groups evokes complex feelings because it has many meanings - spiritual, symbolic, and personal. Freud in terms of psychoanalysis, argued that some people's passion for profit or money accumulation is driven by the most primitive instincts rooted in childhood. Another significant personality trying to understand the psychology of profit was American David McClelland (Cohen, 2001). Despite differences in approaches to the matter, both Freud and McClelland pointed to the importance of subconscious motivation and childhood experiences. Freud has developed a complex and important theory of psychosexual development. He proposed that from birth to the beginning of the latent period, which comes at about the age of seven, a child goes through the oral, anal and phallic stages of development (it is about infantile sexuality, not about genital sexuality of an adult). Each of these phases was named after a hole that gives a child pleasure at the appropriate stage of development. Freud has shown that external hypo- or hyperstimulation at each phase can lead to the fixation and formation of an appropriate type of personality - oral, anal, or phallic one. Attitude to money is laid at the oral and anal stages as the need for security, position in society, power, and control. Money so such acts as some analog of the natural and primary products of the child's life, which have subjective value and serve as a continuation of his body.

A clear relationship is traced between excrement and money in the process of personal development. French psychoanalyst Domonique Laporte (2002), in his monograph History of Shit comprehensively and in detail, considered the formation of capitalist relations also in connection with the development of sanitation techniques, urbanization, nationality apotheosis, capitalist exchange, and language reform. In general, psychoanalysis provides a unique tool for a deep understanding of one's choice of the economic profession through the study of his child's experience, as well as nonrational and subconscious forces. Psychoanalytic thinking not only gives a future economist a better understanding of his motives and intuition but also provides the opportunity to harmoniously "communicate" with his unconscious, rather than fight with it.

3. PSYCHOLOGICAL KNOWLEDGE AND METHODS APPLICABLE FOR TRAINING STUDENTS OF THE ECONOMIC FACULTIES

This chapter represents the basic knowledge and methods of work, which were actively used and continue to be used at the courses "Psychology" and "Psychological Training" developed at the Department of Psychology, Pedagogy, and Law at the Novosibirsk State University of Economics and Management in searching new and more efficient technologies for teaching students. These courses allow us to lay down the basic principles of understanding the structure and functioning of the psyche, as well as to explore yourself and learn basic methods of self-care in the process of learning. Further, the most successful ways to interact with the students of economic faculties will be discussed in more detail.

3.1. Psychological Workshop on Psychodiagnosis

The main purpose of this workshop for economic students is to study their own psychological qualities, which may help or interfere with the mastering of their future profession. Psychodiagnostic material was selected based on the long-term experience of domestic colleagues major in clinical psychology and pathopsychology of the Moscow and St. Petersburg schools (Yan'shin, 2007; Rubinshteyn, 2010a, b). The mental categories that are explored during this workshop, and the methods of their study are listed below.

- **Diagnostics of partial (cognitive) processes**
  Attention, memory, and thinking are the main types of mental activity whereby an opinion about the rationality of cognitive processes of the psyche is made. It is recommended to use at least three tests for attention: for example, task correction test (with and without switching attention), E. Krepelin Account, finding numbers according to W.Schulte-Goebova Table, and Memorizing of 10 words (first demonstration) may be useful as well. At least two tests should be made for checking memory, that is, for example, Memorizing 10 words, the Method of Indirect Memorization Study Proposed by A.Leont'ev or pictograms (cards with pictures). Thinking is tested by at least six methods: for example, classification of articles, rejection of superfluous ones, simple and complex similarities, interpretation of proverbs and metaphors, pictograms, and others. However, this part of the workshop may be reduced to the familiarization, as the emotional-volitional sphere and personality traits of future professionals are of more interest.
- **Diagnostics of the emotional-volitional sphere**
  This section investigates the levels of personal and situational anxiety (Integrative Anxiety Test A. Byuzyuk-L.Vasserman, Taylor Manifest Anxiety Scale), depression levels (A. Beck Depression Inventory, W. Zeng Self-Rating Scale Depression), alexithymia levels (Autistic Spectrum Disorder) Toronto Alexithymia Scale, as well as investigate protective and compensatory abilities (the Life Style Index and the Associated Behavior) (Ways of Coping Questionnaire R. Lazarus-S), Folkman, Bernese Coping Modes Questionnaire E. Heim).

- **Diagnostics of the emotional-personality sphere**
  This part includes the diagnostics of temperament, character, and personality. Temperament can be tested with Tepping-Test E. Ilyan, Structure of Temperament Wuestionnaire V. Rusalov and Eysenck Personality Inventory. Character focus diagnostics is carried out with the help of the Questionnaire of K. Leonhard-G. Shmishek and Pathological Diagnostics Characterological Questionnaire E. Licko. Classical tests can be used to diagnose personality traits: Minnesota Multiphasic Personality Inventory, Thematic Apperception Test, H. Rorschach Inkblot Test, The M. Luscher Color Test, T. Dembo-S. Rubinstein Techniques, Subjective Control Level E. Bazhin-L. Etkind-E. Golynkin, Technique of Picturesque Frustration S. Rosenzweig, HAND-test, et al.

It is important in the process of the psychodiagnostic workshop to show the student that there are no "good" and "bad" qualities of the psyche. In fact, there are only conventionally "strong" and "vulnerable" features, which may help or interfere with the achievement of the tasks accordingly. In addition to examining the individual characteristics of each student, research into the relationship between students in the group as a model of the economic system is of special interest. To examine the structure and functioning of the group, sociometry methods, and group dynamics research can be used (Moreno, 2012).

3.2. Thematic analysis of movies and literature

During workshop sessions, the analysis of movies and books related to the topic of the future profession is very popular among students. For example, during such training workshops, the autobiographical book by Frank Abagnale Catch Me If You Can was discussed to analyze the behavior of people involved in the economic fraud and compared with a film version of the book directed by Steven Spielberg in 2002. Another striking and interesting examples for students are film adaptations of the novel by Jordan Belfort The Wolf of Wall Street (directed by Martin Scorsese, 2013) and the novel by Michael Lewis The Big Short: Inside the Doomsday Machine (directed by Adam McKay, 2015). The attention of students is focused not only on the economic phenomena such as "economic fraud," "financial catastrophe" and "brokerage," respectively but also on the psychology of people who are a part of the financial and economic relations, as well Such discussion is also aimed at the underlying tasks such as the formation of critical and systems thinking, as well as grounding in Socratic dialogue skills, which together allow us to observe, analyze and understand the motives and causes of human behaviors in the different living environment and emergency situations. The workshop training proclaims the principle of respectful attitude to each other's opinions - every opinion has the right of existence! To visualize the course of the discussion, you can use the teacher board, on which all the key points of the meeting are being put down using the system of support signals by V. Shatalov (1989). This form of work not only keeps the students' attention during the workshop training but also leaves a long emotional imprint in the memory and forms a personal interest in the profession through understanding the psychology of human relationships.

3.3. Supervisory Group Meetings

Principles of deep psychology can be actively applied as brainstorming, and in the form of a supervisory group meeting, "The Economist on the Couch." A year before, the author of this article took part in the international congress dedicated to aiding in the profession. One workshop training had an intriguing name, "Business on the Couch." The couch in the office of a psychoanalyst is the place where the analyzed relaxes (get regressed) and go through his personal analysis (Stern, 1978). This format of relationships is analogous to the Supervisory Balint Group for psychotherapists and professionals that help the professionals who need supervising their work (Vinokur, 2019).

The facilitator of the event was a qualified psychoanalyst-supervisor, and the participants were three representatives of the company selling little-known air purifiers, as well as all the trainees who came to the supervisory session. The participants told the history of the company and expressed a desire to increase the purchasing power of the product, increase its attractiveness, and resolve some of the difficulties that arose with the appointment of new management. Each trainee could ask a clarifying question and offer his own vision of the situation. It is noteworthy that a lot of psychoanalysts and psychologists working in different approaches were participants of this workshop. Under the guidance of the facilitator, the participants did not switch to personalities and freely and easily exchanged experiences. The facilitator coordinated the conversation, clearly summarizing each point of communication. As you can see, the structure of the whole meeting repeats all the stages of the classical Ballint Group: presentation of the event and the request for supervision, the range of clarifying questions, the range of opinions and proposals, the summarized opinion of the leading expert and the final word of the supervised person. The facilitator monitors the group dynamics of the meeting and compliance with the rules and regulations of the meeting. After the business visited the "psychoanalytic couch," the guests left with ready-made solutions on how to improve the design of the product, overcome fears of their potential customers (e.g., fear and unwillingness to drill a hole in the wall for outlet tube of the device). The communication problems within their company were also identified, elimination of which could improve the working climate and accelerate further development. This meeting clearly shows how it is important sometimes to go not on the surface to reach the goal, but penetrate into the depth of the situation, as all the people in the group make up a single holistic organism, a kind of "big man" with its complex psychology. This format becomes a very useful addition in mastering the principles of deep psychology and group processes in the educational process of the students of economic faculty.

3.4. Role-Playing Trainings

Active use of acting (role-playing) training is good support in teaching students of economic faculties. This method of learning interaction allows us to effectively develop the skills of attention, memory, and imagination, which are necessary for any profession that deals with analyzing complex systems, which are the subject of economic research. Playing space is one of the fundamental forms of cognition of the surrounding reality by children, which persists until reaching adulthood. In adulthood, role-playing interaction may also happen, although it is of no such impotence as compared to the other forms of cognition of the world around. In psychological practice, the play is actively used as an element in various training, as well as a constituent element in psychotherapy (for example, method of psychodrama). Students are acquainted with the fundamental principles of playing, which are the basis of role-playing training. The Russian school of acting skills training is based on the following acting methodologies of K. Stanislavski, M. Chekhov, and V. Meyerhold (Stroganov,2008). All systems have their unique theoretical base, but the common goal that unites them is to reveal the true talent and develop each person's acting intuition for visualization of the "life of the human spirit on stage," which embodies a creative image to actively explore their inner creative possibilities. In other words, in practice, acting (role-playing) training allows students to fully loosen up and actively explore their inner creative possibilities. N. Demidov, a follower and student of Stanislavski, developed unique exercise-studies so-called "dialogues" just to reveal the acting nature of his students (Demidov, 1965). In fact, his dialogues are a re-enactment of situational dialogues that take place under the supervision of the observer. One and the same dialogue can be conducted in different ways. The main purpose of these exercise-studies is to achieve internal "truth" and external persuasiveness. Economic-related relationships can be used to increase the involvement of the students of the faculty of economics. Recently, a lot of unique and useful acting technique exercise books were published that could be successfully

used for role-playing training (Chubbuck, 2004; Al'shits, 2009; Shihmatov and Lvova, 2014; Zhenovach et al., 2016; Sarab'yan and Polischuk, 2019). Those exercises can be safely used as a warm-up exercise, as well as exercises that help relieve excessive stress during training sessions and group classes. Method of effective analysis of plays (*The Active Method of Plays*) which is actively used by director-producers at the " table-talk period" before the direct staging of the play for a thorough analysis of the event history and characters in the play (Knebel', '1982; Al'shits, 2015; Zhenovach et al., 2016) is also very useful for improving analytical thinking of students. As a separate form of educational interaction of students-economists among themselves, it can be considered acting out of episodes from the plays A. Ostrovsky and other domestic and foreign authors, which deeply reveal the theme of "the power of money "over people's souls.

3.5. Burnout Prevention: Training and Personal Psychotherapy

Preventing emotional burnout is another integral part of the learning process for economic students. Thematic training (e.g., assistive training, stress and conflicts management training, etc.) and personal therapy, both individual and in groups (Prochaska and), can act as preventive tools. Norcross, 2010). Group work is weekly one-and-a-half-hour meetings in the form of group analysis or psychodynamic group training (Ormont, 1992; Vopel, 1997; Pritz and Vykoukal, 2003; Yalom and Leszcz, 2005). Type of psychotherapy should be selected by a student based on personal preferences - psychodynamic, cognitive behavioral, or existential-humanistic directions. In general, this block is optional and only advisory in nature and is intended to increase self-understanding and improve the emotional state of students in the course of the learning process.

4. CONCLUSION

This work examined the importance of psychological knowledge for economic students and proposed specific psychological activities that could be used in the learning process. This paper observes the importance of psychological knowledge in the process of training students of economic faculties. It was shown that psychoanalysis, despite its obscurity and complexity at first glance, provides a unique tool for in-depth study of deep-seated desires and motivations. Often the choice of profession is not accidental and arise from the intrapersonal conflict in the form of a compromise education. It is important to be aware of the exact reason for compromise in the choice of profession. Otherwise, you can become a hostage to your unconscious and, in case of a crisis, will not be able to cope with epy internal tension and disappointment in your choice. As a result, this may lead to the development of emotional and professional burnout, to the overall decrease of life quality index and, as one of the unfavorable variants of pathological development, to the formation of a variety of psychosomatic and psychological disorders. Also, psychoanalysis provides many useful answers and nuances with regard to money and profit psychology, opening up new opportunities in the development of analytical abilities and development of "financial intuition" in the professional life of any financier and economist. This paper shows the non-traditional way to improve education, aimed not only at better assimilation of the educational material, but also at increase of personal self-consciousness, understanding yourself in the occupational system and prevention of premature emotional exertion. Specific psychological activities have been proposed that can be used in the learning process. Five educational blocks were discussed in detail. Those blocks are based on the achievements of domestic and foreign psychologists and include acting training (role-playing) and group dynamics: psychological workshop on psychodiagnosis, thematic analysis of movies and literature, supervisory group meetings, role-playing trainings, and burnout prevention: training and personal psychotherapy. All these tools can be used simultaneously or selectively, depending on the goals set by the educational institution in training specialists.

The aim of this article was also to show the possible ways of successful and fruitful cooperation between two human spheres as economics and psychology. We hope that this article will allow further improvement of the training process of new generations of economists, who will be able not only to cope with their tasks and goals, but also help themselves to successfully acclimatize to any economic crisis, as well as to be more or less flexible to world fluctuations in any sphere of life.

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INSURANCE COMPANIES AS FINANCIAL INTERMEDIARIES: THE CASE OF CROATIA

Dubravka Pekanov Starcevic
Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek
Trg Ljudevita Gaja 7, Osijek 31000, Croatia
dubravka.pekanov@efos.hr

ABSTRACT

Financial intermediaries buy direct claims with one set of characteristics and transform them into those with different sets of characteristics. This procedure, called financial transformation, converts size, liquidity, and risk of collected funds, and consequently decreases financial costs. Traditional theories of financial intermediation were developed when the role of intermediaries was only to collect funds and channel them to companies, that is, to solve the problem of transaction costs and asymmetric information. However, the role and importance of financial intermediaries have increased with the development of new financial products and increasing investment possibilities. These changes caused the need for developing modern financial intermediation theory, where the primary role of financial intermediaries is to manage risks and optimize yield. Although depository institutions, i.e. commercial banks, dominate financial markets, the significance of other intermediaries should not be neglected. This paper demonstrates the importance of one group of financial intermediaries, i.e. contractual savings institutions, which collect funds by offering financial contracts aimed at protecting a saver against different risks. Special emphasis is put on insurance companies and their position in the financial system of the Republic of Croatia. This paper gives an overview of the insurance industry in the Republic of Croatia in the period 2008-2018; the number of companies, the structure of insurance policies, and insurance gross premiums written. Insurers' contribution as financial intermediaries was analyzed; both in Europe and in Croatia, and valid conclusions were given.

Keywords: *financial system, financial intermediaries, insurance companies, Croatia*

1. INTRODUCTION

A modern financial system enables the mobilization of funds from the cash-surplus sectors (e.g. general population) to the cash deficit sectors (e.g. companies, government) through the process called financial intermediation. This process creates possibilities for investing and facilitates economic growth. Financial intermediation is a pervasive feature of all of the world's economies, and the root institution in the savings-investment process (Gorton & Winton, 2003, p. 434), while financial intermediaries are natural and legal persons that raise funds and then place them on the financial market. The role of financial intermediaries is addressed through theories of financial intermediation, namely traditional and modern theories. Traditional theories of intermediation are based on transaction costs and asymmetric information, and thus the role of financial intermediaries is aimed at reducing both the negative effects of asymmetric information and transaction costs. However, with the advances in information and communication technologies and development of financial markets, the role of financial intermediaries described within traditional theories became obsolete. Thereby, modern theory is based on the information asymmetry where financial intermediaries play additional role, besides assessing information between the parties in transactions. They manage risk and optimize yield. The role of insurance companies as financial intermediaries has become increasingly prominent in recent decades. They became important for the financial systems stability as they represent large investors in financial markets, because of the growing links between insurance companies and banks, and because of their function of protecting individuals

and companies from different risks (ECB, 2009). Their importance is increasing with the rise of the insurance sector. According to McKinsey & Company (2019), the global insurance industry grew by more than 4% in 2017, and increased growth in the same year. The euro area insurance sector has also experienced growth. For example, total assets of euro area insurance corporations grew from €7,875 billion in the 4th quarter of 2018 to €8,706 billion in the 4th quarter of 2019 (ECB, 2020). According to the data provided by the Croatian Insurance Bureau (CIB, 2019), as of 30 September 2018, the accumulated assets of insurance companies in the Republic of Croatia amounted to HRK 42,250 million. This amount represents 7% of the assets of the financial industry and ranks insurance companies as the third largest segment of the financial industry in the Republic of Croatia, immediately after commercial banks and mandatory pension funds. To foster the economic growth, the financial system must be effective in channeling funds from the cash-surplus to the cash-deficit sectors. Insurance companies mobilize savings and act as institutional investors, thereby influencing the development of financial market and consequently the entire economy. The purpose of this paper is to give an overview of the insurance industry in the Republic of Croatia from 2008 to 2018. In addition, insurers' role as financial intermediaries will be analyzed. The remainder of the paper is organized as follows. Insurance and types of insurance were analyzed in the second chapter, which is followed by a chapter describing the Croatian insurance market in the period 2008-2018. The fourth chapter contains analysis of insurers as financial intermediaries in Europe and in Croatia, while the final chapter brings concluding remarks.

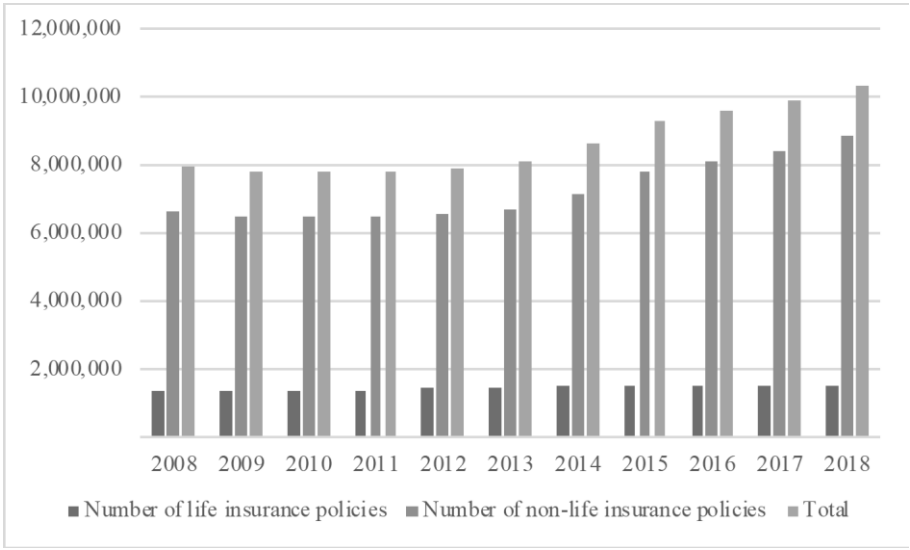
2. INSURANCE AND TYPES OF INSURANCE

The primary purpose of insurance is to transfer risk from an individual to an insurer by concluding an insurance contract. This protects the individual from the dangers that could potentially endanger his/her life or damage his/her property (Rafaj, 2009). In addition, insurance promotes economic activity in a way it gives policyholders risk coverage as well as implicit confidence to make investments or to take part in business that would otherwise be too risky (IE, 2013). Risk can be defined as a condition where there is a possibility of an adverse deviation from a desired outcome that is expected (Vaughan & Vaughan, 2000). In the case of insurance activity, actuaries predict the number and volume of losses, and the premium is based on those expectations. The volume of foreseen losses is the desired outcome for the insurer, and risk is a possibility of an adverse deviation from a desired outcome that is expected (Vaughan & Vaughan, 2000, p. 5). Insurance can be viewed from the standpoint of the individual and from the standpoint of society. If viewed from the standpoint of the individual, it is an economic instrument that replaces the amount of an insurance premium with uncertain financial loss (Klasić & Andrijanić, 2013, p. 10). From the standpoint of society, insurance is an economic instrument for risk reduction such that by combining a sufficient number of exposures to the same risks we predict with sufficient accuracy loss for the entire observed group (Klasić & Andrijanić, 2013, p. 10). Insurance is classified according to the types of an undesirable event into life insurance and property and casualty insurance. Life insurance enables the protection of the individual and the beneficiary against the risk of loss of income in the event of death or retirement. Given the law of large numbers, by increasing the number of insured persons, insurance companies can shift uncertainty from an individual to the group. In addition to life insurance, there is property insurance and accident insurance. According to Mishkin & Eakins (2011, p. 524), property insurance is the kind of insurance that protects businesses and owners from the impact of risk associated with owning property, while casualty insurance "protects against liability for harm the insured may cause to others as a result of product failure or accidents". The risk of property loss is reduced by contracting property insurance policies, while within the framework of a liability insurance policy a person is protected against legal liability.

3. INSURANCE MARKET IN THE REPUBLIC OF CROATIA 2008-2018

The insurance business in the Republic of Croatia is regulated by the Insurance Act (Official Gazette 30/15, 112/18), which regulates the conditions for the establishment, operation and discontinuation of insurance and reinsurance companies, as well as the conditions under which insurance companies can carry out business activities in their domain. Figure 1 shows the structure of the number of insurance policies in the Republic of Croatia. It can be seen that by the number of insurance policies contracted, non-life insurance is ahead of life insurance, where the largest number of insurance policies throughout the whole period observed refers to motor vehicle liability insurance. The mandatory vehicle liability insurance premium accounts for the largest share of the total gross premiums for the use of motor vehicles (i.e., 94.89% in 2018). In terms of life insurance, there is a positive shift and an increase in the number of contracted policies. At the end of 2018, there were approximately 790,000 life insurance policies recorded in the Republic of Croatia, which amounted to HRK 2.53 billion (CIB, 2019).

Figure 1: The number of insurance policies in the Republic of Croatia in the period 2008-2018

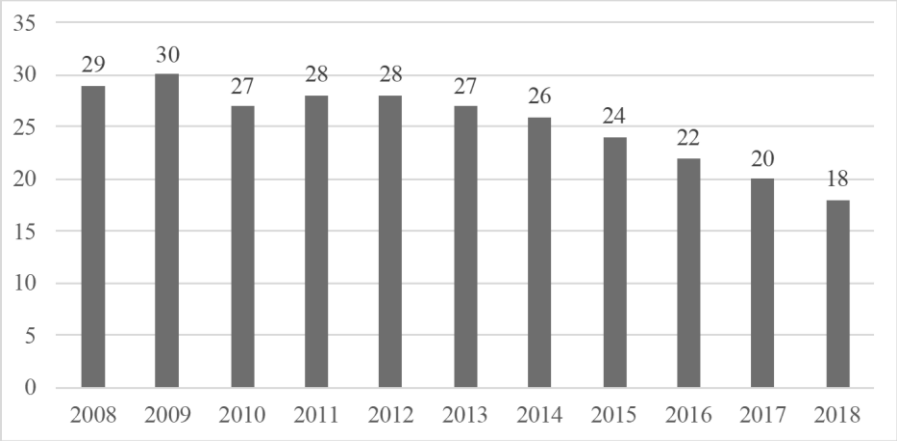


Source: Croatian Insurance Bureau, 2019

If one considers the trend of the number of insurance companies headquartered in the Republic of Croatia from 2008 to 2018, a decrease in the number of companies is evident, i.e., in 2008, there were 29 insurance companies operating in the Croatian market, while in 2018, this number was reduced to only 18 of them (Figure 2). Adverse economic developments, especially in times of the economic and financial crisis, have inevitably left their mark on the trend in the number of insurance companies such that a further reduction is expected.

Figure following on the next page

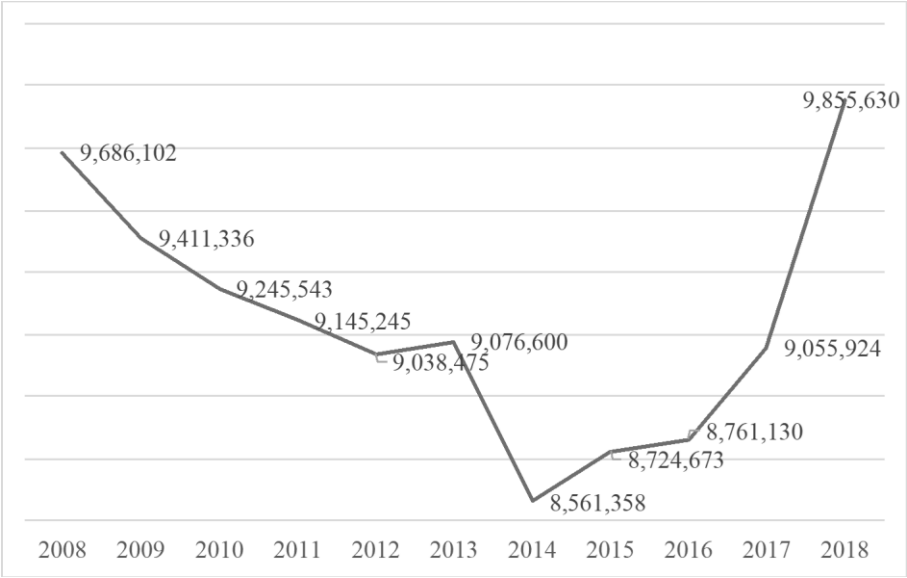
Figure 2: Trends in the number of insurance companies in the Republic of Croatia in the period 2008-2018 (as at 31 December)



Source: Author, based on data available at: https://www.hanfa.hr/publikacije/statistika/#section2

Gross premium refers to the price of insurance and consists of the direct premiums written and the assumed premiums written, but before deductions for reinsurance and ceding commissions. According to the Croatian Insurance Bureau data (CIB, 2019), compared to 2017, in 2018, insurance companies recorded an 8.8% increase in gross written premiums, which amounted to HRK 9.856 billion. This increase is a result of a 9.9% and a 6.6% increase in gross premiums written to the non-life insurance sector and the life insurance sector, respectively. These results corroborate that insurance companies achieved better results compared to 2008. Figure 3 shows the trends in total gross premiums written between 2008 and 2018.

Figure 2: Gross premiums written in the period 2008-2018 (in HRK 000)



Source: Author, based on data available from the CIB, 2019

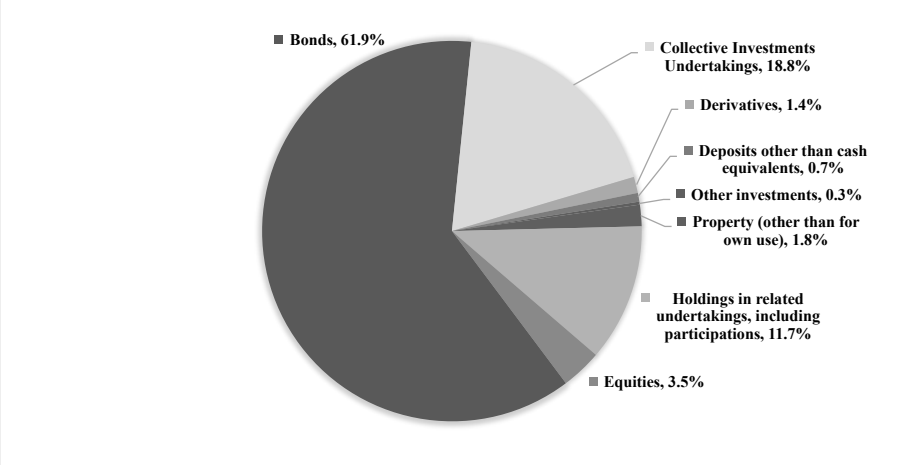
If one considers the trends in gross premiums written between 2008 and 2018, one can see the most significant decrease in premiums in 2014, which was the lowest decrease recorded since the beginning of the financial crisis in the Republic of Croatia. According to the Croatian Insurance Bureau (CIB, 2019), the trends in gross premiums written in the last ten years have been influenced by the economic crisis, the liberalization of the vehicle insurance market and

the dynamization of the market. At the same time, the volume of gross premiums written to the non-life insurance segment is significantly higher than the volume of gross premiums written to the life insurance segment (CIB, 2019). Therefore, the total value of the gross insurance premium is created by taking into account primarily the influence of non-life insurance premiums.

4. INSURANCE COMPANIES AS FINANCIAL INTERMEDIARIES: EUROPE AND CROATIA

Insurance companies belong to the non-banking sector of financial intermediaries. Although banks have higher assets, they are not considered to be institutional investors (OECD, 2019). Insurance industry represents the largest institutional investor in Europe. According to the Insurance Europe (2020), total value of insurers' investment portfolio (represented by the sum of investments + assets held for index-linked and unit-linked contracts + loans and mortgages) in EU amounted €10,186 billion, comprising 58% of the EU Gross Domestic Product. The liquidity profile, duration of liabilities, the presence of guarantees in products, as well as capital requirements for investment assets (defined within the EU's Solvency II regulation) are crucial in determining the appropriate insurers' assets (Insurance Europe, 2020). Insurance companies invest premiums paid until they become due for payment. Their investment decision making is determined by the structure of their liabilities. Since insurance liabilities are mostly illiquid, this protects insurers against rapid liquidity shortages. Such liability characteristics call for long-term investments. On the other hand, property insurance and accident insurance are far less predictable and require insurers to make liquid investments. The structure of European Economic Area (EEA) insurers' investments in 2018 is given in Figure 4.

Figure 3: Structure of EEA insurers' investments (other than assets held for index-linked and unit-linked contracts) in 2018

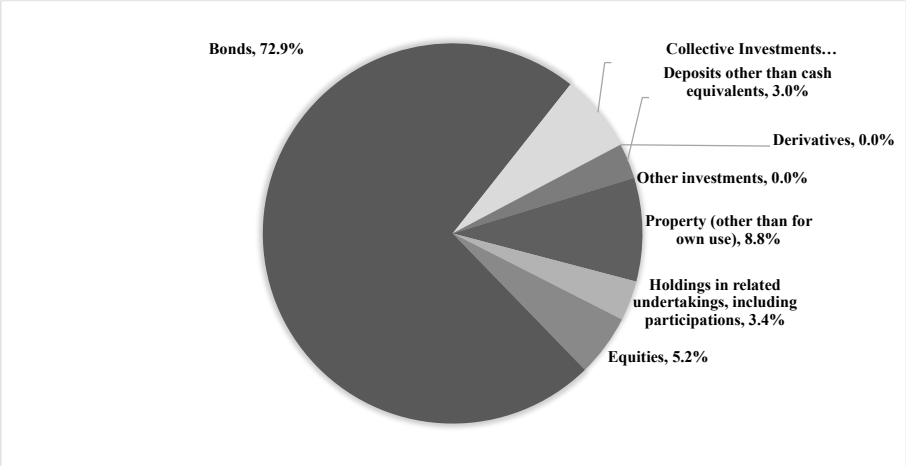


Source: EIOPA, 2019

Total amount of EEA insurers' investments in 2018 were €7,222,599.20 million. Within the structure of these investments dominate bonds, with the share of 61.9% in 2018. Insurers tend to invest in government and corporate bonds because their characteristics are in line with insurers' liabilities. As insurers make such large investments in government and corporate bonds, they have a potential to influence long-term interest rates and pricing in the secondary market (ECB, 2009). Since the overall investment climate in 2018 worsened (declining interest rates, poor financial market performance), insurers did not take additional risk by investing in riskier investments (e.g. investments in equities represent only 3.5%, and in derivatives only 1.4% of total investments).

When looking at Croatian insurers, their total investments in 2018 were €4,274.30 million. The structure of these investments is given in Figure 5.

Figure 4: Structure of Croatia insurers' investments (other than assets held for index-linked and unit-linked contracts) in 2018



Source: EIOPA, 2019

If compared to the EEA level, insurers in Croatia invest in bonds and equities slightly more. Namely, investments in bonds represent 72.9% of all investments, while in equities 5.2%. Of the total investments in bonds, 69.43% represents investments in government bonds. Via these securities, insurers supply the funding needs of government, while through investment in equities, insurers contribute to overall corporate financing. These numbers speak in favor of their important role in Croatian financial system, as well as in economy.

5. CONCLUSION

The aim of this paper was to analyze Croatian insurance market and insurance companies as significant participants in the comprehensive financial intermediation sector in the Republic of Croatia. Adverse developments in the economic sectors have been reflected in the insurance market in the Republic of Croatia in recent years. In the period 2008-2018, the number of insurance companies decreased, while it was not until 2018 that insurance companies were able to achieve the 2008 results relating to gross premiums written. European insurers mostly invest in government and corporate bonds, thereby facilitating the financial system development and economic growth. Although bonds generate low yields, investment risk is also low. In addition, through buying government bonds, insurers supply the funding needs of government. Insurers in Croatia invest in bonds and equities slightly more than European insurers. The macroeconomic environment for European insurance companies in 2018 was mixed; the EU economy grew slower than in the previous year and interest rates remained low, while financial markets volatility increased. Thereby, risk management should be of critical importance for (Croatian) insurance companies to deal with this challenging macroeconomic environment. Furthermore, insurance companies need to keep pace with technological developments as well as social changes in order to keep the existing and attract new customers.

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THE GLOBAL MUSIC INDUSTRY IS RECOVERING FROM THE CRISIS: STREAMING REVENUE TAKES OVER DOMINANCE FROM OTHER REVENUE SEGMENTS

Josko Lozic
University North, Varazdin, Croatia
josko.lozic@unin.hr

ABSTRACT

The aim of this paper is to analyse the revenue structure of the global music industry in the context of changing technological structure. The global music industry's total revenue has changed dramatically in recent years. Psychical revenues are steadily declining, while streaming and performance right revenues are steadily increasing, indicating the development of a new media industry. Streaming revenue has become the largest share of revenue from all segments of the music industry. Streaming technology has become a dominant way of listening to music. The development of technological capabilities and the convergence of the system have directly influenced changes in the habits and patterns of music consumption. Instead of buying and owning music content, as in the old media industry model, users become subscribers who listen to content while on the subscription system. The new media industry means generating revenue from new business models. In the music industry, the streaming model takes dominance in revenue generation.

Keywords: *music industry, performance right, streaming*

1. INTRODUCTION

The music industry is part of the media industry in a broad sense. In the context of defining the old media industry, the music industry would belong to the broadcasting segment. The revenue generated by the music industry, as part of the old media industry, came from the sale of vinyl records that were broadcast on radio. Post-industrial society and the digitization of all segments of the production process have directly influenced the separation of the music industry as an independent industry in the context of the media industries. The term „media industry“ covers a huge slice of territory ranging over print, sound, screen and digital bit sin space, in venue as various as corporate communications, advertising, websites, novels, films, recordings, and music being shared person to person on the Internet (Hilmes 2009: 21). The media industry is not monolith but rather a conglomerate of different industries that have the creation of mediated content as a common activity (Kung 2008: 1). Companies now compete with one another across markets and in different industries in the media economy (Albarran 2010: 3). Media encompasses all goal-orientated means or instruments for the procurement of information in print, visual, or auditory forms as well as the organisation and institutional entities behind them that generate and provide this information (Wirtz 2011: 12). Radio, television, film, digital media, and the other products of media culture provide materials out of which individuals in contemporary media and consumer societies forge their very identities, including sense of self, notion of what it means to be male or female, and conception of class, ethnicity and race, nationality, and sexuality (Kellner 2009: 95). Divides of the music industry are not such clear that we can find very different model of segmentation. Anderton (et al. 2013) divides the music industry into the following segments: recorded industry, song writing and publishing, music production, music distribution, music promotion and live music industry. Wikstrom (2009), four years after, divides the music industry in only three parts: music recording, music licensing and live music. IFPI Global music report divides the music industry, by the revenue, in five core categories: a) psychical; b) digital; c) streaming; d) performance right; and e) synchronisation.

2. NEW MEDIA INDUSTRY AND STREAMING

We connect the new media industry with the digitalization of business processes and the convergence of production and distribution of content across developed technology platforms. The development of the internet at the end of the last century will mark the beginning of the end of the classic media industries. The music industry will feel it with the advent of Napster, a platform for downloading pirated music online. The sudden decline in revenue from the sale of psychical music was a sign of alarm and the beginning of the development of new forms of music sales. Classical music production was based on the production of vinyl sound carriers and radio playback. The new media industry was evolving as technology evolved. On the one hand, the pace and direction of development was dictated by technology, and on the other, changes in consumer habits. In the transition from the old to the new media industry, the music industry has gone from vinyl to streaming. Production of cassettes was added to the production of vinyl as early as 1980 (Fuentes et.al. 2019; Simon 2019). The cassettes quickly gained dominance in overall sales from vinyl albums, but this continued until early 1990. The development of digital technology made it possible to develop CDs which have very quickly replaced existing vinyl and cassette technologies (Fuentes et.al. 2019; Simon 2019; Ryan 2019). CDs development and use will be much shorter than vinyl albums and cassettes. Digitization and convergence of distribution platforms have enabled the development of new formats for content consumption. In the new music industry, mp3 formats have fallen out of use with CDs (Fuentes et.al. 2019). Consider the music industry, where vinyl records gave way to audiocassette tapes, which were replaced by CDs in the early 1990s and then overtaken by digital MP3 format in the early 2000s. The number of songs that you could carry with you continued to grow exponentially, but the devices you used changed as each medium eventually reached the end of its power curve (Koulopoulos, Keldsen 2014: 5). The change in distribution technology marked the end of the old music industry. McLuhan's "medium is the message" approach determined the technological pattern of a new way of consuming music. However, “medium is the message” has not only determined the technological component of music distribution and consumption. At the same time, he determined new consumption habits. The old form of psychical, vinyl album, meant consuming music in designated spaces. The tapes and CDs have already announced a change in these habits. The Mp3 model finally made it possible to use it permanently no matter what the situation of the user. The development of ICT and the digitization of all forms of production processes have enabled the disruption of processes within the existing frameworks of the music industry (Hadida, Paris 2014; Kenney et.al. 2015). Although streaming technology was already well known, it was not until 2008 that Spotify launched a complete change in music usage habits. Some scholars are inclined to argue that the adoption of streaming technology in music can be compared to the changes after the first and second industrial revolution. Streaming technology allowed for mobility while consuming music, but also changed listening habits. Music platforms and streaming enabled the formation of playlists that could be exchanged between users (Dholakia et al. 2015; Sinclair, Tinson 2017). The use of streaming models marked the beginning of a whole new paradigm for the music industry. Instead of making vinyl albums and listening to previously set content frames, users create their own frame. Listening to music is possible on all platforms (Pray 2019; Arditi 2017). Instead of owning it, users opt for a subscription model. The old music industry was in the pipeline model. The new music industry uses a platform economy model (Lozić et.al. 2017; Lozić 2019a). Streaming technology has made it possible to use the zero marginal cost model (Rifkin 2015; Lozić 2019b).

3. METHODOLOGY

The study is based on secondary data published by IFPI in the Global Music Report 2019. IFPI is a specialized agency that publishes movement results and trends in the global music industry. The research focuses on two basic research questions:

- RQ1: What is the ratio of streaming revenue to total revenue and can this revenue offset the decline in psychical revenue?
- RQ2: Can and when be expected to recover total revenues to a period in which only psychical income existed?

By analysing trends in revenue trends within the various segments of the music industry, we will determine the trend in which the revenues of the global music industry are generated.

4. KEY FINDING

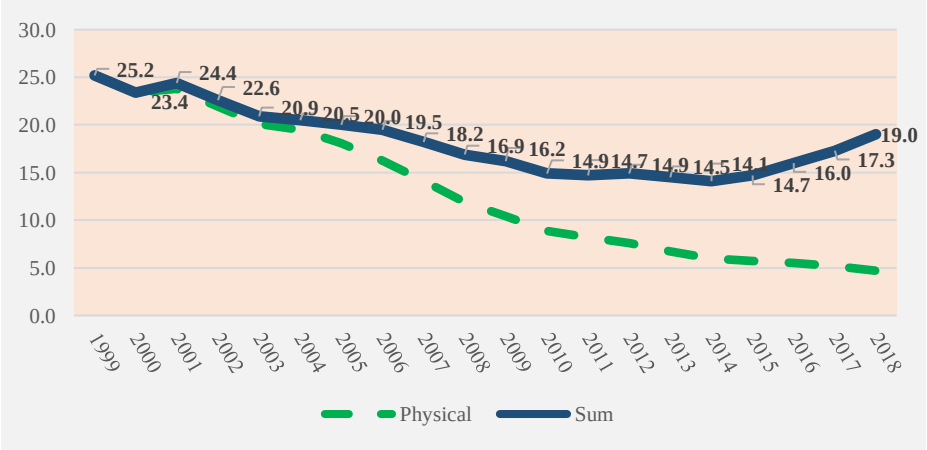
According to the Global Music Market 2019 report, the global music industry has grown 9.7% over the previous year, according to total revenue. Streaming revenue grew 32.9% and total streaming revenue was 46.9% of total global revenue. Download revenue decline 21.2%, and psychical income decline 10.1% (IFPI 2019). However, the business has undergone a significant transformation over the last decade, recovering from its evisceration by file-sharing thanks largely to the ascendance of streaming. The global enterprise of recorded music is now making a convincing comeback (Lunny 2019). Total revenues have continued to grow since 2015. Revenues are recovering, but not so fast. In 2018, revenues climbed to the level they were in 2006. In the same year, streaming revenue began to be recorded for the first time, and this will be the initial year of research in this paper. According to the IFPI Global Music Report, Latin America posted the largest revenue growth of 16.8% year-over-year. North America grew 14%, while the Asia-Australia market grew 11.7%. The smallest growth was recorded in Europe. Revenue growth was 0.1%. Such a small increase is directly linked to a 9.9% fall in the German music industry's revenue. Germany is the largest media market in Europe and the decline in that market has a significant impact on total revenue in Europe. Sweden and Norway recorded revenue growth of 2.8% and 1.7%, respectively, thanks to the developed streaming services market. The total paid streaming market in Europe increased by 29.2%, while psychical revenues decreased by 19.4% and downloading revenues decreased by 23.4%. Performance right revenue fell 6.7%, which is an exception to other global markets.

4.1. Revenue segmentation of global music industry

The revenue trend of the global music industry is shown in Figure 1. The figure shows a comparison of total music industry revenue with psychical income. In 1999, revenue was only made up to vinyl albums. In 2001, we recorded the first revenue from performance right, and in 2004 from digital. In 2006, the first streaming revenue was recorded. Streaming revenue is directly related to the advent of smartphones. With the advent of iPhones, and subsequently other smartphones, streaming has grown exponentially. Streaming represented the development of technology that made it possible to listen to music without the possibility of pirated downloads from the Internet. For GenZ the lines between work, play, and life are blurred – the idea that you have to be in a specific place at a specific time to work is as foreign as the thought of having to find a pay phone to make a phone call (Koulopoulos, Keldsen 2014: 5). However, it is not just the development of technology that is responsible for the rapid development of streaming. The habits of Generation Z, abandoning possession for the benefit of use, have completely changed the paradigm of the business of the global music industry. Generation Z has never known a world without the Internet. In looking just at Generation Z teens, 78 percent use a smartphone (Seemiller, Grace 2019). Consumers figured out that the difference between Steve Jobs' version of music "ownership" (downloads) and "rental" (streaming) doesn't really

matter in a world in which we can now access 60 million songs ad-free for less than $10 per month (Csathy 2020). Low (2013) notes very interestingly how some 54% of us check our phones while in bed – before we go to sleep, after we wake up or in the middle of the night. And one in five checks immediately after sex!

Figure 1: Global recorded music industry revenues 1999-2018 (US$ bill.)



Source: own illustration

Table 1: Global recorded music industry revenues 2006-2018 (US$ bill.)

	Physical	Digital	Streaming	Performance right	Sum
2006	16,3	2,0	0,2	1,0	19,5
2007	14,1	2,7	0,2	1,2	18,2
2008	11,9	3,4	0,3	1,3	16,9
2009	10,4	3,7	0,4	1,4	16,2
2010	8,9	3,9	0,4	1,4	14,9
2011	8,2	4,2	0,6	1,4	14,7
2012	7,6	4,4	1,0	1,6	14,9
2013	6,7	4,3	1,4	1,8	14,5
2014	6,0	4,0	1,9	1,9	14,1
2015	5,7	3,8	2,8	2,0	14,7
2016	5,5	3,2	4,7	2,3	16,0
2017	5,2	2,8	6,6	2,4	17,3
2018	4,7	2,3	8,9	2,7	19,0

Source: Own illustration

The music industry revenue shown in Table 1 shows the amounts of revenue generated by the years analysed. Revenues from psychical declined continuously throughout the analysed period. Revenue from the digital segment has grown steadily but slowly until 2013, and after that it begins to decline year after year. Streaming and performance right revenue has grown steadily throughout the analysed period. Total revenues fell until 2014, and after that began a sharp recovery. There are two factors to which revenue growth can be attributed: a) streaming and performance right grew year by year, although they could not offset cannibalized psychical revenues, and b) in 2015, synchronization revenues increased sharply. The percentage change in revenue is shown in Table 2. In the analysed period, revenues from psychical 2018 were 71.2% lower than in 2006.

Despite the continued decline in revenues in the last six analysed periods, digital revenues were still higher by 15% compared to the revenues of the first analysed period. Streaming revenue increased the most, followed by performance right. Total revenues were down 2.6% from the first period analysed. It is streaming revenue that has contributed most to the recovery of total revenue. Streaming revenue accounted for more than 46.8% of the global music industry's total revenue.

Table 2: Global revenue music industry percentage changes (2006-2018)

	Physical	Digital	Streaming	Performance right	Synchronisation	Sum
2006						
2007	-13,5%	35,0%	0,0%	20,0%	n/a	-6,7%
2008	-15,6%	25,9%	50,0%	8,3%	n/a	-7,1%
2009	-12,6%	8,8%	33,3%	7,7%	n/a	-4,1%
2010	-14,4%	5,4%	0,0%	0,0%	0,0%	-8,0%
2011	-7,9%	7,7%	50,0%	0,0%	0,0%	-1,3%
2012	-7,3%	4,8%	66,7%	14,3%	0,0%	1,4%
2013	-11,8%	-2,3%	40,0%	12,5%	0,0%	-2,7%
2014	-10,4%	-7,0%	35,7%	5,6%	0,0%	-2,8%
2015	-5,0%	-5,0%	47,4%	5,3%	33,3%	4,3%
2016	-3,5%	-15,8%	67,9%	15,0%	-25,0%	8,8%
2017	-5,5%	-12,5%	40,4%	4,3%	0,0%	8,1%
2018	-9,6%	-17,9%	34,8%	12,5%	33,3%	9,8%
%	-71,2%	15,0%	4350,0%	170,0%	n/a	-2,6%

Source: Own illustration

The results of the multiple linear regression analysis, presented in Table 3 (Table Anova), confirm the strong correlation between the total revenues of the global music industry and the income of individual segments of the global music industry. R-Square is 0.99897 which confirms the very strong connection. Adjusted R Square, the correlation coefficient for smaller strings, is 0.98846 which confirms the value of the result. The significance of the regression is also evidenced by the Significance F value of 5.53204E-12. The Significance F-value proves that at least one of the regressed variables significantly affects the value of the dependent variable. In our example, the P-value for the Psychical, Digital, and Streaming variables is less than 0.01, which means that they have a significant impact on the dependent variable, or total revenue. The P-value for the Performance right variable is 0.113076, which is more than 0.01, and we can say that it does not significantly affect the dependent variable. The revenue trend of the global music industry is shown in Figure 1. The results of the analysis of the music industry revenue trend, by segment, can be divided into three basic phases:

a) P ('psychical') - The period from 2006 to 2015. The dominance of psychical income.
b) D ("digital") - Period 2015 to 2017. Total revenues are starting to grow continuously, with revenues from digital and other revenue models taking over.
c) #S ("streaming") - the period after 2017. Streaming revenue will assume a dominant position within the music industry's revenue stream.

The period we marked P ends in 2015. The music industry's revenue is predominantly alimented from the sale of physical sound carriers. After that begins the period we have marked D. This is a period where, after a more annual decline in revenue, the revenues of the entire music industry are rising again.

Revenues from digital download models are already declining, but streaming revenue is rising sharply. In 2016, revenues from psychical and digital are declining and streaming and performance are right. In the same year, streaming revenues were higher than psychical revenues for the first time. The post-2017 period, denoted by #S, represents the future of the total revenue structure of the global music industry. As Moor, IFPI's Chief Executive, points out, we have now seen four consecutive years of growth driven by great music from incredible artists in partnership with talented, passionate people in record companies around the world who help them realize their creative and commercial potential (IFPI 2019). Streaming revenue will be dominant, followed by performance right.

Table 3: Table ANOVA

SUMMARY OUTPUT

Regression Statistics

Multiple R	0,99948696
R Square	0,99897419
Adjusted R Square	0,99846128
Standard Error	0,07129724
Observations	13

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	39,60241	9,900603	1947,673736	5,53204E-12
Residual	8	0,040666	0,005083		
Total	12	39,64308			

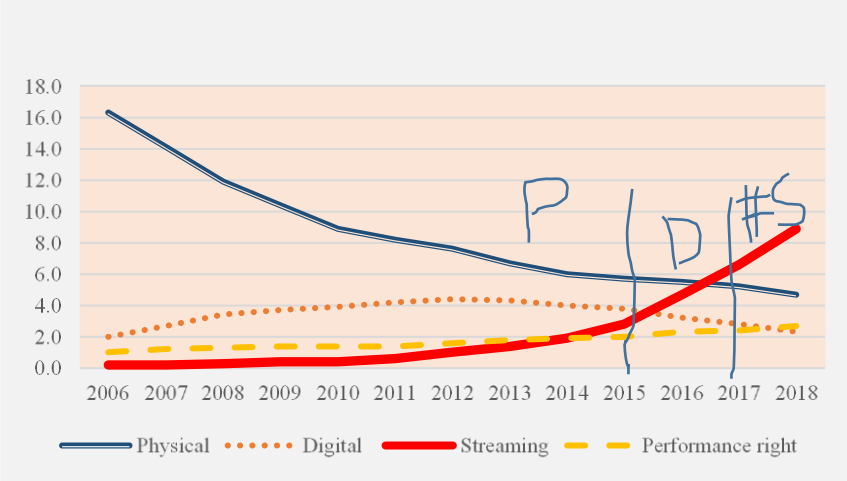
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99,0%*	*Upper 99,0%*
Intercept	1,84492454	1,324219	1,393218	0,201044492	-1,20872888	4,898578	-2,59834	6,288191
Physical	0,91835679	0,049151	18,68451	6,94919E-08	0,805015089	1,031698	0,753437	1,083276
Digital	0,93495775	0,142494	6,561377	0,00017636	0,606365684	1,26355	0,456835	1,413081
Streaming	1,01943797	0,049392	20,63981	3,18038E-08	0,905540235	1,133336	0,853709	1,185167
Performance right	0,58172401	0,326946	1,779268	0,113076708	-0,17221419	1,335662	-0,51531	1,678754

Source: own illustration

In the analysed period from 2006 to 2018, streaming revenue grew at an average annual rate of 39.86%. Revenue from performance right, in the analysed period, grew at an average annual rate of 7.78%. The results of the analysis are shown in Figure 2. The streaming revenue regression analysis interpreted 98.34% of the changes and the performance right regression analysis interpreted 97.48% of the changes. Significant F was 5.53204E-12 which confirms this analysis. The P-value streaming of 3.18038E-12 shows that streaming revenue significantly affects the movement of total revenue. Unlike streaming, P-value Performance right is over 0.01 and does not significantly affect overall revenue trends. From the graphical representation of the exponential regression in Figure 2, we can see the difference between the income trends of the two independent variables. Streaming revenue has grown sharply in recent years, which is in line with overall revenue trends. In the last analysed period, they account for almost half of total revenues, or 46.84%. The other major segment of the global recorded music industry, performance rights (which the IFPI defines as the "use of recorded music by broadcasters and public venues"), increased in sales by just under 10%, a huge leap (McIntyre 2019).

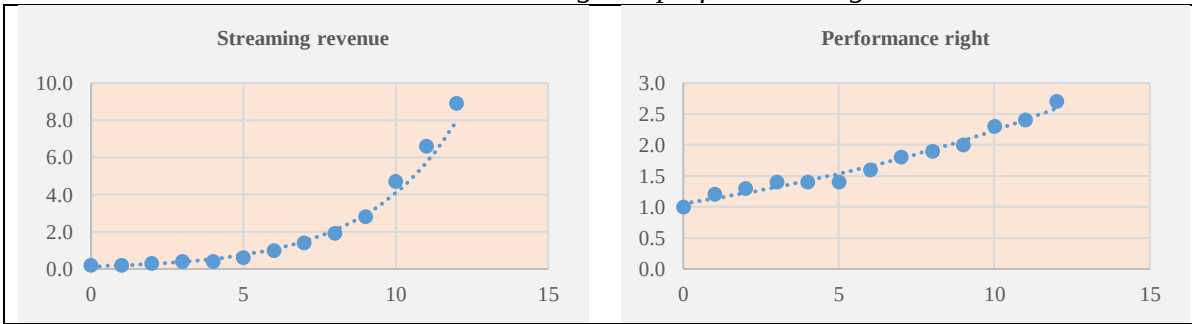
Performance right revenue is increasing slightly exponentially. In addition, they accounted for 14.21% of total revenues in the last analysed period.

Picture 1: Global recorded music industry revenues 2006-2018 (US$ bill.)



Source: own illustration

Picture 2: Streaming and performance right



Equatation	$Y=0,1427e^{0,0335x}$	Equatation	$Y=0,1427e^{0,0749x}$
R Square	*0,9834*	R Square	*0,9748*
Significance F	*5,53204E-12*	Significance F	*5,53204E-12*
S	*39,86*	S	*7,78*
P- value	*3,18038E-08*	P- value	*0,113076708*

Source: own illustration

4.2. Revenue trend prediction in global music industry

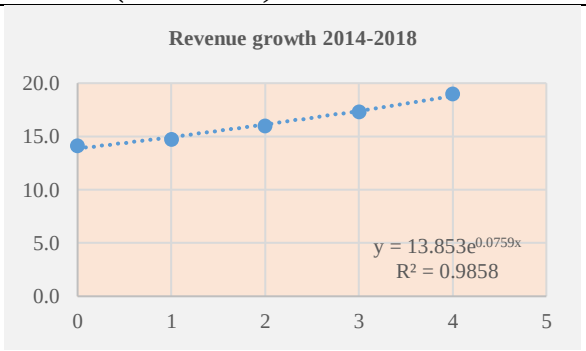
The global recorded music industry is expected to close 2019 at roughly $20-$21 billion. Goldman Sachs glowingly forecasts today's numbers will more than double to $45 billion by 2030 (a number that does not include the separate global live music market that *Pricewaterhouse Coopers* forecasts to reach $31 billion by 2022 - just two years from now) (Csathy 2020). Estimating revenue growth should be done with caution, as musicians' habits have changed. There are more and more independent musicians who are more focused on making music than building a career in the traditional sense. Daniels (2019) points to this by referring to Midia's research: Half of independent artists said success looks like building up a fan base of any size, which only 35% of label artists said. Those numbers were almost reversed when musicians were asked if success looks like building a large global fan base —37% of independent artists agreed, compared to 52% of label artists.

Table following on the next page

Table 4: Revenue growth and prediction (2014-2022) US$. bill.

2014	**14,1**
2015	14,7
2016	16,0
2017	17,3
2018	19,0
2019	***20,3***
2020	***21,8***
2021	***23,6***
2022	***25,4***

14,1	
14,7	4,26%
16,0	8,84%
17,3	8,13%
19,0	9,83%
Average	*7,76%*



Source: Own illustration

The model of forecasting the growth of total revenues is shown in Figure 4. The results of the analysis of the growth of total revenues in the period from 2015 to 2018 showed that the revenue will grow at an average rate of 7.76% per year. The average increase in total revenue corresponds to an increase in performance rights revenue. By modelling income in exponential regression, we can expect revenue of $ 25.2 billion from 1999 to reach 2022. The trend of revenue growth should also be included in the forecast analysis. In the last analysed period, the upward trend is 9.83% which is more than two percentage points higher than the average. Because of this, we can expect that with unchanged conditions in the global market, revenues will be 25.2 billion $ realize even before 2022.

5. DISCUSSION

The music industry has gone through three fundamental stages of development. In Figure 1, we labelled them: P ("psychical"); D ("digital") and c) #S ("streaming"). Phase P is determined by revenues from physical sound carriers and listening to music in conditions that do not imply mobility. The development of digital forms of music has made it possible to listen to only certain music numbers, make it easier to download music from the Internet and piracy, and mobility. Streaming represents a complete negation of the first phase and completely changes the social paradigm of consuming music content. Analysing the development trends of the "new music industry" raises new questions for research:

- Will the decline in revenue from vinyl album sales stop and how much nostalgia for times past will affect the ultimate disappearance of the classic record label?
- Digital content revenue is steadily declining, so the question is whether there will be a market for such content in the future.
- What is the upper limit on streaming revenue at which the market will reach saturation?

The answer to all three questions is related to our first research question in the paper. Streaming revenue helps recover total revenue, but total revenue has only just returned to 2006. Additionally, music consumption habits have changed and music is no longer purchased as a collector process. Therefore, it cannot be reliably stated how successfully streaming income will offset the cannibalized psychical income. The answer to the second research question is shown in Table 4. Total revenues in the last four analysed periods grew at an average rate of 7.76% per year. Should this trend continue, we can expect a return to 1999 revenues as early as 2022.

6. CONCLUSION

The music industry has gone through a phase of changing its business model. The business paradigm, inherent in all categories of the old media industry, based on the sale of physical

sound carriers, has been replaced by new revenue generation models. The pipeline production based business model has been replaced by a streaming model. In addition to the continued decline in revenue from the sale of music on physical sound carriers, the platform economy model is increasingly conquering the global market. In addition, performance right revenue is increasing year by year. Global revenues have been rising for four years in a row and it can be concluded that the music industry is recovering. Revenue projection shows that you can expect income from a period when you only came from a psychical model.

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WHEN NEGOTIATED SEXUALITY BECOMES A LIFE STYLE: ON THE CULTURE OF THE WORLD OF PROSTITUTION

Fouzia Borj
Hassan II University of Casablanca
19, Rue Tarik Ibnou ziad, Bp 9167 Mers Sultan, Casablanca, Morocco
fouziaborj.sociologue@gmail.com

Moulay Sadik Maliki
Hassan II University of Casablanca
19, Rue Tarik Ibnou ziad, Bp 9167 Mers Sultan, Casablanca, Morocco
sadikmaliki.moulay@univh2c.ma

ABSTRACT
The present study seeks to understand the social structure of prostitution as a profession and the meaning that sex workers give to their behavior. It also aims to get insights into the characteristics of the culture and values of the world of prostitution. Forty (40) women, aged 18 to 46, were interviewed in semi-structured individual interviews. The study was conducted in Morocco between 2003 and 2009. Based on a qualitative approach, the study was carried out in three patterns or schemes, namely street corners (almawqaf), closed brothel houses and city hotel bars. Their testimony sheds light on the unstable and precarious living conditions that make women enter the world prostitution, the role of procuring and violence as prostitution norms, as well as the sex economy which makes individuals aware of and willing to justify their status based on economic rather than traditional social criteria.
Keywords: *deviation, economy, exclusion, integration, prostitution, sex workers*

1. INTRODUCTION

Several studies have focused in their interpretation of prostitution on the variables related to poverty and the social status of sex workers; however, little attention has been geared towards the variables related to individual aspirations that affect the behavior of sex workers longing to have a particular social status. The relationships between the components of each scheme (sex workers, intermediaries, and customers). Such relationships are mutually beneficial within the community of sex workers where the economic capital serves as intermediary for the production and consumption of human 'flesh' or 'body'. The volume or importance of financial gain has a great impact in the 'ranking' of the sex worker inside the scheme of the world of prostitution. In other words, sex workers are ranked depending on the importance of income they bring to this scheme; their 'place' is related not only to their ability to attract as many customers as possible, but also to their capacity to bring in customers ready to pay more and their bargaining, extortion and blackmail strategy. The economic capital is, thus, the absolute value of the prostitution market. It is the navel point of work and the mechanism that turns sex workers into production tools for sexual exploitation and a means whereby men/customers abuse the body of women who are subject to the law of supply and demand (Borj,2019: 95-96). Servais and Laurend (1965:263) consider prostitution as a kind of social behavior resulting from the absence of certain basic conditions and as a form of social exclusion. An individual's attempt to fulfil their aspirations through prostitution or sex work is due to social inequality; In countries where social protection and stability are guaranteed, there is gender balance and equity; however, in countries where the relationship between men and women is based on inequality, where education and employment are hardly accessible to women, the only resort is prostitution. Social space undoubtedly prepares women's body to become a sex worker and sex is valuable in such space.

In this respect, Bourdieu (1988: 16) states that "the body is patterned as gender-specific through perceptions and gender division." Society controls women's body in favor of male dominance, which enhances the image of woman sex worker who provides sex pleasure and satisfies man's desires and wishes. In our society, we are perhaps hiding behind the schematic and organized consumption values of sex within an economically complex prostitution scheme (Borj,2019). How would it be the case when many women suffer from poverty, fragility, vulnerability and economic violence? The experience of sex workers is determined by their interaction with and classification of clients; the long or limited experience of sex workers in this domain is closely linked to their own curriculum vitae and their relationships with intermediaries and procurers (Matheieu,2015: 90-110), be it in the Hajeb city scheme, the city hotel scheme or the Almawqaf[1] (street corner) scheme. Also, the experience of a sex worker is fundamentally linked to her knowledge of and compliance with the rules of the profession rules and the period of work. The type of sexual services provided by sex workers is often a key determinant of the relationship with the client. In the world of prostitution, t appears that services are often divided into legitimate and illegitimate practices, i.e. they are divided into practices that are perceived as being more consistent with the natural scheme in relation to men (vaginal practice) and this model appears to be the most consistent with the patterns of sexual division of the social world. Sexual division of labor, it should be noted, is organized according to a hierarchical order positions: (higher/lower, dominant/dominated and male/female (Bourdieu, 1988:23-28). Thus, natural sexual services are the action available to the sex worker, for they are the most legitimate practices in the world of prostitution, and whereby sex workers must compete with each other. Pervert sexual practices, however, are, in the sex workers' view, practices that violate this rule (Mathieu, 2002: 99-116).

2. METHODOLOGY

The data used in the present study was collected between 2003 and 2009 with the emphasis was primarily laid on primarily getting insights into sex workers' behavior and its relationship to regulations embracing (governing) it in an attempt to uncover the meanings that actors in the field of prostitution exchange. We managed to conduct 40 semi-structured with sex workers. The field study covered the Moroccan cities of Meknes and Hajeb in its surrounding region, located in the north east of Morocco, and known as areas having hosted brothels built by the French colonization, where sex was legalized and regulated. After independence, these brothels became illegal houses of ill repute, especially in Hajeb area, which, in the folk or popular memory, is considered as a center for the "Houses of Whores" and represents a market for public and non-public prostitution. The specificity of the study area is of crucial importance in so far as we plan to understand the meaning that actors in this filed give to their behavior, behavior that makes of the world of prostitution a world with stable and fixed rules and norms. Our approach, however, does not claim accuracy and comprehensiveness. Our research sample was limited to women engaged in prostitution in three areas, namely brothels, Rif hotel bar and the street corner "almawqaf " in the city of Meknes. The interview guide was tested with some of the research respondents to scrutinize the questions and check their validity; multiple interviews were required to explore the reality of the research. On the other hand, we also relied on observation through participation in order to carry out a descriptive reading of the three schemes. However, we were not able to access the houses of sex worker in the city of Hajeb and had to confine ourselves to observations of the Almawqaf and hotel schemes in a bid to uncover the various social processes characterizing sex workers' behavior; for Hajeb scheme, it was necessary to use intermediaries to bring sex workers and meet them in other homes, and had to forcibly stay up late in the Rif hotel (Meknes) and sit with sex workers at the Almawqaf for four consecutive days.

[1] a place where people (workers, cleaning women and sometimes sex workers) gather waiting for work opportunities

Given that the interviews with the respondents sought to analyze the social structure of the community of sex workers, we tried to identify and bring to light three main elements, namely income, relationships with family and the culture in the world of prostitution.

3. COMMODIFICATION OF THE BODY AND SEXUAL PRACTICES

The structure of prostitution knows a social dynamic that makes the body not only an object of negotiation but also an economic capital for the production of sex. Sex workers, it should be noted, represent production tools within this structure, from which the scheme of procurement derives its legitimacy and power, and, where sex workers operate within the framework of specific rules and strategies to exploit clients. The sex worker's experience and duration in the profession remain a key determinant of gaining social status within the world of prostitution. While sex workers enter prostitution to improve their income, the culture of the social environment in which they live increases the maturation of the decision to engage in prostitution.

4. SEX WORKERS' INCOME FROM PROSTITUTION

Sex workers' income is subject to the supply and demand variables and is affected by the number of customers that sex workers 'receive' on a single day, during days off, religious and national holidays as well as the nature of the sex services they provide to the customer. Based on the interviews we have conducted with respondents from the city of El Hajeb[1], we discovered that these respondents were ready to sex worker with more than one customers per day and that the average number of customers ranges from two to fifteen per day, especially when it comes to short sexual acts (or tricks). The number of customers a sex worker gets in depends on different variables, such as young age, beauty and sew experience or professionalism. What is conspicuous is that the respondents confirmed that some of their colleagues receive up to twenty (20) customers per day.

Table 1: Types of sex services and their rates

Type of service	Definition	Rate
Short sexual act (trick)	Direct sexual intercourse or act	50 DHS
Tray	The customer wishes to spend some time with the sex worker without any sexual act; that's why, the customer is offered soft or alcoholic drinks or cannabis on a tray which he can consume while caressing and kissing the sex worker;	25 DHS
Tray+ short sexual act		25 DHS + 50DHS

Source: Borj, 2019, fieldwork

Table 2: Income of Sex workers in EL Hajeb

Nature of income	Minimum	Maximum
Day Income	250 DHS to 350 DHS	More than 350 DHS
Night income (sleepover)	300 DHS to 500 DHS	More than 500 DHS

Source: Borj, 2019, fieldwork

Despite the sex workers' income for every sexual act, the speed with which the sexual act takes place makes the daily income far outweigh the night income. While the 'sleepover' does not take place in a permanent way, the high daily income is due to the high demand for short and rapid sexual acts.

Receipts from prostitution in El Hajeb scheme can reach their peak mentioned above during days off and holidays, i.e., weekends, national and religious holidays and the Holy month of Ramadan. These receipts vary from one season to another. For example, in summer, unlike winter in which the number of customers decreases, the currency /boom is very high, especially during the months of July and August, as is confirmed by one of the respondents (S): " There is a lot of work ". Although sex workers' income is large, such income is subject to the logic of exploitation; the intermediary keeps it until the weekly agreed upon day. The income obtained is then divided by two after the deduction of "expenses", i.e., the living and the Makhzen (state) taxes, which usually range from 100 DHS to 400 DHS per sex worker and per day. The sex workers get a DHS 50 wage, and the intermediary disposes of the sex workers' income as she sees it fit as long as she the one who keeps every single cent the sex workers get; the sex workers have no choice but accept the situation and the share they receive. One of the sex workers explains this by saying: "you are obliged to accept the fact that intermediary keeps the day and night income and that she gives you what she wants". The intermediary is usually the owner of house or the "means of production", as it were, such as the bed used for sexual acts, the tray in addition to 'the training that she gives to new sex workers as to the different types of sex'. If at all the sex workers are obliged to disclaim part of their income in favor of the intermediary, be it within the scheme of EL Hajeb or the scheme of 'Al Almawqaf'[2], it is because the scheme of 'procuring' provides the sex workers with the opportunity of working in safe and permanent conditions. Through control of the sex workers' economic interests, the intermediary imposes their own regulations and laws. This very fact is legitimized by the intermediary's ability to reduce the sex workers' work opportunities or to spread rumors' that such or such sex worker suffers from sexually transmitted diseases in the event of rebellion or request for higher pay. The economic function of procuring is a kind of authority through which a form of control is exercised over sex workers and ultimately all the other components of the prostitution scheme; it interferes not only with income and pay, but also with the circumstances and rituals of the work of sex workers. Consequently, "procuring" is the foundation of the structure of prostitution world. It is important to note that some sex workers get their income in cash, while others may get in kind. A common practice, for example, is that they may buy gold and jewelry from a Jeweler known for all intermediaries and sex workers as the bank of sex workers in the city of EL Hajeb. Perhaps, the age factor leads many sex workers to invest in gold, as (F), one respondent states: "I must make money and buy gold". The reason for this, according to El Hadraoui (1986:54), is that they remain under the mercy of what they call "the force of time" that is constantly threatening them, given that their only capital is their bodies and their struggle against and over time is the greatest and truest diagnosis of their desire to achieve their projects. The 'hotel' community is the ideal example of utilitarian society; within such a community, social relations can be analyzed accurately and in real terms only through the exchange of benefits. The sex worker is therefore, the primary and fundamental driver of the economic cycle, and particularly the consumption process at the hotel bar. The first question the sex worker asks when she goes into the hotel is how the night will be, whether she will get a night-time customer, a customer who is willing to have sex in the car, or she will leave the hotel and go back home empty-handed. In fact, the income of hotel sex workers is subject to many factors, especially age, beauty and the sex worker's experience; her work in the hotel bar scheme depends on the 'sleeping over/ overnight stay'; the number of customers is higher during weekends. The average sex worker's nightly income within the hotel bar scheme can go up to DHS700. In addition, the sex worker's prestige within the hotel bar scheme depends on how skillful and cunning she is in coaxing customers into consuming as much alcohol as possible. It is important to note that sex workers' estimate of their income remain inaccurate because of many considerations, of which the most important is the customer's social status. Interviews with "almawqaf" or "street corner' sex workers have revealed that their income was lower than

that of Hajeb houses scheme and the hotel bar scheme. This can be accounted for by the low demand and low rates sexual services; the average number of customers ranges from 3 to 4 customers per day. Given that the sex worker's income depends on the age and beauty variables, 'almawqaf'/ side walk' sex workers, as noted before, are usually comparatively older and, therefore, not likely to have lower incomes in view of the nature of customers, as can be seen in the following table:

Table 3: Type of sexual services and their rates

Type of service	Rate
Short sexual act	DHS 20
Sleeping over/overnight stay	DHS 100
Anal sex	DHS 50

Source: Borj, 2019, fieldwork

It appears from the table above that the rates of sexual acts are very low and that the sex workers' income is far from meeting their basic needs; there are those who receive, at most, two or three customers; at times, days and days elapse before the sex worker gets a customer. What is striking is that conflicts take place among sex workers within the 'almawqaf/street corner' scheme over customers, service rates and the nature of the service. One of the respondents (S) says: "The profession has been lost because there are many women who offer customers abnormal and perverse sexual services like anal sex, which leaves many others unemployed". Most respondents refuse "sleeping over" or 'overnight stay services lest they are victims of aggression or violence or in order to preserve their reputation vis –à-vis their children, especially as 86% of "street corner" sex workers are mothers who support their families. Because of the poor income of "street corner" sex workers and the fewer customers they have, they sometimes find themselves obliged to practice begging at "Lalla Aouda" square. One of the respondents (L) says: "We practice begging and prostitution"; they even harass passersby, lawyers and people visiting the court asking for money ("One dirham please sir"), as field observation has proved. The correlation of these two phenomena, i.e., prostitution and brothels, overshadows and conceals the situation of those women who not only suffer from fragility, vulnerability and poverty, but also the selling of whose body was of no benefit. They had the opportunity to fulfil their projects during their early years in professional prostitution, but time played games with them and the sky's stick hit their heart. and could not fulfil their wishes; age was a fundamental variable in the sex worker's life. Combining prostitution and begging can be accounted for in terms of the nature of the pressures that the sex worker faces; from the very beginning of her professionalism, she has been forced to support her family and children, which weakens her potential for future investment. However, given the sex workers' precarious situation, we can refer to sex work in the 'almawqaf/ street corner' scheme as "legitimate, subsistence or survival prostitution."

5. INCOME AS COMPLICITY BETWEEN SEX WORKER AND FAMILY

In the Moroccan society, one may easily imagine the family's position and attitude vis-à-vis prostitution and the conflicting, tense and strained relations that may ensue between the sex worker and her family. Moroccan society not only denies sex workers' right to social integration and considers them as outcasts and pariah, but also tries to make this rejection and marginalization institutionalized. This very fact may be ascribed to the fact the notion of /l3ar/ (shame). Being a sex worker amounts to shaming the family's honor. In trying to save a sister, wife or daughter, men are in fact trying to protect and save their own self-image. Also important here is the notion of notion of "self" or "self-image", "face". In other words, in Moroccan society, and given the sense of togetherness in tribal-like families, a person's "self" is not

defined in terms of personal success, achievements and merits, but in terms of a ramification of relations with the family entourage as well; defining a man's "self-image" goes beyond this to include the view, attitudes and opinion of society vis-à-vis the female members in his family. (Maliki et al, 2019: 466). On the other hand, one has the right to question the state of a society that does not blame itself for its hypocrisy and acceptance to "feed off stigmatized women's bodies". Such hypocrisy is reflected in the transformation of the traditional relationship between the family and sex worker and some of the stigma is lifted due to economic needs; Ironically, sex workers, who are usually treated as morally corrupt and who have pushed to these extreme lengths by abuse, poverty and trafficking are forced to secure their needs as well as those of their families. In this connection**,** 'S', an informant, says that "my mother understands my situation, for I pay water and electricity bills as well as all the daily expenses". 'F', for her part, states that "I work to support my mother, brothers and sisters; my father left nothing of value that we can rely on. I am the eldest in my family and I have to support and take charge of them". 'Kh', another informant, makes it clear that "my parents are old and I have to support them". 'A' shows that "I spend part of my income on my daughter; I left with a woman to look after her in return for a monthly sum of money." Sex workers are women who work themselves into the ground (work hard) in the sex market while society is undergoing crisis economic transformations that are tearing families and individuals apart; the majority of female respondents said that their families were aware of their practice of prostitution, especially mothers, although they do not encourage them to take that profession; they do not show a clear attitude, and prostitution for them is not sinful; it provides them with an important income. Because of the stigma attached to prostitution, sex workers are usually forced to engage in prostitution outside their home towns; the pattern of social values and attitudes, moreover, is changing given the reality of the family vis-à-vis the new demands of life and a new pattern is emerging which socially accepted. The relationship between sex workers and the family in Morocco, it should be clear, is a reflection of wealth and labor force distribution in society.

6. THE CULTURE OF PROSTITUTION: DEVIANCE, NORMS AND VALUES

The interaction between the components of prostitution paradigm helps actors to get rid of the regular and formal rules and norms within society and then replace them by unacceptable standards and norms (i.e., perverse means) which enable them to achieve the goals of the world of prostitution. These deviant methods characterize the world of prostitution, whether in brothels, hotels or almawqaf (street corner) and constitute part of a specific culture comprising deviant values allowing it members to gain money and make profit in ways unacceptable to society. The culture of the prostitution schemes has been founded to solve the problem of social adjustment women and girls suffer from within society. The prostitution lifestyle provides poor, vulnerable and fragile actors with an opportunity for social equality; this, however, is not the case with women belonging to a higher social class. If it is true that the economic and social conditions of social actors have led them to become professional sex workers, it is also true that the culture of the world of prostitution addresses the problem of social equality that sex workers face in their milieus; on top of that, the function of the culture of prostitution was created to serve that specific purpose, especially given the stigma and social exclusion to which sex workers fall prey in society. When they enter into the occupation, sex workers, stigmatized and labelled as deviants in their own areas, are forced to leave their home towns toward the cities of El-Hajeb or Meknes, two areas of which the culture is, as it were, well-suited for the social status of sex workers. Upon entrance into the profession, new 'recruits' have to find out what its requirements are and to learn specific values and rules relating to how to behave with customers. Prostitution, Velarde (1975) argues, has its own ideology and its own culture; it also comprises a sort of training that any new comer should receive until they have become members of that new and suitable social structure.

Social actor within the world of prostitution are deviant people who suffer from social exclusion; their situation, moreover, is a necessary reaction to such exclusion. Therefore, they strive to become social actors in their new community and/or society. Through this process of marginalization, actors find themselves together with other social actors in a world which they deem acceptable to them, thus, becoming active individuals who have their own identities, abide by the rules and enjoy a certain value within a social world where new social relationships are built. Sex workers feel a sense of belonging to this social world and try to build social relations with other actors in the same profession. Thus, working within the socio-cultural world of sex workers helps sex workers feel a certain confidence nurtured by a culture that justifies their 'deviant' behavior. The problem of adaptation that sex workers may suffer from is not present in this society or community, of which the culture comprise several variables that help sex workers adapt socially and survive within the world of prostitution.

6.1. Sex workers justifciation and explanations

Sex workers' justification and explanation reflect a double standard of values, i.e., sex workers place the values of the world of prostitution in position higher than that of the larger society and its values. They ascribe the choice of their profession to their difficult, fragile and precarious economic, social and family conditions. They, on the other hand, feel frustrated that, after years of hard work as sex workers, they have not succeeded in fulfilling their ambitions, as is exemplified by a forty-year old sex worker's statement: "I thought prostitution would be profitable, but discovered that it was only sufferings and hardships; you accept to go with men you like and those you don't like. I could even help my husband because I know knitting". During their period of work, some of the sex workers moved from El Hajeb scheme the Almawqaf (street corner) and from the hotel bar to the Almawqaf. This is the case with sex workers at the Almawqaf because of their old age. The sex workers' attitudes are in line with women's position within patriarchal families, as has already been put forward. In other words, women are economically and financially dependent on men who are responsible for supporting their wives and protecting them wife and protecting her from all the evils and pricks of time, as is clear from what one of the respondents has stated: "every woman would like to have a husband at this time; if I only I could buy a husband; You cannot find men now; there aren't any left at this time". On top of that, sex workers describe their job/work as not only religiously forbidden and cursed, but also with no future. In this connection, 'S' says that "ill-gotten money goes in filthy and forbidden and cursed things, easy come, easy go"; she adds, "we are sick of this life, we see the same people day in, day out, year in, year out; you can make DH 10.0000 per day, but in the morning you'll have nothing and you have to go to work again". It is clear that the sex worker's conscience and awareness of her future in El Hajab remains a sort of inertia and complacency, in the absence of a real initiative to reintegrate these women into society, because it remains within the limits of "God forbid us", "this is our fate/ destiny". This is not the case with hotel sex workers, whose main goal is to marry a foreigner and emigrate; this is, according to them, the reason why they continue to use the hotel bar as their favorite place f work. In this respect, a twenty-year old sex worker (a university student) says: "my main goal is to marry a foreigner and emigrate with him, so that I can get rid of poverty; for this, I try to make friends with many foreigners during my work." The main concern of some respondents within El Hajeb is to save money to fulfil their future wishes and projects: "I'll buy a house and settle down in it with my mother and son; to do so, I need to work hard and to squander money on futilities; I need to work more and hard, so that one day I'll be able to live this hell after buying a house." 'S' states that "I did different jobs; I worked in dairy stores, cafés, restaurants and the like. However, to be honest, these jobs do not pay well; you kill yourself for nothing." As is clear, the sex workers' statements reflect the double standard of values they resort to justify their 'deviance' and entrance into the prostitution profession.

6.2. Adaptation to the community of prostitution and risk management

The life of sex workers is very complex and the stigma with which they labelled represents the ground for their social exclusion. They run the risk of being arrested by the police as soon as they leave the hotel; that is why, most of these sex workers agree with taxi drivers to pick them up at the hotel's entrance gate to avoid 'man hunt'. 'R' says: "I always have a DH50 bribe ready in my hand, so they don't take me to the police station." Although Moroccan legislature provides for both punitive, deterrent sanctions and financial penalties for anyone who facilitates, assists or protects the practice of prostitution or brings people together to prostitution (Taoufik, 1988:177), it remains that these sanctions are imposed/inflicted solely to sex workers and not to their customers, which is a clear discrimination against the sex worker, knowing that 'it takes two to Tango' and sexual relationships involve both parties. Street corner sex workers expect the police to come at any time, especially as the 'work place' (almawqaf) is located next to the first instance court and in a public park. While it is true that these sex workers who work on the street corners (almawqaf) are not under the authority of procurers, who usually provide protection for them, they nevertheless remain easily subject to arrest by the police. Sex workers, moreover, usually face a very tough competition from other sex workers, which results in very conflictual relationships them. New comers to the prostitution scheme are usually subject to harassment from other sex workers, especially if they turn out to be young and beautiful; they are also subject to all sorts of swindle, molestation and circumvention to keep them out of the field, for fear that they attract most customers, knowing that beauty and young age are essential variables in the world of prostitution. The importance of their role in the prostitution scheme and the extent to which customers are satisfied ensure the latter's loyalty, be it in the hotel bars or the brothels in the city of El Hajeb. Entrance into the world of prostitution requires adaptation to a new lifestyle and anew new community; such adaption, in turn, necessitates acquiring the necessary means and mechanisms, which will make it possible for them to compensate for the social exclusion and inferiority complex to which they are exposed. As a result of this social exclusion, sex workers become active in the world of prostitution and try, together with other sex workers, to build a form of integration and adaptation in the world of prostitution in which they are accepted and recognized. They play the role of sex workers to acquire a positive status, which them an identity and helps them break the standards in order to rebuild themselves as active social members in their new world. They, therefore, find an opportunity to obtain money, company and social stability. This being the case, it can be deduced that sex workers strive to find alternatives within the prostitution community when they try to justify their 'deviation'. They try to persuade themselves that their work is just a profession like any other profession, so they can overcome and transcend, as it were, their inferiority complex, believing that their lives may change by marrying one of the procurers or customers. Sex workers are also able to adapt quickly to satisfy the customers' different wishes and personalities as well as their behaviors. They are ready and willing to deal with ages, ranging from the rich (Moroccan or foreigners (Arabs and others), corporate managers, entrepreneurs and expatriates. Sex workers are also willing to do their work in any way and regardless of the place, in a car, villa, hotel, house and elsewhere, and with anyone, provided they get the agreed-upon rate. The scheme of the city of El Hajeb reveals that sex workers are willing to have sexual intercourses with teenagers, soldiers, employees, primary school teachers, expatriates, farmers, construction workers and authority officials (police officers). Sex workers in El Hajeb brothel houses, however, perform their work in procurers' houses and customers may request them to come to their private homes. In such a case, a "Rakkas", a person trusted by the procurer, accompanies the sex worker to the customer's house as a silent shadow. Customers of sex workers of the 'almawqaf' (street corner) range from farmers having files to settle in the court to day labourers, journeymen, greengrocers and old, retired people.

'S', pointing to an old man with a walking stick, says: "look, here is one of our customers". The street corners sex workers do not worry about the customer's status or occupation as long as they are going to obtain the agreed-upon rate.

6.3. Violence, mistrust and suspicion

The circumstances of the prostitution community require that sex workers take or impersonate personalities different than that they actually have in society. Violence is one of the most important features of the culture of prostitution; the fact that sex workers are subjected to violence is usually taken as normal behaviour expected at any moment from certain cruel customers, especially when they accept to spend the night in the customer's home overnight stay. In fact, street corners sex workers (almawqaf) are most likely to be victims of violence. Some sex workers make it clear that despite the stigmatized image they are labelled with and the likelihood of them being beaten, they still venture and go to the customer's home just to get money. Some customers may, besides subjecting the sex worker to violence, take all the money she has collected and force her to have sex with their friends free of charge. For them, these are just morally corrupt people and should be at any customer's disposal free of charge. In this connection, some sex workers state that: "You never know where every overnight stay will take you; you may happen to find yourself with good as with bad people"; "I was victim of "*touiza*", (i.e., gang rape); I accompanied a customer after have received my 100- dirham rate in advance. Once there, the customer invited a group of his friends and they gang-raped me; the customer then took the money, tore my djellaba and threw me out of the house (A twenty-year-old sex worker). One of our respondents says: "A friend of mine and I went for an overnight stay with a customer. From the beginning, I was not comfortable. Although we did not trust him, we went with him to his informal home in a squatter area inside a shanty town. He invited one of his friends and when I saw him I felt more suspicious and worried. I told my friend: (Zahra, your brother has just excreted", an idiom common among sex workers when there is a feeling of danger, suspicious and mistrust. But my friend didn't care about the matter. Face to this, I asked the customer to go to the toilet (which was outside house. He followed me, but I asked him to leave so I can defecate. I ran in the middle of the night running through the fields until I reached a house. The next day, my friend told me that she had been beaten and gang-raped by the customer and his friend, who stole her money (DH 700) and golden chain. Violence against "street corner" sex workers is linked to man's envy and hatred vis-à-vis the sex worker. How come that the body that arouses men in moments of sexual practice is the same body that make them feel disgusted? It is the social stigma and the inferiority complex affecting sex workers in public space. Violence in prostitution is not limited to the relationship between sex workers and their customers; instead, it is a fundamental variable in how sex workers are treated by the procuring scheme; Sex workers in El Hajeb report having been victims of sexual violence when they started work with the procurer. New sex workers are taught sexual practices by 'trainers', especially the procurer and the '*barbou*', i.e., a key element in the person who is a key element in the culture of prostitution in El Hajeb scheme in charge of introducing new sex workers to sex techniques. This person may have recourse to violence against new sex workers in case they refuse to push their boundaries and perform pervert sexual practices. It clearly appears, then, that the culture of prostitution in El Hajeb scheme rests on the new sex worker's literal execution of sexual acts imposed by the "*barbou*", pervert as these acts may be. The procurer may even resort to this '*barbou'* to deform or mutilate the faces of sex workers who fail to comply with the rules of the prostitution scheme or who plan to escape and work with another procurer[2].

[2] It should be noted that some of the interviewees stated that the houses in Brother of El Hajeb include rooms reserved for torture; this room is called « farmaja » (cheese). Among the techniques of torture is forcing the sex worker to eat their own excrement.

The procurer, in turn, teaches new sex workers techniques of depleting customers and of rapid sexual intercourses. It is important to point out that violence against sex workers has become common practice to which they are used. In fact, 73% of respondents said they were subjected to physical violence in their lives, either by the rapist father, husband or by employers during domestic service.

6.4. Opportunism, dubiety and utmost care

As has already been made clear, exploitation has proved to be a fundamental determinant of labour relations within the world of prostitution, be it between sex workers and procurers or between sex workers and customers. Sex workers, however, accept procurer's exploitation because in return for such exploitation, they get services, the most important of which is protection against violence. Sex workers, for their part, serve as procurers at times, especially with regard to the hotel scheme. If a sex worker gets the opportunity to work with foreign customers (victims), she invites her colleagues and obtains 50% of what their pay. A sex worker is, therefore, ready and willing to exploit her colleagues in exchange for them getting customers. She chooses the most beautiful and experienced girl capable of enticing customers into spending great amounts. Hence, many hotel sex workers may switch from the role of sex workers into that of procurers for other sex workers. Sex workers in the hotel's scheme are pretty good at exploiting customers to seize the opportunity of their presence to get the greatest possible amount of money; this is not, however, the case with sex workers in El Hajeb scheme, where the sex worker is not allowed to steal customers or have them pay additional amounts. The rules for work within procurer's homes are well-defined in terms of rate, duration of sexual acts or rate payment. However, thanks to their experience, hotel and street corners sex workers can distinguish between ordinary customers and 'raw' customers, or what they call "victims". Such type of customers are usually the ideal customers that sex workers look for in the sense that they are easy to be stolen. Hotel's sex workers have reported stealing valuable items from customers' home, such as mobile phones, rings, money. Because of their social status, customers usually restrain from filing complaints against sex workers lest they stain their image. Old people, high class members or foreigners (Arabs and others) represent the most suitable kind of customers to exploit. Opportunities for exploitation increase when customers lack sexual experience. The rules that sex workers are taught upon entrance into this sex work scheme is making sure they are not victims of customers' fraud, circumvention and molestation. From the beginning, they are taught not to trust customer and they always claim full pay before service.

7. DSCUSSION: SEX WORK AS LIFE STYLE AND A WORLD OF VIOLENCE

The vulnerable situation of families is one of the main causes of many girls' being sexually exploited by prostitution and procurers' networks. Many of our interviews revealed that some of the sex workers were born out of wedlock and were brought up by single mothers forced to work as maids since their early age. Young girls not lead very difficult lives and go through difficult circumstances, but are also victims of social rejection, which contributes to their entrance into the world prostitution. Money affects women's decision to enter prostitution, especially as women's work is not much a result of their training, education and competencies as a need to earn a living within disintegrated and unstable families. Most sex workers are illiterate and do not possess any training or education likely to help them in their integration (Mernissi, 1986:130). The disintegration of sex workers' lives is not an exception, but a result of social and economic changes that make individuals aware of and justify their status, based on economic standards rather than traditional social norms. Traditional social norms, it should be noted, are losing ground in favour of the important desire for social recognition in the sex work community.

Sex work is not part of the nature of the individual, but is the result of social and economic changes that play a crucial role in the creation of values and norms of human behaviour (Borj, 2019:123). It is ultimately the outcome of the social structure in general, without overlooking the changes that such a structure undergoes. Needless to say, the instability of social actors' status and the general circumstances they find themselves in ultimately determine their reality and ability to influence such reality. The pressure of need and economic imperatives always control the sex workers' status and deprive them of their will. However, it should be clear that absence of real opportunities for these women and their exploitation in unstructured sectors make them easily attracted by procuring networks and institutions. Sex work is a socially and morally condemned profession, but, at the same time, it is part of society's culture if we define an individual's social status in terms of their social dignity, through which that individual gets public social value and recognition (Castel, 1998: 2-3). We believe that it is difficult to determine the nature of the status of the individual-sex workers, because it is linked to the representations of social recognition, social integration - and lack of recognition that determine the sex worker's social dignity (Maliki et al, 2019). Therefore, the status of sex workers remains ambiguous, uncertain and tacitly formed in a mould expressions and concepts intricately linked to public and private space. This double standard unveils a legitimate institution through the need its tries to satisfy. In light of the division of moral labour, prostitution falls within the framework of the "profane" profession, which is organized by society and which illustrates gender imbalances. In any case, social hypocrisy is an element that cannot be neglected when sex work as a 'profane' profession is invoked. Prostitution is an established old craft, which cannot be but organized tools or devices that allow for avoiding dysfunction in the selection of partners in the prostitution scheme. Examples of this can be found in the sex services provided by sex workers to their customers (anal or oral acts), which are sometimes difficult to satisfy in marital context and which render prostitution a profane profession. Prostitution transcends social order, morality, and public health, for it is a socially constructed taboo; it is not a deviance or deviation independent of the society that has contributed to its creation and which defines the permissible and the prohibited. It refers to a double dimension of stigma, as described by Erving Goffman, which is seen as something recognized, and on the other hand, and as a violation of the law on the other hand. Although prostitution is not provided for in any legislation, it monitored, not recognized nor tolerated. In contrast, it is a profession through which represents a means of subsistence for sex workers; more specifically, a profession consisting of a socially recognized interdependent and integrated jobs (Hughes, 1996: 71). In general, it can be said that the profession requires a group of people in line with each other to engage in certain activities involving exchange of money, goods and services (Freidson, 1985:129-130). Procurers unquestionably play a vital role in the world of prostitution, a role that makes of prostitution a structure capable of preserving its cohesion and forces all actors to comply with the rules and customs of the game. All this is ensured through exercising control over all elements of the sex work structure. With the moral aspect aside, it can be asserted that sex work is a profession for people who have decided to take it up.

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ECONOMIC PROFIT AS A MORE APPROPRIATE INDICATOR OF THE FINANCIAL STATUS OF AN ENTITY COMPARED TO ACCOUNTING PROFIT: FRAMEWORK AND CASE STUDY VIA EVA

Dusan Karpac
University of Zilina,
The Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 1, 010 26 Zilina, Slovakia

Viera Bartosova
University of Zilina,
The Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 1, 010 26 Zilina, Slovakia

ABSTRACT

In the current world of uncertainty and continuous change, it is in each business's interest to improve its performance. Businesses have to adapt to changing market conditions and keep moving to maintain their market position. If a company wants to succeed in the fight against competition, it must be able to use its resources effectively. By paying attention to the growth of its value, an enterprise can succeed in the market. In assessing an increase in the value of a business, the business owner must monitor whether its resources are sufficiently valorized. To register this improvement at all, we must be able to measure value. There is a number of indicators by which a company can measure its value. Today, the main goal of the world's largest enterprises is to create value for business owners. In the past, entities preferred to increase primary accounting profit. The modern goal of enterprises, value creation, is achieved through the concept of economic profit. The concept of economic profit consists of many methods of its calculation, but it is also important to know the difference between accounting and economic profit. The aim of the paper is to point out this difference, to describe selected forms and methods of economic profit calculation and to present it in the form of a case study. The subject of the case study is to conduct a financial analysis of a selected company focused on economic profit through the EVA indicator. The results of the indicator calculations were evaluated in the selected time period.

Keywords: *Accounting profit, Economic profit, Economic Value Added, Financial analysis*

1. INTRODUCTION

In today's world of uncertainty and continuous change, it is in each business's interest to improve its performance. Businesses have to adapt to changing market conditions and keep moving to maintain their market position. If a company wants to succeed in the fight against competition, it must be able to use its resources effectively. By paying attention to the growth of its value, an enterprise can succeed in the market. When assessing an increase in the value of a business, the business owner must monitor whether its resources are sufficiently valorised (Weissova et al, 2015). Financial analysis is an essential aspect of the financial management of a business entity and points to the operation of the company. Different forms of profit indicator reflect the state of financial stability of each entity most. Profit is one of the important flow variables. This explains how effectively corporate capital is used in the entity (Siekelova et al, 2019). Entities in the Slovak business sector are increasingly using the concept of economic profit. Modern business also includes modern methods for determining the financial situation and evaluating its performance. Currently, the trend is increasing the value of the company. It is this aspect that motivates owners to achieve their goals and create new ones. To achieve good business practice, it is necessary to measure the achievement of these goals in some way.

For this purpose too, the EVA indicator, originating from abroad, is used to assess the performance of an enterprise using economic profit (Salaga et al, 2015; Olah et al, 2019). Financial analysis is an essential aspect of the financial management of a business entity and points to the operation of the company. The financial stability of each entity is most reflected in the different forms of the profit indicator (Hudakova et al, 2018; Durica et al, 2019). Generally, profit means positive benefits from an activity. In economics, this is usually the difference between revenue and cost over a period. Microeconomic theory distinguishes two categories of profit, accounting profit and economic profit (Hajek et al, 2019; Kral et al, 2019; Yakymova & Kuz, 2019). Economic profit is achieved if the company achieves accounting profit and at the same time can cover the cost of equity. Thus, economic profit is the total income (revenue), which is reduced by economic (actual, relevant) costs. Economic costs consist of the sum of implicit and explicit costs. Unlike accounting profit, implicit costs are also included here, but these are not found in corporate accounting and are not expressed in monetary terms, which is why they are difficult to quantify. The cost of sacrificed opportunities (alternative costs, opportunity costs, costs of lost opportunities) is used to calculate them, which represent the monetary amounts lost by not making the best use of production factors (Kotulic et al., 2010).

2. LITERATURE REVIEW

Measurement of financial performance has been relatively turbulent in the past. This development has been and is still being stimulated by the demand for information on performance in changing economic conditions from investors and managers (Olah et al, 2017). Ende (2017) states that the benefit of analyzing a company's financial performance is to provide information about the company's perspective in the financial view. The financial statements provide information for analysis. It is a tool used by management to obtain financial information about a company. At the turn of the 1950s and 1960s, W Baumol (1962) developed the theory of expansion. In his work, On the Theory of Expansion of the Firm, he describes that the consequence of greater management involvement in decision-making is a shift from profit tracking to business growth efforts. At the end of the 20th century there was a significant change in the understanding of the question “what is the goal of business?”. Until then, the main objective was to achieve a positive accounting profit. In this period the business owner comes to the fore and the goal is to maximize the value of the business. These changes have begun to happen in the developed countries, especially in the USA. In the 1980s, the shareholder value theory was developed in the USA, focusing on increasing the value of owners' input and increasing the value of a business. The authors of this theory are considered Fruhan and Rappaport (Shahid et al, 2017). Economic profit is contingent on making a profit after deducting the alternative cost of capital. Alternative costs are a basic but illusory term in the economy. The general idea is easy to understand - all relevant costs must be taken into account when making decisions. However, the precise meaning of "all relevant costs" and the way in which these relevant costs are measured is not easy. Thus, alternative costs can be defined as lost revenue that a company deprives by not making one alternative but giving priority to another. The complications in measuring alternative costs are mainly due to the fact that they are not recorded in the accounts, they are of an implicit nature and their quantification is possible only when considering two or more variants (Dluhosova, 2004; Colander, 2016).

3. METHODOLOGY

The most well-known and most commonly used foreign indicators using the concept of economic profit to evaluate the performance of the company are economic value added (abbreviated as EVA), market value added (abbreviated as MVA), profitability Return on Net Assets (RONA), IN Economic Value Added (INEVA).

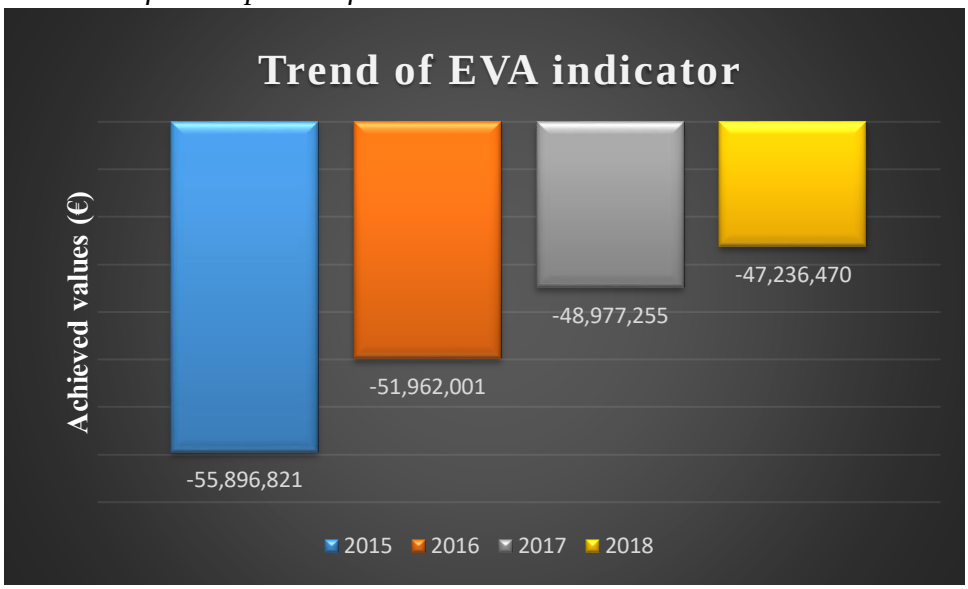
The core features of these indicators are the weighted average cost of capital (WACC) and the Net Operating Profit after Taxes (NOPAT) in determining alternative cost of equity. An interest rate comparable to the level of risk is used to set the alternative costs (Eysenck et al, 2019). The Economic Value Added (EVA) indicator is one of the most important modern indicators of business performance taking into account the concept of economic profit. It shows whether the business increases its value or just earns for its survival. The benefit of the EVA indicator is the valuation of equity and risk-taking. The Market Value Added (MVA) indicator can be quantified as the difference between the market value of the business and the invested capital in the business. The company is trying to maximize the indicator. If the indicator is positive, shareholder value is created and shares are traded with a premium (Jencova, 2011). The Shareholder Value Added concept assesses the performance of an enterprise solely from the investor's perspective, which invests in the equity of the enterprise. The indicator measures the difference in business value for owners at the end and beginning of the reporting period. The present value of the expected cash flows of the enterprise and the residual value of the enterprise at the end of the forecast period are the quantities by which the value of the enterprise is derived for shareholders. Thus, the SVA is based on a discounted cash flow model (Valaskova et al, 2018). In this part of the work we focus on the main goal of the work, which is to perform financial analysis of the selected company. We chose one for this business, which provides public services. For the analysis, we chose the EVA indicator because it has a high explanatory power and includes significant variables. Based on the formula EVA = (ROE - Re) · VK, which we chose for the calculation of the indicator, these variables include equity (VK), return on equity (ROE) and cost of equity (Re). They are among the basic variables that the company has, as they are based on the financial health of the company. The equity data of the company are available from the balance sheet, the remaining two items of the formula must be calculated. The calculation of return on equity is based on the formula ROE = EAT / VK, while the net profit values are obtained again from the balance sheet of the company. Alternative equity cost values can be obtained through a modular method that serves this purpose (Rebetak et al, 2019). In the partial calculations of the alternative cost of equity, we gradually arrived at all the necessary data for years from 2015 up to 2018. The exception was the value of the return on assets of the industry in 2018, which we needed in order to determine the liquidity premium for the company's assets in 2018. We reached the necessary value through the average annual arithmetic increment that we considered the most relevant in this case. Obtaining all the necessary values led us to the final calculation of the main indicator on which we rely in the practical part. When calculating the economic value added of a selected company, we start from the formula mentioned above.

4. RESULTS

After appointing the values of years 2015 to 2018, we get the results shown in the following graph.

Figure following on the next page

Figure 5: Trend of development of indicator Economic Value Added in selected time period



Source: processed by the authors

Based on the values of the indicator of economic value added, as well as calculations leading to this indicator, we brought the stage where it is possible to evaluate the situation of the company on the basis of performance, resp. value creation. The enterprise reports negative EVA values in each reference period. This was due to the continuing negative return on equity and the relatively high alternative cost of equity recorded in each period. In the period of monitored years, the company experienced an undesirable situation where the company does not create value, which results in a situation of disadvantageous business. From the developmental point of view we see an increasing trend of EVA values, resp. decreasing negative values. As this is a positive finding, we can assume that the company is trying to minimize the negative EVA value. However, the disadvantage is that these losses amount to tens of millions of euros. In the case of a selected undertaking, achieving positive EVA values would take a long period of time, since under the given conditions it is not possible to take measures to bring about a fundamental change. The ratio of revenues and costs is the first significant problem of the company. Based on the latest annual report of the last year, the company's cost coverage is less than 36.24%. In this case, the company should reassess its costs to a greater extent, since in terms of revenue 2018 was a successful year when the company had historically the highest number of passengers. Compared to the base year, the number of passengers increased by as much as 53%, but there was no such significant change for the better in terms of profit, although the company also reported cost savings of € 800,000 this year. This is due to investment in transport quality and modernization. Business managers should rework the business plan in such a way that, ideally, the cost tends to decrease more or grow significantly slower than the revenues, which should take an exclusively upward trend, with the company moving in that direction faster than in previous periods. This case study pointed to the evolution of the Economic Value Added indicator of the selected business entity and at the same time to the difference between accounting and economic profit. Although the company could generate accounting profit, it did not create value in the form of economic profit.

5 CONCLUSION

In the context of the globalization of the world economy, the concept of economic profit is increasingly appearing also in Slovak companies. Today, the main goal of the world's largest enterprises is to create value for business owners. Companies in Slovakia are gradually adopting this goal, so it is essential that they are able to measure the achievement of this goal.

Of the domestic methods used to measure the performance of the enterprise, using the concept of economic profit, the method of superprofit is the most used. Abroad, the EVA indicator is the most widely used method of assessing performance for economic profit. The aim of the work was to perform financial analysis of the selected company, through selected procedures using the concept of economic profit to evaluate the performance of the business entity. Based on theoretical knowledge, we have focused on the EVA indicator, which is currently becoming increasingly used in the field. As part of the concept of economic profit, we also provided a description of the other methods used. An important goal of the paper was also to point out the difference between accounting and economic profit. The contrast was pointed out in the cross-section of the whole work.

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IMPLEMENTATION OF THE COMPREHENSIVE ENTREPRENEURSHIP MODEL FOR THE INTERNATIONALIZATION OF ECO-EFFICIENT COMPANIES

Jose G. Vargas-Hernandez
Research professor, Department of Administration
University Center for Economic and Managerial Sciences, University of Guadalajara
Periférico Norte 799 Edif G201-7, Núcleo Universitario Los Belenes
Zapopan, Jalisco, 45100, Mexico
jvargas2006@gmail.com; jgvh0811@yahoo.com; josevargas@cucea.udg.mx

Olga Nayeli Aceves Alvarez
Centro Universitario de Ciencias Económico Administrativas
Universidad de Guadalajara, Mexico
nayeli.acvs.av18@gmail.com

ABSTRACT

The objective of this paper is to analyze the functioning of the integral model of entrepreneurship in a new model of companies that are currently emerging, which aim to be eco-efficient. Therefore, this work aims to study the central perspectives of technology that are based on the phenomenon of entrepreneurship and thus develop a strategy that adapts to companies with an ecological basis to achieve internationalization. This article will analyze a particular company, which specializes in the area of ecological composition, where no chemical product is used to produce the composition, everything that is marketed is made up of a base of alpaca and other organic compounds.

Keywords: *Integral model, ecoefficiency, internationalization*

1. INTRODUCTION

Currently there is a new business model which has as the objective to be eco-efficient. Eco-efficiency is defined as the production of products and services at competitive prices that meet human needs and provide quality of life, while the ecological consequences and the use of numerous resources during the life cycle are progressively reduced. level equivalent, at least, to the estimated capacity of the planet (World Business Council for Sustainable Development, 1991). On the other hand, it is mentioned that ecoefficiency has the purpose of establishing a production of manufactured products of high durability, reducing the intensity in the application of energy for the production of goods and services, maximizing the use of raw materials, managing and dispose of hazardous materials and waste in an efficient and environmentally acceptable manner, have management systems and environmental quality, as well as procedures in occupational safety and health, among other provisions, that will bring them financial benefits and competitiveness (Cantú, 2008, page 78). In both definitions, the authors agree that eco-efficient companies should have as their main objective, to develop quality products at competitive prices, as well as to reduce the environmental impact of producing or offering their products and services. Castro (1998) mentions that ecoefficiency aims to address three relevant aspects that correspond to: 1) the total quality, which involves productivity and quality in the company, 2) the preservation of the environment, which is related to the sustainable development; 3) occupational health and safety (Castro, 1998). Once having a clear idea of what an eco-efficient company is, it is analyzed why this type of ecological-based companies, which, although they contribute to the environment, have many barriers when it comes to wanting to expand into new markets. Most of the companies that adopt the ecoefficient stance, are small companies which have very clean transformation processes because most of their

processes are handcrafted and do not have great waste, in the same way the materials used by this type of companies They are biodegradable and do not harm the environment, they are always very concerned about the sustainable development of the planet. But due to this type of factors, these eco-efficient companies face many barriers in the course of their business career, the barriers can be technological, financing, governmental, imitation, among many other barriers that may be found along the way. Therefore, in this work an eco-efficient company dedicated to organic compost will be analyzed, through the integral model of entrepreneurship to analyze which are the factors that slow down or that help the internalization of companies with an ecological base.

2. HYPOTHESIS

The companies of ecological base present major difficulty at the time of wanting to internationalize, in comparison to the companies of industrial base.

3. BACKGROUND OF THE PROBLEM

In 1903. the first nitrogenous fertilizer was created, which is made from calcium nitrate, but it was not until the 20th century when ammonium nitrate became an important fertilizer, which became the leader. According to Garden Guides (2012), modern production of chemical fertilizers began in 1842 when John Lawes discovered a process of treating phosphate rock with sulfuric acid to produce superphosphate. During the 1960s, ammonium phosphate fertilizers gained popularity with the improved development of manufacturing, today it is the most widely used. This has developed many negative factors in our lands such as soil infertility, the development of acid soils, the increase of microorganisms that instead of helping the plants causes damage, since it consumes all the organic matter and soil nutrients surrounding, as well as the pollution they generate to groundwater. Because of this, people nowadays have become aware of the damage that this causes both to the planet and to human health. The use of chemical fertilizers alters and modifies the PH of the plants, as well as its molecular structure which develops changes in the appearance of the food, as well as the creation of new microorganisms that when consumed by humans develop new diseases. Factors of this type have caused many companies to change their way of working, promoting a sustainable development to the environment. The company Mary's Poop is an innovative company with a sustainable base and with an eco-efficient purpose, which is dedicated to organic compost made from alpaca feces and other ingredients such as fungi and cassava, 100% organic, the company was founded in 1994 It started as a small company with only 3 alpacas, today, 25 years later, it has 150 alpacas and they intend to continue growing in the near future. Mary's Poop is located in Virginia and is known only in her region, but it is looking for new strategies to expand and export its products around the world. Therefore, this new eco-efficient business model will be analyzed in the context of the integral model, analyzing in this way the tripod of the strategy, which integrates considerations based on industry, resources and institutions (Vargas, 2017, p. 184).

4. THEORETICAL-CONCEPTUAL FRAMEWORK

4.1. Industry-based considerations

When analyzing industry-based considerations, the framework of Porter's five forces is analyzed, which takes into account factors such as rivalry between firms, barriers to entry, the power to negotiate with suppliers and buyers, as well as the substitute products.

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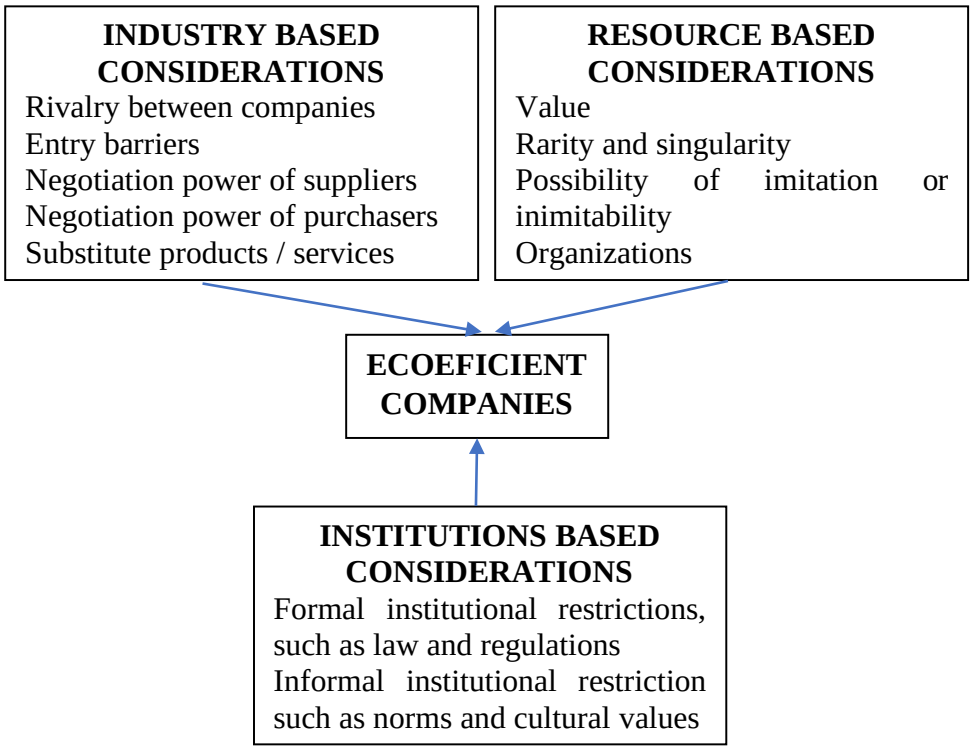
Figure 1: Eco-efficient companies



Source: Vargas, J. (2017). Análisis de la Gestión Estratégica. México: Universitario

4.1.1. The rivalry between companies

When talking about the rivalry of companies, it is referred to the struggle that companies face every day to obtain a position before consumers. These battles can be for prices, quality in products, advertising battles, etc. On the other hand, the author Huyghebaert mentions that the rivalry between firms generates a direct impact on the likelihood that a business will be successfully undertaken, as well as having an impact on the existence of barriers to entry, since fewer firms exist in one industry more complicated will be the entry of new firms (Huyghebaert, 2004). The company to analyze is dedicated to organic compost made from alpaca feces, as it is an innovative product, it does not have much competition, but if there is competition in relation to the substitute products that would be all chemical fertilizers, due to the a great variety of substitute products that are available in the market, it is difficult to compete for price in the same way as being a small company is not even positioned in the mind of the consumer when thinking of an organic fertilizer. Nowadays fertilizers and other chemical products for the treatment of the soil represent 15.7% of the income of the Nurseries and gardens industry in 2019. The industry as a whole has experienced a rapid growth in recent years, thanks to the constant increase in disposable income per capita and the consumer segment strengthened. A decent part of the US market has been occupied by large companies such as Scotts Miracle-Gro Company, Walmart and Lowe's. Because economies of scale, as well as large corporations can maintain a low cost while offering affordable prices. Price competition among large companies has led to slow growth throughout the sector and low profit margins. Some less profitable companies have been forced to leave the industry. Successful companies are those able to compensate the highest prices by offering a deeper knowledge of the product and superior customer service. Over the next five years, the nursery and garden store industry is expected to continue to grow, as economic conditions are expected to remain stable. As the disposable income per capita increases, the consumer will be able to invest more time and money in the appearance and operation of their gardens. It is also expected that the industry will benefit from a growing demographic interest in small plants, gardening and organic horticulture.

Below is a list of companies with which Mary's Poop competes in the United States.

a) Scotts Miracle-Gro Company (OH, USA)
Founded in 1868, Scotts Miracle-Gro Company is a multinational corporation and industry leader in the lawn and garden market. Its products include the infamous Miracle-Gro and a complete line of plant foods. The most popular Miracle-Gro fertilizers are inorganic, which are much less expensive than organic fertilizers.

b) PacaProGro (CA, USA)
The PacaProGro farm is located in Somis, California, with an estimated 180 alpacas producing alpaca fiber and alpaca manure. Not only sell alpaca fertilizers, but also merchandise made of alpaca fiber, such as hats, gloves, scarves and stuffed animals.

c) Alpaca Grow (VT, USA)
Alpaca Grow is a small family business operated in Vermont that began in 2014. Similar to Mary's Poop, Alpaca Grow sells only alpaca fertilizers.

d) Isolated wood farm (British Columbia, Canada)
Secluded Wood Farm is headquartered in British Columbia, Canada. They sell alpaca fiber and manure products.

e) Alpaca Island Company of Martha's Vineyard (MA, USA)
Island Alpaca Company has more than 15 acres and around 50 alpacas. They sell alpaca fiber and manure products, and they are charging higher prices.

f) Camelot Haven Alpacas (British Columbia, Canada)
Founded in 2002, Camelot Haven Alpacas produces and sells alpaca clothing, accessories, gifts and alpaca fertilizers.

4.1.2. Entry barriers

As already mentioned before, Mary's Poop faces competition from large fertilizer companies such as Miracle-Gro and small alpaca farms, due to this there are difficulties when it comes to wanting to enter the US market, as the big brands are doing well positioned in the market, and it would be complicated to unseat them or compete for prices, so that the company in this case could compete for product quality as well as innovation and for the benefits that its product provides. One of the competing companies of Mary's poop is already positioned in 10 states of North America, and has large sales volumes, being this way the products of Mary's poop and other small alpaca farms cannot compete by prices and volume, as already mentioned previously, which makes it be handled as an oligopoly market among large companies. These in turn set entry barriers when playing with prices since, if they see that a new product wants to enter the market, they lower their prices in order to continue to have an advantage over others or use promotions which makes them more attractive. the purchase of their products to the final consumer. It is also important to consider the transaction cost and the transportation cost if working with foreign currencies. If the costs become too high, Mary's Poop products would be less competitive in the foreign market. An alternative to export is the franchise, which allows local alpaca farms to produce Mary's Poop products for a fee.

4.1.3. Substitute products or services.

In North America, small competitors own alpaca farms and naturally produce similar products. Geographically, alpaca farms are located in rural areas and seem to serve only local markets.

The competitive advantage of "Mary's Poop" is that it is the company with the highest social awareness among all its competitors. And although its product is easy to imitate, it gives it a plus by mixing it with some other ingredients that make the compost a better quality. It is also easy to use as they pack the product inside pod biodegradable which they call Poop + Pod, these only have to be deposited in a container with water waiting for it to dissolve and it starts to water in a normal way. But there is a high range of substitute products that, although they are not organic, the final use is the same (serve as fertilizer to the plants), sharing with substitute products is complicated since the raw material they are made with are very economical and this it makes the prices of the products accessible to all types of public. On the other hand, the organic products that Mary's poop handles are of a slightly higher price, this is due to the handmade process with which they are manufactured.

4.1.4. Bargaining power with buyers

According to Porter, at this point it is defined as the ability of customers to impose prices and conditions of sale (Porter, 1980). This force can be established by customers directly, whether negotiating a discount or financing model, demanding delivery forms or indirectly which is summarized with competitive purchases. The bargaining power of buyers may depend on some variables such as a high supply of products and / or services and low demand for them, another may be that the products offered have no differentiation among themselves, etc. At this point, the customer has the option to choose any product or service that is presented to them and that they consider to be the best and meet their expectations. As well as defining what is the maximum price customers are willing to pay for a product or service, as well as some other requirements that could be delivery times, product quality, etc. All this has an impact on the company's profits. Mary Forte, the owner of Mary's Poop, manages and operates the company and interacts with customers and other interested parties through social networks. Nowadays, online / digital marketing is the most important marketing tool, especially in social networks. For example, use "Pinterest" to communicate with the company's audience. This social networking platform is popular with many users who share images that can be easily shared. Therefore, she can approach her audience and attract their attention and thus know what customers need and adapt to the needs of the market.

4.1.5. Bargaining power with buyers

In one of his writings, Peng mentions that "when the bargaining power of suppliers becomes too great, business solutions must be found that can reduce it" (Peng, 2012, page 127), this is due to the fact that many options must be available to the purchase of inputs at reasonable prices. The organic fertilizer based on feces of alpaca does not require many inputs due to the fact that a lot of raw material is not used for its elaboration, so it is not necessary to have a large number of suppliers. But if it is necessary that with the few suppliers that have contact make and establish the negotiation agreements delivery times among many other things, in this way can reduce and to a certain extent eliminate transaction costs.

4.2. Considerations based on resources

The resources are any input in a productive system in which an output is generated. These can be classified as financial, physical, human, technological, organizational, knowledge, management team experience and customer service, among others. The consideration based on resources groups some indispensable factors for entrepreneurship, some of them are creating value, being unique through the rarity factor among other aspects. For example, in an analysis Peng mentions that it is important to take into account the resources of the company, they have to be oriented to create value, they must have rarity, they must be difficult to imitate and finally business resources have to be immersed in the organization (Peng, 2012).

On the other hand, Barney dogmatizes that the heterogeneity of organizations is due to the possession of resources: i) valuable, which must respond to environmental threats and take advantage of their opportunities; ii) rare or scarce, those that cannot allow obtaining competitive advantages with competitors; iii) difficult resources to imitate, without substitutes and organizational, which means that the company has aspects of order (Barney, 2001, page 41). The company Mary's Poop, offers the market an innovative product because it is taking the greatest benefit to a product that people see as a waste, and transformed it into a product with added value. The strengths with which this product provides is that they are organic, have a higher performance compared to other fertilizers, is favorable to the environment, is not expensive to produce, something that gives a greater value is that the packaging is biodegradable by what makes the whole product itself is ecological and there is no waste of plastic or any other material that is difficult to decompose, the product is safe for children and pets so anyone can use it. Therefore, for the considerations based on resources, a SWOT analysis was carried out to analyze both the internal and external factors that provide added value to the firm, as well as the positive and negative factors that can cause the company not to grow rapidly. what was expected.

Table 1: SWOT Analysis

Strenghts	**Opportunities**
Organic products / products without chemicals Excellent performance compared to other inorganic fertilizers environment friendly It is not expensive to produce The packaging is biodegradable Safe for children and pets It is not easy to imitate	Growing trend in organic products Market development Product development Product differentiation
Weacknesses	**Threats**

Source: Prepared by the Authors

In this table it can be seen that the firm has many strengths that make your product different, but also has many threats. This is due to the same rarity of the product which makes it somewhat complicated for sale, likewise the product is easy to imitate, so at any time it could have a lot of competition, which can quickly get to the market firm. In his essay, Porter states that the competitive advantage comes from the value that a company manages to create for its customers, by offering special benefits that compensate a higher price of the product (Porter, 1980).

4.3. Considerations based on institutions

When talking about considerations based on institutions, we are talking about the rules of the game of these, in which the behavior of the company is determined and how they are developed around the world. Peng, points out 5 strategies for an entrepreneurial company to be successful, which can be applied together, and they are growth, innovation, networks, financing / government, and harvest / output (Peng, 2012). The Mary's poop company integrates some of these strategies such as innovation in their products, as well as networks, since they try to have a wide network to get known as well as to obtain advice and keep growing as the company participates in a program called X-culture where companies are assigned a group of people from different parts of the world, giving advice to companies so they can expand or internationalize at the time the company uses all the networks that are possible for be able to expand. Peng mentions that there is evidence that networks, personal and organizational, represent significant resources and opportunities and that the successful creation of networks can lead to the efficient

performance of firms (Peng, 2012, page 13). Instead, McDougall notes that network analysis builds a very solid foundation and helps identify international opportunities, as well as establish credibility, provide access to critical resources, as well as knowledge and lead strategic and cooperative partnerships (McDougall, 2000).

5. USE OF FERTILIZERS IN MEXICO

The use of organic fertilizers in Mexico is not very common, this is because industrial-based companies need chemical products that make plants grow at a faster rate due to market demand. But these fertilizers damage the soil causing them to become unusable after a time for the harvest, in turn the food absorbs these fertilizers that are harmful to the human being in the long run. On the other hand, organic fertilizers bring many benefits for the soil as well as for plants and food, according to a study carried out by SAGARPA, organic fertilizers favorably influence the physical characteristics of the soil (physical fertility); These characteristics are structure porosity, air action, water retention capacity, infiltration, hydraulic conductivity and stability of aggregates. The following graph shows a comparison made by the National Agricultural Survey (ENA) in which there is an increase in the use of chemical fertilizers in Mexico and a decrease in organic fertilizers.

Table 2: Comparison of the use of chemical and organic fertilizers in Mexico

National agricultural survey Agricultural Technology (First part) 86% of agricultural production units carry out agriculture		
Employed technology	**Percentage**	
	ENA 2012	**ENA 2014**
Type of seed	60.9%	82.2%
Criolla	29.7%	29.2%
Improved	Na	Na
Certified	Na	Na
Transgenic	Na	Na
Seedling	Na	21.0%
Chemical fertiliziers	65.5%	68.8%
Natural fertiliziers	40.4%	27.5%
Herbicides	61.7%	62.7%
Insecticides	45.3%	48.2%
The sum does not give 100 because each production unit can use more than one technology *Na - Not available*		

Source: INEGI; National Agricultural Survey (ENA 2014)

6. CONCLUSIONS

The company Mary's poop has a competitive advantage that differentiates it from other firms, and that is that its product is innovative and ecological, as well as its processes are carried out in an ecological way which makes it an eco-efficient company. When analyzing the company through the comprehensive method of entrepreneurship, it is observed that just as the company has some advantages in the product also with many threats that are the large companies that are already positioned and that also compete with competitive prices, we also see that although they have a wide network which is using the best way possible, it is necessary to increase that network of contacts so that your business can grow quickly because it has a long time in the market and has grown slowly which is a disadvantage since the rival companies take giant steps in comparison to Mary's poop. Likewise, it can be seen that due to the culture of planting in Mexico, this company would not be competitive in the country, since most farmers prefer chemical fertilizers and thus produce more in less time than caring for the land and having a

product of a higher quality with organic fertilizers. It is necessary to implement a culture of conscience in Mexico when we talk about caring for the land, since the use of organic fertilizers would not only help the environment, but also people, this is because the foods that are consumed will have better nutrients and they would not be contaminated with pesticides. Today some people started to make their gardens at home, so they grow their own food, this is a good technique because they can be sure that the consumption of food is one hundred percent organic.

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TECHNIQUES OF CREATIVE ACCOUNTING

Erika Kovalova
University of Zilina,
The Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 8215/1, 010 26 Zilina, Slovak Republic
erika.kovalova@fpedas.uniza.sk

Katarina Kramarova
University of Zilina,
The Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 8215/1, 010 26 Zilina, Slovak Republic
katarina.kramarova@fpedas.uniza.sk

ABSTRACT

Creative accounting can be understood as a process in which we deliberately manipulate accounting information in order to adjust the financial statements to a form that is appropriate for its creators. Creative accounting leads to a violation of true and fair view of accounting and provides users of financial statements misleading. The aim of this paper is to analyse several domestic and foreign literary sources dealing with the topic of creative accounting and its use in the world. Literary research helps us to clarify concept of creative accounting, based on the theoretical background demonstrate the techniques and methods of creative accounting. In general, companies have two basic reasons for financial statements manipulation, increasing profit due to market position improvement or decreasing profit due to tax optimization. In this paper we manage to compile a simulated annual report resp. Financial statement, using the techniques of creative accounting, where the results of a fictitious accounting entity were presented. We can divide creative accounting techniques into 5 groups. In this paper we focused on this groups and illustrated the potential examples of practicing these techniques.

Keywords: *Creative accounting, Financial statements, Techniques of creative accounting*

1. INTRODUCTION

Creative accounting takes many different forms in different parts of the world. We must get along from different historical events, traditions, market development, from the common markets of goods and services, to the modern and complex capital markets. However, ultimately everything aims at one common goal, to adjust the company´s statements according to company´s needs. Shah et al (2011) noted that every business in the country adjusts its profits. Creative accounting was defined in Petrucelli (2013) publication as a process of manipulating accounting data to transform accounting statements from what they should have to what their creators would like, and also the processes of economic transactions that are carried out directly so as to be favorable accounting practices. An interesting definition has also Breda et al (2018), who defined the creative accounting: Creative accounting consist of accountants practices that follow the required laws and regulations but deviate from what the standards try to achieve. Creative accounting uses loopholes in accounting standards, to improve the image of society. Although creative accounting practices are legal, these gaps are often reformed to prevent such behavior. Volkanova (2014) defined the accounting manipulation as the use of management discretion to do accounting alternatives, or programming transactions to affect option the transfer of wealth between the companies, fund providers or managers. The definition of creative accounting in the United States is broader and includes creative accounting along with fraud, while the UK definition is narrower and creative with accounting understands the use of flexibility within the regulatory system, excluding fraud.

According to Jones (2011), in many countries the creative accounting is seem as a twisting in the area of legislation. Since each business is different, it does business in different countries, in different industries or services, has different management, so it is necessary to achieve faithful and honest impressions, some flexibility or space in financial reporting. Although it is known that in many cases this space is being misused to adapt reality to the benefit contractors. (Weissova et al, 2015)

2. METHODOLOGY - TECHNIQUES OF ACCOUNTING MANIPULATION

According to the main motivations around the world belong avoiding loss in the current period, improving financial indicators, maintaining, or increase in traded prices share, minimizing the tax base (highest motivation in the Czech and Slovak Republic) as well as personal interests of managers. (Drabkova, 2016) It is important to note that not only internal managers and management play their part but it is also the options surrounding the company (tax laws, various meaningless regulations, poor auditors´ control, fashion trend, etc.) that contribute to blossom unclean practices. Jones (2011) in his work provides a table in which can be find the main incentives for resorting to creative accounting.

Personal incentive - Salary raise - Bonus payment - Stocks and option - Job security - Personal satisfaction
Market expectations - Analytics expectations - Profit smoothing - Standards
Special circumstances - Debt management and lending - Security issue - Acquisition and merger - Risibility reduction due to regulators - Waiting for better times - Belief of incorrect regulations - Creative accounting is not illegal so why not use it?
Fraud coverage - Assets abuse

Table 1: Incentives for creative accounting and sometimes fraud (Source: Jones, 2011)

Even though there are several motives why creative accounting is used in practice, the most common goal of its use is to maximize profits and to render a more favorable financial situation of the company (Kovacova at al, 2019). In this part of our paper, we focused on various techniques of creative accounting. We divided them into several possible groups and a few techniques will also be shown on an illustrative example for a better understanding of the creative accounting principle. There are countless techniques and methods of using the creative accounting. (Cirtkova, 2005) These methods depend on how flexible is the regulatory – accounting system (IFRS provides several options for showing true and fair view), as well as from industry in which the company operates, from the size of the company, and also from the management and their moral awareness or knowledge of the code of ethics.

Creative accounting can be applied on balance sheet, cash flow statement and profit and loss statement. Kovacova & Rowland (2018) found that the most frequently manipulated items are overvalued income, untrue costs, and also incorrectly capitalized cost for procurement. According to Krupkova (2001), we can divide creative accounting techniques into 5 groups: (i) income increase, (ii) cost reduction, (iii) assets increase, (iv) liabilities reduction and (v) increase operational cash flow.

- Income increase
  In this group, we can distinguish according to Jones (2011) five ways to artificially increase the income: early recognition of revenue, increase in interest receivable, counting non-operative profits, treating with loans as with sales and swaps.
- Cost reduction
  Artificial cost reduction is another widely used creative accounting technique. In this group, we can distinguish according to Jones (2011) the following practices: reserve accounting, tax reduction, big bath, reducing costs while increasing assets, increasing closing stocks, cost capitalization and extend depreciation period.
- Assets increase
  The third category is the increase in assets, where it is possible to recognize these methods: increase in the value of goodwill, increase in brand and other intangible assets, revaluation of fixed assets, mark-to-market.
- Liabilities reduction
  Of course, to increase assets is an adequate antonym the liabilities reduction. In this group, Jones (2011) offers two methods: off-balance sheet financing and reclassification of debt to equity.
- Increase operational cash flow
  The last technique of creative accounting is to increase operational cash flow. Influence the company cash flow is much harder than profit. There are two methods of cash flow reporting, direct and indirect. Indirect method is used more often, mainly because there is more scope for using creative accounting. Practices which can be used are maximization of operational cash inflows and minimizing operational cash outflows.

3. RESULT AND DISCUSSION

In this part of paper, we focused on the presentation of individual creative accounting techniques on fictitious financial statement.

1. Example: Company XY deals with industrial computers. In 20X0 sold to Company AB computer worth 32.000 EUR. There was included the price of computer (60% of the price) and also 250 hours of online training (40% of the price) useable in within two years in this price. Company AB used 190 hours in the first year and the remaining 60 hours in the second year. The price of the training worker´s is 40EUR/hour. The cost of the sold asset is 10.000 EUR.

Figure following on the next page

Correct accounting

20X0		20X1		20X2	
Receivables	32.000	Sales	9.728	Sales	3.072
Sales	19.200	Profit	-9.728	Profit	-3.072
Costs	10.000	Costs	7.600	Costs	2.400
Profit	12.800				
Pretax profit	9.200	Pretax profit	2.128	Pretax profit	672

Creative accounting

20X0		20X1		20X2	
Receivables	32.000	Sales	0	Sales	0
Sales	19.200				
Costs	10.000	Costs	7.600	Costs	2.400
Pretax profit	22.000	Pretax profit	**-7.600**	Pretax profit	**-2.400**

Figure 1: Illustrative example: Early recognition of profit
(Source: own processing)

2. Example: Affiliated companies – company A is from Slovakia and company B is from Chile, are rubber companies operating on opposite sides of the globe. In the winter season the company A agreed with swap with company B. 10.000pcs of winter tires was exchanged for 10.000pcs of summer tires in the total amount 1.200.000 EUR. In the next figure, there is shown the reporting from the perspective of company A.

Correct accounting

Before the transaction		After the transaction	
Inventories (summer tires)	1.200.000	Inventories (summer tires)	0
Inventories (winter tires)	50.000	Inventories (winter tires)	1.250.000
Profit	0	Profit	0
Pretax profit	0	Pretax profit	0

Creative accounting

Before the transaction		After the transaction	
Inventories (summer tires)	1.200.000	Inventories (summer tires)	0
Inventories (winter tires)	50.000	Inventories (winter tires)	1.250.000
Profit	0	Profit	1.250.000
Pretax profit	0	Pretax profit	1.250.000

Figure 2: Illustrative example: Swap – profit recognition
(Source: own processing)

3. Example: The company owns a tangible asset – the building – with the book value of 140.000 EUR. Light bulbs were changed throughout the whole building. Expenditure allocated to this activity was 1.350 EUR.

Figure following on the next page

Correct accounting

Before maintenance		After maintenance	
Tangible investment goods	140.000	Tangible investment goods	140.000
Cash	1.350	Cash	0
Cost	0	Cost	1.350
Pretax profit	0	Pretax profit	-1.350

Creative accounting

Before maintenance		After maintenance	
Tangible investment goods	140.000	Tangible investment goods	141.350
Cash	1.350	Cash	0
Cost	0	Cost	0
Pretax profit	0	Pretax profit	0

Figure 3: Illustrative example: Costs capitalization
(Source: own processing)

4. Example: Company owns a building in the amount 50.000 EUR. Profit before depreciation is 5.000 EUR. Currently, building is depreciated on a straight-line over a period of 10 years. However, management has decided to change the depreciation period to 20 years.

Original depreciation		Creative accounting	
Profit before depreciation	5.000	Profit before depreciation	5.000
Depreciation	5.000	Depreciation	2.500
Profit after depreciation	0	Profit after depreciation	2.500

Figure 4: Illustrative example: Depreciation period
(Source: own processing)

As it was said, creative accounting can be understood as a process in which we deliberately manipulate accounting information in order to adjust the financial statements to a form that is appropriate for its creators. (Siekelova, et al, 2015) Creative accounting can be also understood as an activity in which we adjust transaction so that the company can achieved favourable economic results. There are many other techniques to manipulate financial statements. In general, there are two basic reasons for manipulation of financial statements: (i) increasing profit due to market position improvement or (ii) decreasing profit due to tax optimization. (Milesi-Ferreti, 2004)

4. CONCLUSION

Right from the start of the accounting profession, there have been pressures from owners and management to "beautify" information about the performance and state of their business in the financial statements. It was only a matter of time before management or employees began to abuse their undeniably advantageous position, which they have in all respects before users of financial statements, such as investors, the state, customers, competitors and other stakeholders.

This advantage allows entities to make their results more attractive by using information superiority, while the reality may be quite different. In this paper, we focused on five basic techniques of creative accounting and illustrated four of them on specific examples.

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LABOUR MARKET POLICIES IN BULGARIA DURING PERIODS OF CRISIS

Venelin Terziev
National Military University, Veliko Tarnovo, Bulgaria
University of Rousse, Rousse, Bulgaria
terziev@skmat.com

ABSTRACT
The current crisis with the spread of the COVID 19 viral infection once again puts to the test the implemented social policies in terms of unemployment and employment. Entire sectors of the economy are being stagnated and others are limited to such a degree that their functioning is minimal. This implies active processes of pressure on the existing social system. To what extent it is capable of withstanding these critical processes and the extent to which they will occur is yet to be seen, but it is clear to all that negative influence is already a fact and it will intensify. Despite the fact that the Bulgarian economy has been growing in recent years, the progress is quite fragile and insignificant in order to compensate for what is happening now.
Keywords: *Labour market, COVID 19, Periods of crisis, School, Policies*

1. INTRODUCTION

For the second time during the last periods of visible economic and political development of Bulgaria the social policies implemented in relation to the labour market have faced challenges, which must be overcome with particular promptness and by making the right decisions. The first of these periods was the transition to a market economy, which defined its priorities in national social policy, including also in labour market policy. During this period, at the end of last century the role of the state regarding ownership and regulation of social and labour relations was changed. Currently, the state guarantees the population's economic welfare only within the minimum social standards and the public authorities stipulate only the minimum of the employment rights of the employees that are set by the current Labour Law. The search for ways and methods of establishing a market model with socially-oriented employment is already in the final stages of this development, and experts point out that this transition period has lasted much longer than expected and has taken Bulgaria at least twenty years. This is evidenced by the processes carried out in each of the structural blocks of social-labour relations, which to a great extent determine the nature of labour market and the field of employment, namely: the labour market, the field of industrial employment, in the group of relations, covering the payment of labour and the appropriation of its results, and in the relations mediating consumption such as the conditions for the creation of a standard of living and at the same time the conditions for the reproduction of force reproduction. At the same time, the labour market creates a space for manifestation of the objective economic rule for the interaction between labour supply and demand, which primarily has a balancing function. Thus, the labour market mechanism is a mechanism for distribution of individual labour by sectors and spheres of socially useful activity, a mechanism for transformation of the labour resources potential into public labour, using people's skills and bringing them income. Therefore, people's productive employment can be considered as the ultimate goal in regulating the labour market and its socially acceptable functioning (Terziev, 2019-b; Georgiev, 2017-a). The second and also very important function and action factor of the economic rule for the interaction between labour supply and demand is the determination of the starting price of the labour force as a major incentive for employment and a source for the subsistence of the worker themselves and their family.

2. LABOUR MARKET POLICIES IN BULGARIA DURING PERIODS OF CRISIS

In the initial period of building a labour market as part of the commodity market, its sole regulator was the mechanism of free competition, based on the law of supply and demand. Under this pressure occurred the transfer of workforce into more profitable industries. However, the processes of specialization and division of labour under the influence of scientific and technical innovations have made the workforce increasingly professionally oriented, which has made it difficult to "flow" from industry to industry. Then objective reasons for unemployment occurred. Besides, the capital began to pool and concentrate, targeting monopolization and change in its spheres of influence. All these are the social and economic prerequisites for the emergence of state regulation of the labour market as a place for directing the workforce. Furthermore, the workforce as a main subject for regulation is considered by us as labour resources. The workforce as an individual's ability to work (otherwise labour is potential), and labour as an appropriate human activity (functioning workforce) for the purpose of self-sufficiency by livelihood, is presented to us as different functional forms of labour resources. In such context, the correlation between these categories is inconsistent and subject to certain logic of development. Labour resources include: labour reserves from permanent residents of a municipality (potential workforce), as well as active workforce - employed workers and unemployed persons. According to the range of people, this is the part of the working-age population (employed and unemployed) to which young working people (who are not yet 18 years of age but who work under certain conditions) are added, working retirees of whom people with disabilities from the first and second groups are deducted. The workforce, who is in the stage of orientation /of the labour market/, once getting into the sphere of production becomes used by it. Moreover, in the production process are involved means of production, items and work tools, i.e. the material production factors. Here the workforce "throws away" its commodity form and becomes a production power (part of the production power of society). Thus, the role of the wage level as a basic condition for hire is ambiguous: the high level of wages, on the one hand, increases the demand for jobs from the economically active population and, on the other, leads to their reduction, since the employer wage costs are rising, and therefore manufacturing costs are increasing. Aiming at restricting this process, the employer increases the capital organic structure, releasing workforce, contributing for the increase of number of people who become unemployed. Approbation of these processes in the interests of following the constitutional rights of all members of the society is an important objective of the labour market social policy and the field of employment. The employment sector and the labour market interact under the principle of "communicating vessels" - the greater the tension in the labour market (the excess of supply over demand), the less it is in employment sector and vice versa. Therefore, its status is one of the key indicators for all state decisions in the field of social work and joint /tripartite/ agreements in the field of social partnership. Here comes the question why the issue for regulation of the labour market becomes so popular in Bulgaria? The point is that, the market transformations very unevenly encompass all units of the economy, they penetrate into its internal mechanisms and correlations. Their management aiming the establishment of a united national labour market requires coordinated actions. A critical for the labour market moment occured during the period of restructuring of the Bulgarian economy from 1990 to 1997. This period is related with the processes of privatization and transformation of the "socialistic" state property into private property and the discharge of great amount of workforce. This process run sporadically with certain peaks and declines, lasting for a relatively long period of time. All this is related to the regulated periods of privatization by the state of the different sectors of economy. The need to strengthen the state role in the regulation of the market model of employment is dictated by the fact that a significant part of the state sector remains in the field of production. Therefore, the role of the state in its regulation should not be diminished in the transition period for economic development.

The contemporary according to their social significance measures for employment regulation of the economically active population as methods for including the individual in the public labour aiming at receiving income and fulfilling one's creativity shall bear the main load in the system of measures for regulation of the standard of living. In the process of economy regulation, the discrepancy between the significance and scale of transformations in the economy and their social cost is becoming increasingly apparent. The underestimation in the reformist social employment policy in terms of their place in the structure of the factors of living standards of the population, and also their influence on the labour motivation and the search for livelihood, i.e. on the transformation of social-labour relations as a whole, took their toll. During reformation time the emergence of wage labour, property inequality, social stratification of society in terms of income makes the public task of reconciling the interests of all segments of the population in the social and labour sphere quite urgent - the task of reaching consensus between the interests of employers and the hired workers. It is also the most up-to-date objective of the governing system in the labour market with all its tasks. The discussion on the objectives of regulation of the social and labour sphere, including the labour market, began well before the reforms. Then the common belief was that the objectives, their regulation should result in achieving full and universal employment. The economics literature published after 1992 shows attempts of reconsideration of the meaning of full employment, typical of the period of full employment and compulsory work. At that time, many authors associated the concept of "full employment" with employment of the whole working population with community service work (Georgiev, 2016). Such ideas made formally groundless the statements of some economists about the possibility of treating ineffective employment as a form of hidden unemployment accompanying "full employment" in the administrative-command economy. Apart from the various insignificant modifications, the positions of the researchers on this issue are now mainly represented by two sufficiently clear standpoints. The first of these, as a fundamental indicator of full employment, is the full satisfaction of the population's needs for work. The second at the foundation of full employment puts the indicator of correlation between the need of the population for work /labour supply/ and the solvent labour demand /number of jobs/. From both of these standpoints, it seems to us that the first one is better corresponding to the socio-economic goal of labour regulation, since it characterizes full employment by meeting human needs and places them first. We believe taht the second standpoint is suffering from the change of the concept of "full employment" with another definition, which is rather a balancing act between material and personal factors of production. In all its importance, 'balance' characterizes employment by meeting production needs for efficient use of labour and production capacity. This level of relationship is a very substantial element in the interest of the employer, but it does not fully reveal the interest of public in full employment in the market economy conditions, but it is one of its quantitative indicators. The interpretation of "full employment" as a combination of primary and secondary employment is also concerned, i.e. the cases where the income from the first employment is not enough for the worker as a source of economic welfare. This makes the secondary employment a source of extra pay and support for themselves and their family. This is rather a quantitative approach. Everyone has the right to independently determine which of the areas of employment for them is the main and which additional and what to be the scales of each of them (Terziev, 2019c-i). Practically, the function of balancing the material and the personal factor of production appears as rational employment, as a very mobile and optimal combination of labour and means of production in any given period of time – an objective of local employment policy (Georgiev, 2019j). Also important to society as a whole is the social balance of power, which would stimulate economic prosperity not through the suppression of one's interests but through the attainment of their consensus and social peace. And this is part of the task of state regulation of the labour market.

In doing so, the state appears:

- As warrant of citizens' constitutional rights;
- As employer organizing and responsible for the labour market within the state and public property;
- As a party to tripartite agreements in the field of social partnership.

Labour Market Impact Measures are aimed at optimizing its main elements - labour supply, which is related to the structure, according to the demand for a certain structure and the quality of jobs, depending on gender and age, qualification characteristics, payment terms, etc. The second critical situation occurred during the financial crisis of 2008 and 2009. In Bulgaria this period comes with some delay and the economic recovery continues until 2010. Compared to the previous crisis period, the unemployment rate is not in such critical values, but there are some negative phenomena in certain sectors of the economy and, consequently, negative processes in the labour market. Typical then are peaks of high unemployment in certain regions of the country with the most severe consequences. Overcoming it is also rather slow and painful, and involves the "payment" at a certain social cost that society as a whole has to pay. These are complex and multilateral economic processes that correlate with the macroeconomic components of a market economy, such as: the ration between the level of employment and the cost of labour, the dynamics of ownership types (under conditions of structural change), the investment and tax climate, social tensions in society etc. Basically similar global issues are being addressed by the government of the country as a major carrier of state interests, based on the national concept of social and economic development. However, the opportunities for active influence of other actors in the development of the labour market should not be denied. The objectives and tasks of social policy in regulating the labour market and employment productivity are as follows:

- creation of all necessary prerequisites for economic growth, structural change of production in order to create new jobs and preserve the modernized jobs for employment of the economically active population;
- giving the labour force flexibility, mobility for the free flow between sectors, areas of implementation of labour and occupations, as well as between territories in the interest of increasing workforce productivity and standard of living;
- combining all the parameters of labour supply and demand, ensuring a natural level of unemployment;
- assistance for job placement and social protection of the unemployed and socially vulnerable sections of the economically active population in the labour market;
- formation of new motivation for highly productive work of the individual;
- decent wage/salary level and income corresponding to one's own qualification, experience and entrepreneurship level;
- material incentive and civil responsibility of the individual for the maintenance of the standard of living of their family;
- elimination of causes and factors, both external and internal, causing the preservation of underemployment or hidden unemployment.

Besides, for the purposes of market regulation, they are changing depending on:

- The level of management authority:
  - nationwide /macro/;
  - regional /an administrative district level/;
  - local /micro level, reflecting personality's or group interests/.

- Time for their implementation:
  - short-term /current, operational/;
  - medium-term /tactical /;
  - long-term/perspective/.
- According to funding sources:
  - State budget funds, extra-budgetary funds, funds of public organizations or commercial structures, funds from operational programs funded by the European Union.
- According to the nature and methods of impact:
  - direct/ laws, regulations, decrees, orders of the administration, and other similar/;
  - indirect/taxes, tariffs, foreign exchange rates, interest rates on loans, and other similar/;
  - mixed / national programs for social and economic development, targeted national programs, targeted regional programs, labour market risk insurance programs: unemployment, late payment of unemployment benefits/.
- According to the contents and expected consequences:
  - encouraging;
  - prohibitive;
  - restrictive;
  - protective.

In choosing these or those regulatory measures, the managing entity must, each time, consider its own particular labour market situation, the trends identified in the analysis, their assessments and the preference of this or that labour market measure, their consistency or contradiction in relation to the existing legislation, possible social and economic consequences, etc. The particular use of one or other of the labour market regulation measures is in itself a combination of the above-mentioned guidelines and methods for the implementation of social policy. However, each time it concerns either the type of passive labour market policy or its active type. This typology for social policy is endorsed by the ILO (International Labour Organization) and is used in its documents. The basis of passive labour market policy is the responsibility of the state for the situation of the worker and the employer at the labour market. Such policy is typical for the transition economy and presupposes certain guarantees for workers by the state for the period of stabilization of the country. In its essence, it is a continuation of state paternalism in the conditions of building a market economy and is aimed at solving social conflicts. The measures for passive labour market policy include: registration of citizens who applied to the employment agency, determination of unemployment benefits, organization of timely receipt of unemployment benefits, early retirement. Being an integral part of social policy of the state in the period of building a market economy, the passive labour market policy pursues its main goal - stabilization of the level of consumption by the working population caught in the situation of unemployment, thus avoiding the conflict between labour and capital. The critics of such a course consider the passive labour market policy as socially dangerous and threatening with laziness and parasitic moods and motivations on the part of the unemployed, oppressing the rights of working members of society. Opponents of the predominance of passive labour market regulation programs, including unemployment insurance programs, argue that main objective of the state budget, as well as for the budgets at other levels shall be to promote productive employment and not the 'conservation' of unemployment. And this is already a measure of active labour market policy. A principle of the active labour market policy must be to assist the unemployed in their active search for ways of engaging in employment, which would allow them to financially provide for themselves and their family with income and other means of subsistence. In other words, active labour market policy transfers responsibility for the situation of the individual and their family to themselves. He will live in accordance with his income from their own employment and then the situation of their

dependents will be only up to them. An active labour market policy is intended to prevent the occurrence of mass unemployment. Therefore, it provides:

- preventive measures of the employment agencies together with the employers for reorientation and professional re-training of the personnel of the enterprises and organizations, carrying out the structural restructuring of production;
- active job search and placement in accordance with the employee's profession, personal experience and aptitude;
- measures for assisting self-employment;
- professional advice for those willing to start up their own company;
- subsidies to the amount of one-year unemployment benefit;
- non-monetary forms of support for small and family businesses.

The active policy is thus aimed at enhancing the competitiveness of the workforce, promoting all forms of individual employment, including family businesses and farming. Difficulties at different times dictate a low level of fulfilment of this responsibility in the field of living standards – the level of minimum social standards. However, the other guidelines for state employment assistance: social protection of workers and the unemployed, social assistance and employment support - currently need appropriate tools to assess their own capacity. By renouncing its paternalistic positions in the field of labour and employment organization in the past, the state should not remain an indifferent observer of the difficulties faced by the population in changing the economic model. It should prove itself as an active character for the forecasting and regulation of employment with its specific employment-related functions - pay and social support, social protection and social partnership. The current crisis with the spread of the COVID 19 viral infection once again puts to the test the implemented social policies in terms of unemployment and employment. Entire sectors of the economy are being stagnated and others are limited to such a degree that their functioning is minimal. This implies active processes of pressure on the existing social system. To what extent it is capable of withstanding these critical processes and the extent to which they will occur is yet to be seen, but it is clear to all that negative influence is already a fact and it will intensify. Despite the fact that the Bulgarian economy has been growing in recent years, the progress is quite fragile and insignificant in order to compensate for what is happening now. The basis of the European active social policy on the labour market is project-based. This is a process that requires the preparation of projects by local communities to be submitted for funding under the identified operational programs. This implementation approach enables the implementation and financing of projects that are proven necessary for local communities and will serve to improve the social environment. Unfortunately, this approach requires a rather lengthy implementation period, which is accompanied by a procurement procedure, preliminary evaluation of the project proposals and subsequent conclusion of the relevant implementation contracts. Practice shows that the required time for such a procedure is about 6 months at its optimum completion. The question in this situation of crisis where almost all economic sectors with very few exceptions are affected, is whether this is a possible scenario and to what extent it will meet the public expectations. There are several possible solutions in this regard. When acting in a State of Emergency shall be undertaken interventions that are temporary and change the National action plan in the field of employment. Usually such crisis measures must be preceded by a thorough and detailed analysis as in this case the time is not enough and cannot be made, i.e. they must use previous experience in times of crisis. If we use previous experience and are seeking to test these measures, then we must take into account that their automatic implementation in the current situation is impossible and even unimaginable. The need for a quick response puts not only the Bulgarian government but also the other European governments to the test, which should act in a coordinated policy conditioned by our membership in the European Union.

A grounded and available as at this moment such policy practically does not exist except the presence of a complex of preventive measures related to people's life and health. This raises the question of whether it will be implemented or whether national authorities should act on their own without expecting such European synchronization. It is more likely that the latter will happen and each country will try to implement an appropriate and adequate mechanism. The measures currently implemented by countries such as Italy and Spain are well known. These are passive measures of direct compensation in a financial and natural resource which are intended to ensure a relatively normal life in a period of quarantine. This brings affected and quarantined people a little comfort and gives a little bit more time for making the other decisions. In Bulgaria, this process of decision-making in already existing crisis situation has slowed and the previously proposed complex of such passive measures has not yet worked and its impact cannot be assessed. Furthermore, the Bulgarian Parliament has repeatedly made changes in this direction and the particular proposals made have not yet been put into action. This increases the pressure over the social system, as the employment agencies report more and more registered unemployed people, from various affected economic sectors. In this case are applied the usual methods of social assistance - unemployment benefits under the provisions of the current Social Security Code, special social assistance benefits, benefits for people with disabilities, etc. This, of course, is not the expected solution to the problem, and in any case the social security system will, in the broad sense of the term, be put under far greater pressure. This situation will require the application of emergency measures, taking into account the specific circumstances (the most affected sectors, the forthcoming release of a large amount of workforce, regional differences, increase of people from other countries returning to Bulgaria as a result of the crisis situation and others, areas with a relatively high number of infected by COVID 19, etc.). Regarding the implementation of the active measures, this process is in initial stage of development. A process of active discussion and implementation is not offered as it is noted that in the stress situation in which the social system is, it is not capable to react so quickly and adequately. The set of measures and activities should be quite diverse, as for example for those in the cultural field, whose recovery, even after the pandemic is over, will be quite long. It is necessary to reasonably differentiate this approach of decision-making and to "formulate" it in the relevant legal form. Our forecasts are that this decision-making process will be too late and it will not have the required impact. Undoubtedly the country's economic system is in a relative balance and it does not reveal the whole set of elements reporting a full critical stage, but we must also consider the slowed action of this process that is related with the behaviour of employers. They are trying, through the provisions of the Labour law, to keep their activity, even at reduced rates - the use of paid and unpaid leave, production downtime, reduced working hours, distant work, etc. These actions on behalf of employers may be relied on for a relatively short period of month or two, and then the state will have to make full use of its protection and regulatory functions and strive to maximize its role as an active player in the labour market. To what extent and how is this going to happen we are about to see and feel? In the world of contemporary Labour laws for each individual and for the society as a whole, employment cannot be useless, of course in the broad social /and not physiologic/ interpretation of this concept. The individual is the one who sets his tolerable upper limit of employment - its volume and content. Hence, the inactivity – this is not unemployment yet. As unemployed is considered an inactive individual willing to work, capable of productive work and actively seeking work (Terziev, Georgiev, 2020). The principle of equal opportunities in exercising one's constitutional right to work does not exclude, but implies a differentiated approach in the choice of forms of assistance and support for different groups of economically active population, which got into the labour market. All types of benefits must be equally accessible for those who need them. This requires thorough work of the structures and employment agencies for the creation and classification of databases for each group and particulars of assistance.

In addition, it is necessary to arrange the objectives and specify the tasks of regulating the relations on the labour market between all management levels, as well as its active subjects. The competences of the central authorities include also those for determining and controlling the implementation of social guarantees in the field of employment, securing the volume of centralized investments for the implementation of national social programs, including programs for full employment, creating new and preserving existing jobs, career guidance, and other collaboration with corporate capital when engaging it in the employment investment process. Regional structures responsible for the employment situation must also take their place in the active labour market policy (Bogdanova, Parashkevova, Stoyanova, 2020a).

3. CONCLUSION

Local authorities determine the status of unemployed and the level of poor security of the population of the region, identify such citizens and provide them with specific assistance when getting a job by cash or in-kind assistance (Bogdanova, 2019k). In this regard, in the group of labour market policy measures aimed at promoting employment are present also the so called 'transition forms' from unemployment to productive employment and therefore – the tactical goals for regulating the labour market. Moreover, there is a need, as we think, for clarification of the concepts 'temporary employment', 'main' (primary) employment, 'additional' (secondary) employment and others. In the last years ours and foreign researchers pay great attention to temporary employment as a limited in time workforce demand. Sometimes temporary employment depends on the contents of work limited by a temporary /seasonal/ period.

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ASSESSMENT MODEL THE TECHNOLOGY OF STRATEGIC DECISIONS DEVELOPMENT

Tatyana Vashko
Institute of Economics and Trade, Siberian Federal University, Russia
tvashko@sfu-kras.ru

Nikolay Vasko
Institute of Economics and Trade, Siberian Federal University, Russia
zazznaykina@gmail.com

ABSTRACT

In modern economic conditions, one of the most important tasks for managers of organizations and companies in various fields of activity is to improve the level and effectiveness of strategic management, as well as the quality and validity of strategic decisions. The high dynamism and uncertainty of the environment, the incompleteness and inaccuracy of information, the complexity of modeling and forecasting processes and phenomena determine the need to use expert knowledge and operate with expert information. And as practice shows: the effective organization of the strategic decision-making process with the possibility of an objective assessment on the ground is a decisive factor on the way to achieving business goals. In the article touches upon the problem of strategic management complexity and various approaches to its implementation. The authors suggest visual graphic model for the technology of strategic decisions development, based on the implementation of the process approach in three-dimensional interpretation with the possibility of a quantitative assessment. The developed model is designed to help control and manage the entire technological process of development and implementation of the strategy, as well as its individual elements, taking into account the analysis of the involved methodological tools and organizational resources in the necessary time space.

Keywords: *graphic model, strategic decisions, strategic management, the technology of strategic decisions development*

1. INTRODUCTION

Current economic conditions, increase in competition and the need to develop the institutional capacity of service businesses require skills in the development of strategic decisions technology that will allow to predict the future state, monitor and respond to changes in the environment. The relevance of this study is determined by the necessity to develop the priorities of a company, using methodological tools adapted to its conditions while the implementation of the strategic decisions technology. The main challenge for it is practical difficulties in the implementation and specific features of different methods of analysis [5], as well as the lack of clear understanding of "the technology of strategic decisions development." In recent years it has been written a lot of scientific works on strategic management. In particular, the works of M. A. Vakhrushina, V. B. Ivashkevich, R. G. Kaspina, V. E. Kerimov, E. N. Lavrenchuk, M. I. Cooter, E. V. Nikiforova, O. E. Nikolaeva, V. D. Novodvorsky, S. A. Stukova, D. L. Savenkov, A. N. Khorin, A. D. Sheremet, T. V. Shishkova. Improvement of the methods and techniques in strategic management was one of the main objectives in such consulting companies as Boston Consulting Group (BCG), McKinsey & Company, Arthur D. Little. A special role in the development of strategic management belongs to B. Karloff, A. J. Strickland, A. Thompson, N. Plaskova, V. A. Vinokurov, E. A. Utkin, D. Hasbi, D. Hussey etc. [6]. In most studies in the field of strategic planning and management much attention is paid to strategic analysis (audit).

It is considered to be one of three fundamental stages of planning (in conjunction with the targeting and selection), special studies are conducted in the field of external business environment.

2. MATERIALS AND METHODS

Considering the strategic planning process, one can notice that the analytical work in this process is performed in three stages: at the stage of goal setting, at the stage of organizational environment investigation and at the stage of strategic alternatives development and strategy selection. Hence, it is advisable to build up a strategic analysis on the basis of the process approach with the following elements: the goal, the situation, problems and solutions. Within such approach, a block diagram of the strategic analysis can be as follows (Fig. 1).

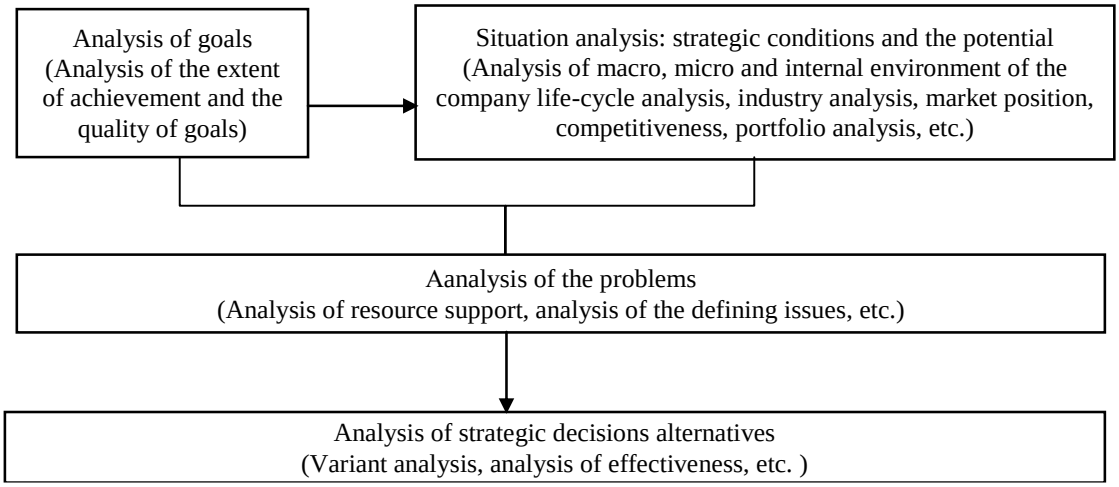

Figure 1: Strategic analysis on the basis of the process approach

In case of the process approach, one can single out repeated procedures. In the process of practical implementation of the company's strategy, it is impossible to separate clearly the procedures for the analysis of goals and the analysis of the situation, as well as the analysis of the problems and the analysis of the goals and situation analysis, as well as the analysis of strategic alternatives and above mentioned analyses. All of them are performed simultaneously with a slight difference in time. Sometimes the difference is so slight that running small businesses does not allow to single out any particular procedures in the process of developing a strategy and the entire process turns into one big analytical procedure. Thus, the expressed idea indicate that the ambiguity of approaches to identify the procedures for strategic analysis is associated with the complexity of a clear separation of the analysis procedures from each other, therefore, and it is advised to consider the process of strategic analysis as a pre-analytical phase of strategic decision-making. It will allow to systematize theoretical knowledge to create logic in describing the procedures and methodological foundations, as well as in practice for small businesses, for example, to implement strategic analysis as a single procedure, and for large companies as four parallel procedures. Of course, this idea is controversial and may not be supported by the supporters of an understanding of the strategic analysis as the situational analysis only, but, nevertheless, it is a try to indicate the ways of solving the main problems in the implementation of the strategic management in companies, it is an elimination of the gap between analysis and decision making. To realize the understanding of such away let us turn to the characteristics of the concept "technology" and "strategic decisions". In the most general sense "technology" has Greek roots and translates: techne - as an art or a skill + logos - as thought, intelligence, knowledge [3]. The analysis of technological aspects of management and implementation of technologies in the management process, as well as management influence

on the object of management is touched upon in a sufficient amount of scientific works (V. N. Ivanov, V. I. Patrushev, A. I. Prigozhin, V. C. Dudchenko, L. Y. Dyatchenko, N. V. Strelkova, V. G. Afanasyev and others). They offered a large number of different approaches to the definition of "technology", united by common set of components (Fig. 2).

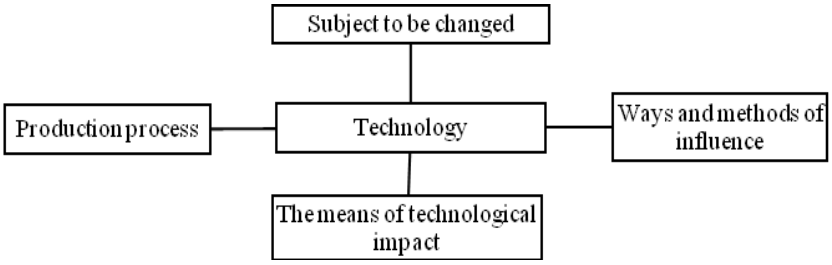

Figure 2: The composition of the components of the concept "technology"

Based on this understanding, a clear definition of the concept of "the technology of strategic decisions development" (TSDD) can be formulated. The technology of strategic decisions development is defined as a set of operations and procedures performed by managers, professionals and technical executives in specified sequence using the methods required for this purpose, technical tools and resources to direct the strategic system status / the subject of management in the desired direction. This paper presents a graphic interpretation of "the technology of strategic decisions development" (Fig. 3) [1].

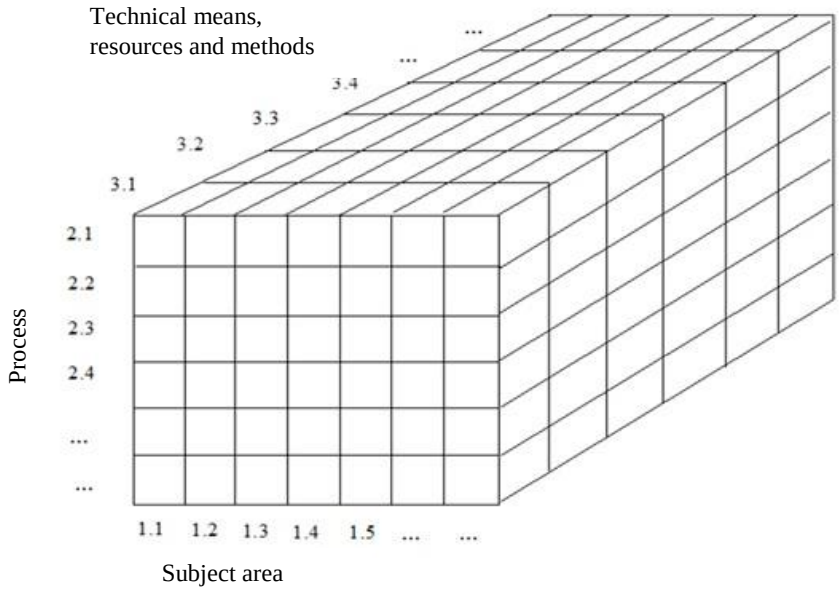

Figure 3: The technology of strategic decisions development

Each edge of the cube reflects a certain part of the technology and consists of certain elements. Let us examine them.

2.1. Subject field, activity category, the subject of management

All that needs changing and what will undergo management influence [7]:

1) Marketing activities.
2) Supply activities.
3) Production activity.
4) Sales.

5) HR activities.
6) Financial and economic activity.
7) Administration and maintenance activity ... etc.

2.2. The process of a strategic decision development

Strategic decisions reflect management's assessment of what the organization should look like and what it should do. These include the idea of a big change in the system of the organization. Such decisions are extremely complex and involve varying degrees of uncertainty. In modern literature, the concept of "strategic decisions" replaces the term "strategy", whereby it is difficult to find a clear definition of "strategic decisions". However, the existing approaches are united in the fact that strategic decisions are to be called management decisions that are focused on the future and lay the foundation for operational decisions; they are associated with considerable uncertainty because take into account uncontrollable external factors, related to the involvement of significant resources and can have very serious long-term consequences for an enterprise. Thus, the process of strategic decisions development is the process of developing a strategy, the essence of which is in the implementation of five main stages (Fig. 4).

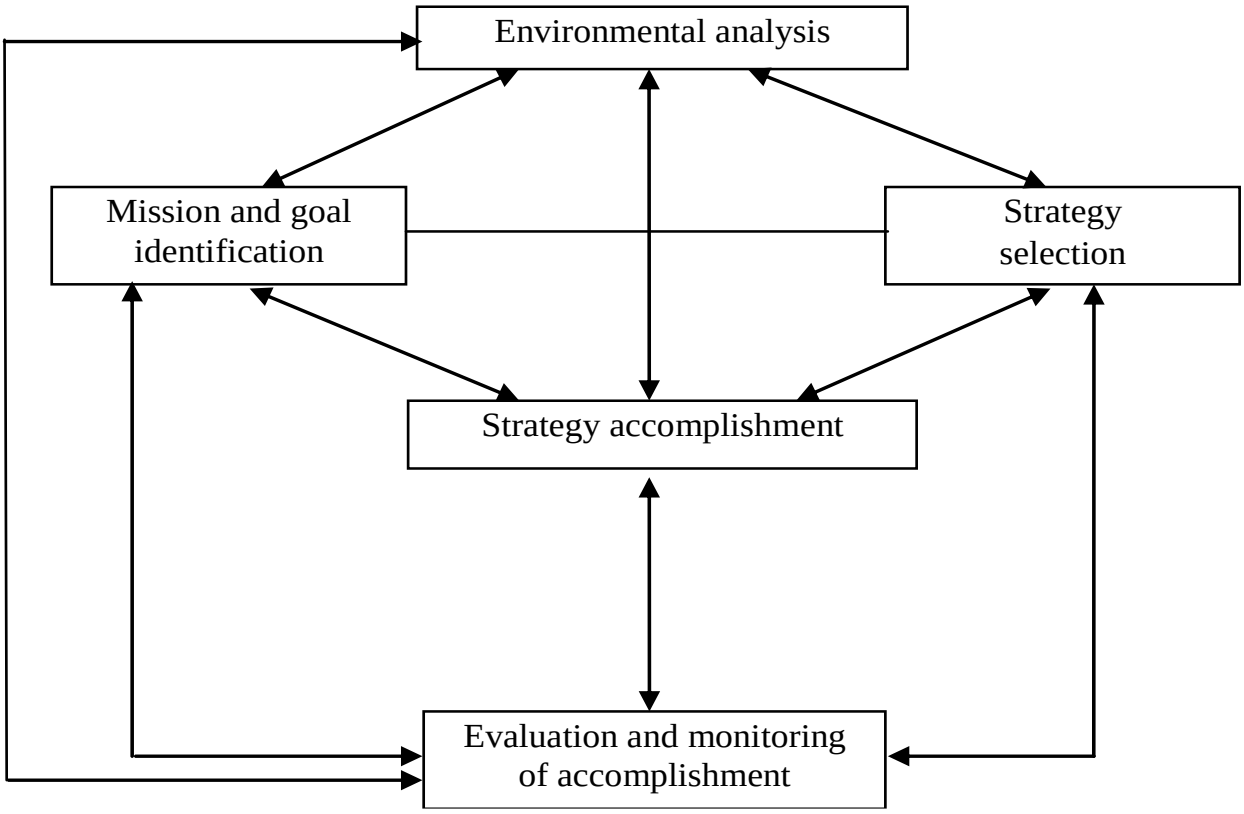

Figure 4: The process of strategic decisions development

2.3. Resources, technical means and methods of strategy development

Resources are a quantitative measure to the possibility of any activity accomplishment; conditions allowing the appropriate changes to get the desired result (Fig. 5) [2]. Technical means of strategic decision-making is equipment for receiving, processing and storage of information, technical subjects of mental work (media, means of document creation, means of the operational documents copying, tools for document processing, means of document storage and retrieval, means of communication, specialized furniture and equipment for the premises) [4].

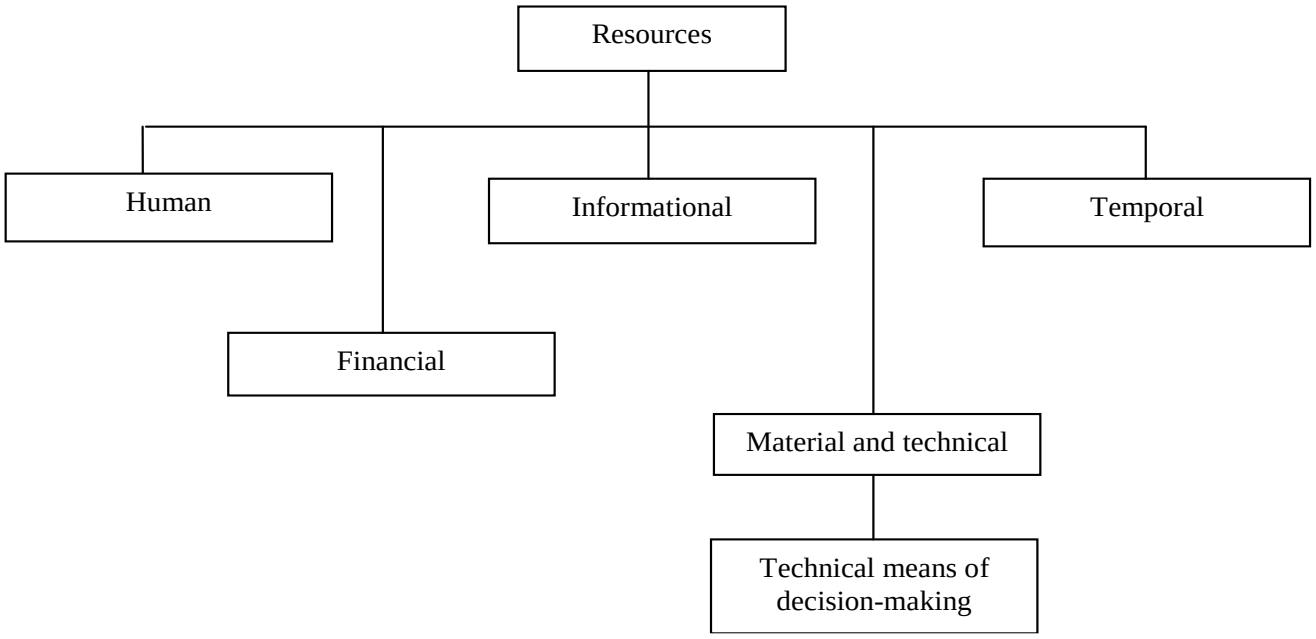

Figure 5: A typical set of the organization's resources

Methods of decision-making are specific ways in which the problem can be solved:

1) The methods used at the stage of problem detection and criteria formulation (Case method, two-round questionnaire, factor analysis, multidimensional scaling, simulation techniques, methods for strategic analysis, etc.).
2) The methods used to the stage of alternatives determining ("brainstorming", morphological analysis, methods of associations and analogies, methods of control issues and collective notebook, a method of "opening matrices" synectics, etc.).
3) The methods used in the stage of evaluation alternatives (methods of multicriteria evaluation, expert methods, factual methods, combined methods, methods of strategic analysis, etc.).
4) The methods used in the selection stage, the implementation of decision and evaluation of results (functional-cost analysis, the method of chain substitutions, causal analysis, etc.).

The proposed technology can be applied not only to single but also to all activities of an organization. For example, while studying the technology of making strategic decisions in the area of human resource activities, it is required to change the subject area for all the types of work in the field of personnel management (personnel search and selection, placement, adaptation, certification and assessment, rotation, reproduction, development and training, motivation and motivation, business management career and culture, socio-psychological climate, workplace organization, etc.). In addition, for each organization the structure of elements will naturally be different while, for example, all the proposed activities are not typical for all organizations. This kind of a model combined with a set of specific research methods allows the diagnosis of strategic decision-making process in the context of certain types of activity and within each tool, as well as to identify weaknesses or "bottlenecks". To do this, it is necessary "to cut into layers of" the cubic figure and to get a table (matrix) for further evaluation. For example, fixing the third rib of cube, you can get a model of efficiency and quality assessment to ensure the strategic management of information (Table. 1). Where quantitative estimates at the intersection of the activities and stages of the process indicate the opinion of experts on a five-point scale, and the indicators of the real state - the percentage of the maximum assessment.

Kinds of activities / Steps	Marketing	Supply	Production	Sales	Human Resource	Financial Management	Economic activity	The Index of the Real State%
1. The Identification of the mission and objectives	5	3	4	3	4	4	3	74,3
2. Analysis of the organizational environment	5	3	5	4	3	5	2	77,1
3. Analysis of alternatives and strategy selection	4	2	3	5	4	4	3	71,4
4.Implementationofthestrategy	4	1	3	3	2	5	4	62,8
5. Strategy evaluation	3	1	4	4	3	5	3	65,7
The index of the real state,%	84,0	**40,0**	76,0	76,0	64,0	92,0	60,0	70,3

Table 1: Assessment of ensuring the strategic management of information

3. CONCLUSION

Summarizing all the above, it can be noted that the proposed model of the technology of strategic decisions development is a systematization of knowledge and conceptions concerning the development of a significant management product - strategic decisions (strategies). And also it can serve as a model for the evaluation of strategic decisions at different levels of management in any field of the organization.

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MODEL OF COMPETITIVE STABILITY OF AN ENTERPRISE WITHIN THE FRAMEWORK OF THE LIFE CYCLE CONCEPT

Irina Maksimenko
Siberian Federal University
Krasnoyarsk, Svobodny pr. 79, 660074, Russian Federation
iriva16@mail.ru

Olga Filonchik
Siberian Federal University
Krasnoyarsk, Svobodny pr. 79, 660074, Russian Federation
oly-fill@yandex.ru

ABSTRACT

In order to develop a systematic understanding of the competitive stability of the enterprise, the author considers it appropriate to consider this definition through the prism of organizational transformations that occur in the process of successive stages of the life cycle. The degree of competitive stability at each stage is determined by a unique architecture of variables related to organizational issues, the context of organizational development, and features of priority strategic decisions. The configuration of these parameters inevitably transforms the business model, directing its key attributes to maintain competitive stability at each stage of the lifecycle. The article offers a three-dimensional matrix model of competitive stability of the enterprise. The stages of the life cycle, indicators of competitiveness and sustainability of the enterprise are considered as key parameters that determine competitive stability. The author defines the main descriptors that determine the position of the enterprise in the matrix fields. The model of competitive stability presented in the article in the context of life cycle stages determines the basic strategic categories: competitiveness and sustainability. According to the author's interpretation, the first of them acts as a platform for meeting the competition of today, and the second is aimed at meeting the competitive challenges of tomorrow. The author's model of competitive stability can be used as a tool for diagnosing the process of organizational development, contributing to the effectiveness of functioning in a turbulent environment. The capabilities of the model allow us to preventatively identify the crises of the competitive space, creating prerequisites for the formation of proactive and adequate to the dynamics of the external environment management decisions of a strategic nature.

Keywords: *competitive stability, competitiveness, enterprise life cycle, organizational development, strategic decisions*

1. INTRODUCTION

Business operation in an economic crisis gives rise to a new perspective on strategic decision making. Today, the talent of top management to effectively run a business gains special relevance in making decisions related to strategic revival or restructuring, intended to ensure competitive stability. The latter is under the threefold influence of changes in the macroenvironment, the forces of industry determinants and internal decision-making processes in companies. The key condition that affects these processes is the possession of relevant competencies related to the life cycle management of the enterprise using effective business models. These models determine competitive stability and are a source of competitive advantages that a company has and renews cyclically. It should be noted that, according to [1], the concept of competitive stability is based on the economic sciences and paradigms related to business practice. This understanding allows us to expand the scope of research in matters related to ensuring competitive stability at various stages of the company's life cycle.

2. METHODS

The methodological objectives of the article are based on the concept of competitive stability and life cycle theory. Various models, approaches and concepts presented in the literature that make up the concept of competitive stability are quite ambiguous and often difficult to interpret. On the one hand, they mention the stability of the business, and on the other hand, a multifaceted view of the company is presented taking into account the interests of stakeholders. For example, W. Stubbs, C. Cocklin (2008) argue with regard to sustainable development that companies should strive to generate revenue. Profit is used to maintain competitive stability, which is ensured by the achievement of socio-economic goals and financial indicators [2]. In turn, T. Dyllick, K. Hockerts (2002) present a model based on the concept of competitive stability, which is mapped in the shape of a triangle with the angles concentrated, respectively on financial, environmental, and social parameters [3]. F. Boons, F. Lüdeke-Freund (2013) focused on linking the concept of competitive sustainability with innovation. In their view, the company's sustainable success depends on innovation. Defining the rules for the functioning of a sustainable business model should be based on the creation of technological innovations, which will allow to outline new markets after commercialization [4]. The interconnection of the concepts of CSR (Corporate Social Responsibility) and financial aspects of management is emphasized by A. Carroll, K. Shabana (2010), who believe that, generally, arising from the review of practical business cases, CSR has a favorable impact on competitive stability [5]. F. Boons, C. Montalvo, J. Quist, M. Wagner (2013) believe that competitive stability should be supported by the state through appropriate policies. Companies and the government should closely collaborate to create innovations that are implemented in sustainable business models [6]. The studies of J. G. York (2009) define three conditions that guide investors when they invest in maintaining competitive stability – the required increase in ROIC (return on invested capital), the minimum value of WACC (weighted average cost of capital) and the increase in the availability of capital. This approach is cost-effective and valuable for startups [7]. S. Schaltegger, E. Hansen, F. Lüdeke-Freund (2015) define a business model for competitive sstability as one that 1) helps in analysis, management and communication; 2) forms a value proposition for customers and all other stakeholders; 3) reflects economic value when a company goes beyond its organizational boundaries [8]. With respect to the theory of the life cycle, it should also be noted, that in this area of economic research there is no methodological agreement. There are certain disagreements among theorists regarding the number of stages of the life cycle, their terminology and key characteristics. Some authors offer three stage models, others suggest four, five or even more stages. Consequently, the history of the development of concepts describing the life cycle of companies seems to be extremely eventful. The first clearly structured process model in commercial private business was the model of G. L. Lippitt, W. A.Schmidt (1967). It identifies three stages: «start-up», «youth», «maturity» and proposed management tasks for the transition through stages and the parameters of the structure, priorities, formalization and conflicts of internal interests as a condition for the transition through stages [9]. Model B. Scott (1971) reveals three different types of organizations that evolve from each other in sequence. It includes informal and formalized stages, as well as the industrial phase [10]. L. Greiner (1972) presented a meaningful model based on the alternation of crises (revolutions) and «stages of tranquility», which includes five stages: a crisis of leadership, a crisis of autonomy, a crisis of control, a crisis of prohibitions, a crisis of a new stage [11]. According to the results of his research, J. Kimberly (1979) concludes that the first recognizable stage occurs even before the actual foundation of the enterprise. The second stage includes the selection of «main patterns of movement», hiring staff. The third stage involves the formation of organizational identity. At the fourth stage, the organization becomes more conservative and predictable [12]. The most famous and widely used is I. Adizes theory of lifecycles (1979), in which the process of organizational development is presented as natural,

phase-gate and programmed, providing for the inevitable and phased passage by the organization during the development of a number of mandatory phases (stages). The concept indicates the impossibility of leaping over these phases. It includes 10 stages [13]. D. L. Lester, J. A. Parnell, M. L. Menefee (2003) have developed an empirical scale for measuring lifecycle stages. Using this scale, you can predict a change in the characteristics of the enterprise during the stage-to-stage transition within the life cycle of the enterprise [14]. While some scholars argue about the validity of lifecycle theory, its applicability has been repeatedly confirmed by empirical studies. The unique architecture of variables related to organizational issues, the context of organizational development and the characteristics of priority strategic decisions inevitably transforms the business model at every stage of the company's life cycle. Summarizing the results of studies on life cycle theories, we conclude that companies go through three enlarged stages in their development: growth – stage of Growth (G), maturity – Maturity stage (M) and regression – Regression stage (R). And the degree of competitive stability of the company at each of these stages varies. It depends on the basic strategic categories: competitiveness and stability. The first of them acts as a platform to meet the competition today, and the second is aimed at meeting the competitive challenges of tomorrow. The combination of the development level of these two categories determines the degree of competitive stability of the company at a particular point in time. And integration with the life cycle stage allows you to create a pool of strategic decisions for each situation, depending on the current market position of the business. Based on these provisions, the authors proposed a three-dimensional matrix model of the competitive stability of the enterprise (Figure 1).

Figure following on the next page

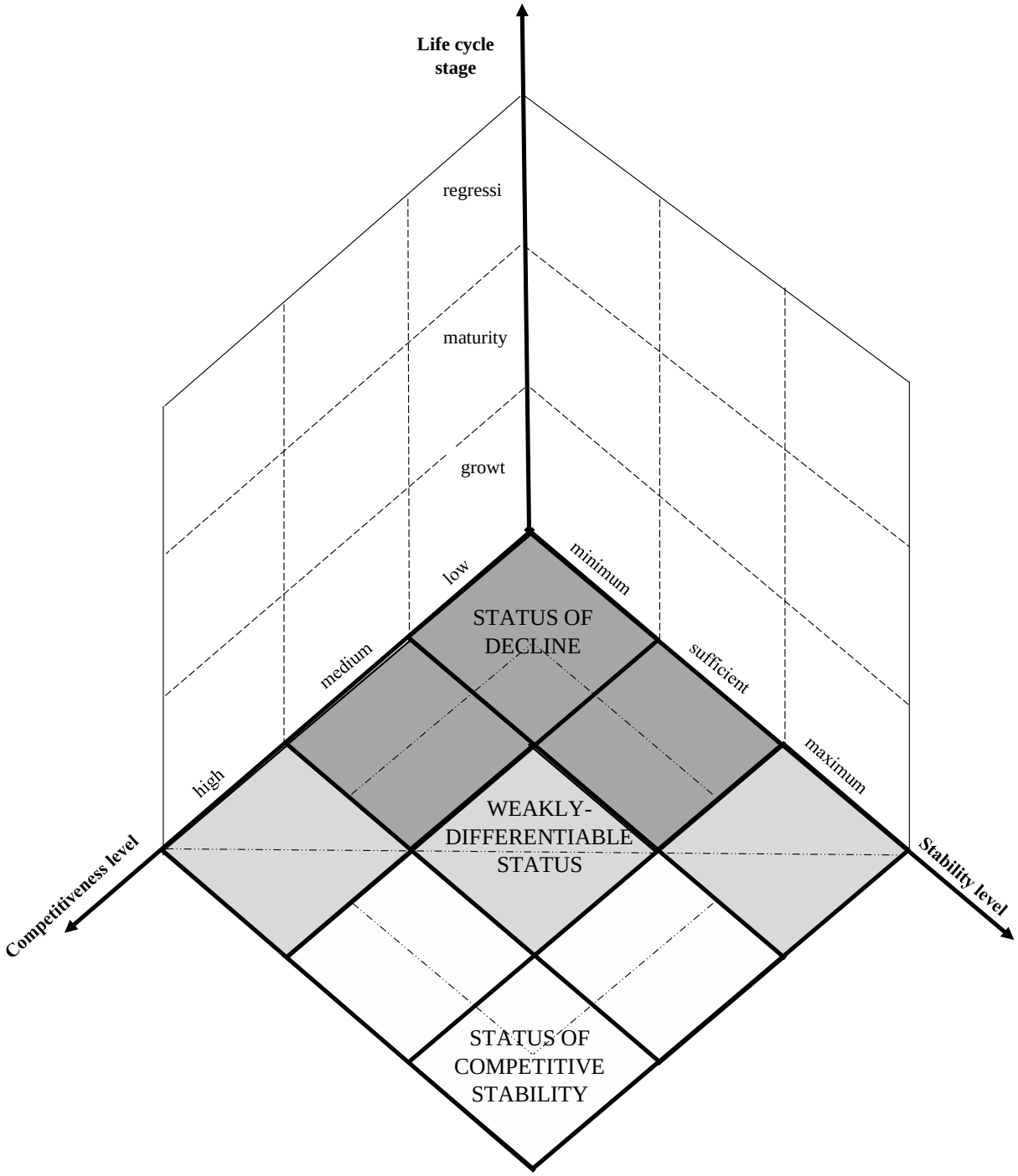

Figure 1: Three-dimensional matrix model of the competitive stability of an enterprise (source: developed by the authors)

The configuration of the parameters of the competitiveness and stability of the company forms 9 quadrants, which are combined into three zones that characterize the current state of the company. The state of decline – status of Decline (Ds) – the average competitiveness of the enterprise at market and below the average level amid minimal market stability. The continued negative dynamics of such processes may lead to the liquidation of the business. A weakly differentiated state – Weakly-Differentiable status (WDs) – is a relatively unstable state, transitional from one development cycle to another. Against the background of significant competitive advantages, almost zero stability can be observed. Conversely, with a low level of competitiveness, an enterprise can maintain its stability over time.

This state is characterized by passing of the bifurcation points, i.e. the achievement of such a critical state, in which the company can «slide» to a state of decline, or move to a new, more differentiated level - a state of competitive stability. The state of competitive stability – status of Competitive stability (Cs) – the company's position in the market is stable, it is supported by a high level of competitiveness against the background of almost maximum stability. To determine the state of the company and its position on the market, it is necessary:

- determine the actual values of the level of competitiveness and the level of stability of the company;
- choose the area into which the calculated values of these categories fall (for the level of competitiveness – low, medium, high; for the level of stability – minimum, sufficient, maximum);
- determine the stage of the life cycle of the company (growth, maturity or regression);
- find the quadrant of the intersection of three parameters on the matrix, which will determine the state of the company on the strategic field of the matrix.

3. RESULTS

Possible guide path of the company, as a rule, are associated with the improvement or stabilization of the existing market position, which implies the direction of actions to move to more favorable quadrants of the matrix – to the zone characterizing the state of competitive stability. Thus, the choice of a pool of strategic decisions in each case can be represented on the basis of the market position (which is determined by the level of competitiveness and the level of company stability) and the stage of the life cycle. Figure 2 shows a «two-dimensional» section of the matrix characterizing the company's market position at the first stage of the life cycle – the growth stage.

		Stability level		
		minimum	sufficient	maximum
Level of competitiveness	low	GDs_1	GDs_3	$GWDs_3$
	medium	GDs_2	$GWDs_1$	GCs_3
	high	$GWDs_2$	GCs_2	GCs_1

Figure 2: Matrix of enterprise competitiveness at the growth stage (source: developed by the authors)

The main strategic efforts at this stage are focused on the development of competitive stability, the creation of «backlogs of competitiveness», which allows for sufficiently aggressive growth in conditions of intense competition. The system of possible strategic decisions at the growth stage for a company with various market position variations is given in presented in Table 1

Table following on the next page

Matrix quadrant	Business market position	Strategic decisions
Status of Decline		
GDs_1	Market outsider	• focus on fast-growing market segments
GDs_2	slow build-up of competitive advantages	• careful investment, based on a thorough analysis of the business model
GDs_3	gradual strengthening of market position	• increasing of market share • «guerrilla» offensive strategy
Weakly-Differentiable status		
$GWDs_1$	Controlled growth. Stable condition	• additional investment; strengthening competitive advantages by improving the quality of products / services; • introduction of product and process innovations
$GWDs_2$	Market position with a significant share of risk	• focus on productivity growth; • quick and adequate response to the emergence of new technologies • emphasis on pricing policy
$GWDs_3$	Finding your own market niche	• focusing on limited geographical areas
Status of Competitive stability		
GCs_1	Active growth. Applicant for market leadership	• a significant increase in the volume of activities; • increasing market share. Additional investment
GCs_2	Strengthening market position. Stable growth	• increasing market share; additional investment; • search for new consumer groups and territorial markets
GCs_3	The position of the follower	• additional investment in the business in order to increase competitiveness, protection and subsequent increase in market share. • focus on differentiation through improved quality and innovation

Table 1: Description of the main positions of the company competitive stability matrix at the growth stage
(source: developed by the authors)

Figure 3 illustrates the «two-dimensional» slice of the matrix characterizing the market position of the company at the second stage of the life cycle – the maturity stage.

		Stability level		
		minimum	sufficient	maximum
Level of competitiveness	low	MDs_1	MDs_3	$MWDs_3$
	medium	MDs_2	$MWDs_1$	MCs_3
	high	$MWDs_2$	MCs_2	MCs_1

Figure 3: Matrix of competitive enterprise maturity
(source: developed by the authors)

This stage is characterized by a business reaching a plateau where most enterprises achieve a certain state of competitive stability, however, under the influence of volatility of environmental factors, not so favorable situations may be required that require an adequate response (table 2).

Matrix quadrant	Business market position	Strategic Decisions
Status of Decline		
MDs_1	Very weak market position	• focus on cost reduction • focus on promotional channels
MDs_2	Loss of market stability. Risky position	• flank protection – strengthening of the most vulnerable places of business • focus on promotional channels
MDs_3	Loss of competitive advantage. Risky position	• defensive competitive strategy (joining alliances, cooperation with stronger market «players»)
Weakly-Differentiable status		
$MWDs_1$	Stable state. Applicant for market leadership	• strengthening competitive advantages by improving the quality of products / services; • focus on profitability growth; • desire for the effect of «scale»; • ensuring low costs
$MWDs_2$	The presence of competitive advantages that may be lost at any time	• desire to maintain a market position and maintain market share; • increase in volumes of activity; additional investment; • integration (direct, reverse); • modernization of production and business processes
$MWDs_3$	Confident market position in a limited segment. Company with a stable niche	• continued investment in the business, while the industry continues to grow in order to protect its leading position in a certain segment; • «flank» offensive; • specialization in a specific product / service
Status of Competitive stability		
MCs_1	The highest degree of competitive stability. Market leader	• creation of typical business conditions, business replication; • use of generated profits for investment in development projects
MCs_2	The presence of competitive advantages that allow you to keep the business in a stable state	• frontal offensive; • acquisition of competitors at a low price; • scaling up activities; • divercification of activities
MCs_3	Partial loss of competitive advantage against the background of still stable market positions	• strategy for capturing market niches and strong differentiation; • cautious investment; • optimization of production and business processes

Table 2: Description of the main positions of the enterprise competitive stability matrix at the maturity stage
(source: developed by the authors)

The company's market position at the third stage of the life cycle – the stage of regression, depending on the combination of the level of competitiveness and stability is shown in Figure 4.

		Stability level		
		minimum	sufficient	maximum
Level of competitiveness	low	RDs_1	RDs_3	$RWDs_3$
	medium	RDs_2	$RWDs_1$	RCs_3
	high	$RWDs_2$	RCs_2	RCs_1

Figure 4: Matrix of enterprise competitiveness at the regression stage (source: developed by the authors)

This period of the organizational and economic life of the company is associated with attempts to rationalize its activities and maintain competitive stability in at least some certain business segments. Strategic actions are focused on the proactive identification of crises (Table 3).

Table following on the next page

Matrix quadrant	Business market position	Strategic Decisions
Status of Decline		
RDs_1	Market outsider	• «collapse» of the business; • termination of investment; • sales of assets;
RDs_2	Lack of market stability. A position with a very high share of risk	• «phasing out» or «partial phasing out of a business»; • limited investment
RDs_3	Complete loss of competitive advantage. Position with a very high share of risk	• lack of investment; • use of alternative pricing methods • sale of non-core assets
Weakly-Differentiable status		
$RWDs_1$	Electoral position	• correction of production capacities, reduction of the parametric series (nomenclature, assortment); • concentration on the minimum market segment
$RWDs_2$	High-risk turbulent position	• careful continuation of the business; • monitoring of the market / industry in order to determine the moment of coagulation; • reduction of investments to the minimum necessary level
$RWDs_3$	Conservative position with a high share of risk	• continue the business with caution or partial «curtailment»; • cash flow balance control
Status of Competitive stability		
RCs_1	Relative stability in the short term	• selective investment, only in those projects that can significantly improve market positions; • search for new sales markets, new market segments; • business diversification
RCs_2	Inertial position	• maintaining the market segment as long as it makes a profit, with a gradual curtailing of the business; • «skimming»
RCs_3	Defensive position	• partial «curtailing» of the business with the transfer of cash to more promising areas • profitability control

Table 3: Description of the main positions of the company competitive stability matrix at the stage of regression
(source: developed by the authors)

Therefore, the proposed model of competitive sustainability can be used as a tool for diagnosing the process of organizational development, contributing to the efficiency of functioning in a turbulent environment.

4. CONCLUSION

The functioning of companies in the context of the crisis determines new mechanisms not only for competition, but also mainly for developing business rules. Companies should strive to develop business models that can provide a platform for competitive stability.

In order to be able to implement this, they must make strategic decisions related to the stage of the life cycle in which the enterprises are located. Only such a configuration of the business model and strategy, corresponding to the stage of the company's life cycle, can provide an acceptable level of growth and development, creating the basis for the company's competitive stability over a long period of time. Moreover, the study of the structural transformation of organizational elements at different stages of the life cycle provides a powerful tool for managing change, which is based on the laws of transition from one stage to another and the internal logic of company development. The proposed three-dimensional model of competitive stability serves a «road map» that identifies critical organizational transitions, as well as traps that the company should strive to avoid during its functioning. Thus, the capabilities of the model make it possible to proactively identify crises in the competitive space, creating the prerequisites for the development of proactive and adequate strategic dynamics management decisions.

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EARNINGS MAXIMIZING FROM TRADING OF FINANCIAL MARKET THROUGH MOVING AVERAGES

Jan Chutka
University of Zilina,
The Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 1, 010 26 Zilina, Slovakia
jan.chutka@fpedas.uniza.sk

ABSTRACT

If we become interested in the area of trading on the financial market and predicting the future price development of financial instruments, we will come across a wide range of methods and procedures. One of the most widely used methods is technical analysis, which attempts to predict future price movements by studying past market prices and volumes. Within technical analysis, mathematical indicators are very popular. One of the first and basic mathematical indicators of technical analysis is the moving average. Our article will focus on moving averages and their use in the analysis of financial asset prices. The aim of our article is to verify the efficiency of using the moving average as the main analytical tool. In the first chapter of our paper, we have built the theoretical foundation needed for our further research. The second chapter is focused on defining the necessary procedures and variables needed for the research itself. We identify the time interval of the application, a suitable market for the realization of the research and the actual setting of input variables necessary for the calculation of the indicator. In the third chapter we publish the measured values and results of the research together with their interpretations. In the last chapter, we reviewed all our research and further research opportunities in this area. We believe that our research will be a valuable asset of research in this area.

Keywords: *moving average, prediction*

1. INTRODUCTION

Mathematical indicators are one of the largest and most widely used groups of technical analysis tools. This is due to their wide spread, ease of application and interpretation. However, like all methods, mathematical indicators cannot be considered ideal and have many drawbacks. One of the basic indicators of technical analysis are moving averages, the calculation, application and interpretation of which we will discuss in detail in this paper. The aim of our contribution is to verify the efficiency of using the moving average as the main analytical tool. In the first chapter of our paper, we will create the theoretical foundation needed for our further research. The second chapter will be focused on defining the necessary procedures and variables needed for the research itself. We will identify the time interval of the application, a suitable market for the realization of the research and the actual setting of input variables necessary for the calculation of the indicator. In the third chapter we will publish the measured values and results of the research together with their interpretations. In the last chapter, we will review all our research and further research opportunities in this area [5,7,10].

2. THEORETICAL BASIS

Moving average is an indicator of trend monitoring based on past prices. As its name implies, it serves to follow the trend, which means that it either increases or decreases in line with the market. As you may have noticed, financial asset prices may fluctuate and change rapidly. Moving averages help smooth the price movement. This makes it easier to identify trends. In addition, moving averages are used not only to determine the direction of the trend, but also to enter the trade [1,3,11].

2.1. Simple moving average (SMA)

One of the most popular technical analysis tools is the Simple Moving Average (SMA), which is calculated by calculating the closing prices of a given market for a selected number of periods and then dividing that number by the number of periods. Most moving averages are based on closing prices. A ten-day simple moving average is a ten-day sum of closing prices divided by ten. As its name implies, the moving average is the average that moves. Old data is dropped because new data is available [2,3]. This causes the average to move over time. If those prices are *PM, PM-1, PM-2, … , PM-(n-1)* then the calculation formula is:

(1)

$$\begin{aligned}\bar{p}_{\mathrm{SM}} &= \frac{p_M + p_{M-1} + \cdots + p_{M-(n-1)}}{n} \\ &= \frac{1}{n}\sum_{i=0}^{n-1} p_{M-i}.\end{aligned}$$

When calculating successive values, a new value comes into the sum, and the oldest value drops out, meaning that a full summation each time is unnecessary for this simple case:

(2)

$$\bar{p}_{\mathrm{SM}} = \bar{p}_{\mathrm{SM,prev}} + \frac{1}{n}(p_M - p_{M-n})$$

The period selected depends on the type of movement of interest, such as short, intermediate, or long-term. In financial terms, moving-average levels can be interpreted as support in a falling market or resistance in a rising market. Moving averages are almost always used in their graphical form for financial market forecasting purposes. Such a form of expressing a simple moving average is formed by a single line (SMA) entered in the price chart of the financial instrument. A simple example of calculation:
Daily closing prices: 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
First day of 10-days SMA: (11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20) / 10 = 15.5
Second day of 10-days SMA: (12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 + 21) / 10 = 16.5
Third day of 10-days SMA: (13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 + 21 + 22) / 10 = 17.5

2.2. Exponential moving average (EMA)

In comparison with SMA, EMA attaches more weight and importance to the latest prices and less weight to older prices for the selected period. This gives exponential moving averages the advantage of a faster response to price fluctuations than is the case with a simple moving average. On the other hand, this can be considered a disadvantage because EMA is more susceptible to false signals. An important thing to note is that EMA responds faster to price turnover, while SMA lags behind. Given that exponentially moving averages attach more weight to current prices than previous prices, EMA is considered by many traders to be superior to the simple moving average [2,6,8]. The SMA calculation formula is as follows:

(3)

$$\mathrm{EMA}_{\mathrm{today}} = \mathrm{EMA}_{\mathrm{yesterday}} + \alpha\left[\mathrm{price}_{\mathrm{today}} - \mathrm{EMA}_{\mathrm{yesterday}}\right]$$

Expanding out $EMA_{yesterday}$ each time results in the following power series, showing how the weighting factor on each datum point p_1, p_2, etc., decreases exponentially:

$$\mathrm{EMA}_{\mathrm{today}} = \alpha\left[p_1 + (1-\alpha)p_2 + (1-\alpha)^2 p_3 + (1-\alpha)^3 p_4 + \cdots\right] \tag{4}$$

Where:
p_1 is price today,
p_2 is price yesterday,
and so on.

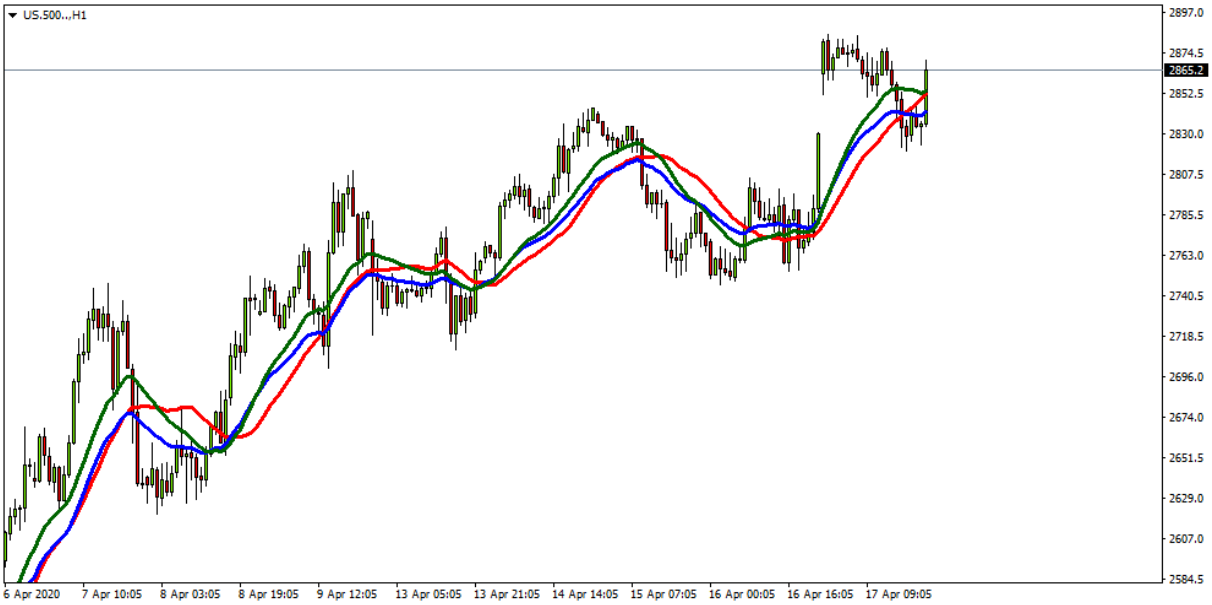
2.3. Weighted moving average (WMA)

The last most commonly used type of moving average is the weighted moving average (WMA). The difference of this kind of moving average is that every day the cream included in the calculation assigns a certain weight. Most often, the highest weight is assigned to the last, most recent day in the calculation, and the oldest day is given the lowest weight. This procedure follows with logical consideration that the last day in the calculation has the highest predicative ability on the basis that it contains all known influencing factors and their actual rate. In technical analysis of financial data, a weighted moving average (WMA) has the specific meaning of weights that decrease in arithmetical progression [2,4,9]. In an n-day WMA the latest day has weight n, the second latest $n - 1$, etc., down to one.

The weighted moving average calculation formula is as follows:

$$\mathrm{WMA}_M = \frac{np_M + (n-1)p_{M-1} + \cdots + 2p_{(M-n+2)} + p_{(M-n+1)}}{n + (n-1) + \cdots + 2 + 1} \tag{5}$$

Figure 1 : Sample of 3 moving averages (SMA = red, EMA = blue, WMA = green)



Source: Own processing

3. RESEARCH PARAMETRES

The aim of our contribution is to verify the efficiency of using the moving average as the main analytical tool. Our research will focus on verifying the efficiency of using moving averages as the main analytical tools. We will conduct our research on the price chart of futures contract on the S&P500. The reason for choosing this financial instrument is that, as a stock index of the 500 largest publicly traded companies in the US, it shows some stability and there are no extreme fluctuations due to the individual influencing factors of each company. The time interval for the application of moving averages was chosen from 1.1.2019 to 31.12.2019. This is one calendar year. We chose this interval because we consider it ideal for its length, it will take into account seasonality and it will also include various market situations. The results obtained on such a sample of data will have a certain predicative robustness. The research itself will consist of applying a simple, exponential, and weighted moving average over a period of 25, because it is a default setting. The research itself will be carried out on a candle price chart with a time period of rendering one candle H = one day. The reason is that the given time period of the price graph will ensure the intraday price fluctuations.

4. RESULTS AND INTERPRETATION

Table 1 : Measured data during SMA application

A	B	C	D	E	F
1	2019.01.08.	2562,2	UP	2442,3	2820,8
2	2019.03.07.	2759,5	Down	2820,8	2721,3
3	2019.03.11.	2764	UP	2721,3	2865,3
4	2019.03.25.	2800,4	Down	2787,9	2834,2
5	2019.03.27.	2802,2	Down	2835	2791,5
6	2019.03.28.	2803,9	UP	2790,6	2960,9
7	2019.05.06.	2910,2	UP	2883,4	2937,8
8	2019.05.07.	2910,6	Down	2961,3	2727,9
9	2019.06.06.	2840,5	UP	2728,3	3029,5
10	2019.07.31.	2993,4	Down	3029,5	2776
11	2019.08.01.	2993,9	UP	2943,6	3014,1
12	2019.08.22.	2936,3	UP	2893,7	2939,7
13	2019.08.23.	2930,7	UP	2893,7	2936,3
14	2019.08.29.	2912,2	UP	2813,4	2946,6
15	2019.09.02.	2904,1	UP	2888,2	3023,9
16	2019.09.03.	2898,9	Down	2946,2	2889,9
17	2019.09.27.	2962,1	Down	3024,7	2945,7
18	2019.10.01.	2969,1	Down	3024,7	2854,5
19	2019.10.11.	2969,7	UP	2854,5	2993,7
20	2019.10.14.	2968,5	Down	2993,7	2953,3
21	2019.10.15.	2969,1	UP	2853,9	3157,5
22	2019.12.03.	3100,7	Down	3157,5	3068,6
23	2019.12.04.	3103,6	Up	3068,6	3253,2

Source: Own processing

Table 2 : Measured data during EMA application

A	B	C	D	E	F
1	2019.01.07.	2554,3	UP	2442,1	2567,8
2	2019.01.08.	2555,1	UP	2442,1	2819,2
3	2019.03.07.	2752,4	Down	2819,2	2721,4
4	2019.03.11.	2753,2	UP	2721,4	2866,2
5	2019.03.25.	2796	Down	2865,2	2788,7
6	2019.03.27.	2798,4	Down	2865,2	2791,1
7	2019.05.06.	2903,5	Down	2960,6	2882,6
8	2019.05.07.	2903	Down	2960,6	2801,8
9	2019.05.16.	2884,6	UP	2801,8	2893,8
10	2019.06.06.	2833,7	UP	2728,2	3029,5
11	2019.07.31.	2984,4	Down	3029,5	2775,6
12	2019.08.01.	2981,5	UP	2943,7	3014,1
13	2019.08.19.	2925	UP	2817,1	2931,7
14	2019.08.20.	2923	UP	2817,1	2931,7
15	2019.08.21.	2923,4	UP	2817,1	2931,7
16	2019.08.22.	2923,4	Down	2939,7	2903,9
17	2019.08.23.	2917	Down	2939,7	2812,8
18	2019.08.29.	2909,8	UP	2812,8	2946,5
19	2019.09.02.	2909,8	Down	2946,5	2888,8
20	2019.09.04.	2912,2	UP	2888,8	3024
21	2019.09.24.	2967,9	Down	3024	2957,6
22	2019.09.25.	2969,1	UP	2952,8	2995,4
23	2019.09.26.	2969,5	Down	3024	2964
24	2019.09.27.	2969,5	Down	3024	2945,7
25	2019.09.30.	2969,9	Down	3024	2963,6
26	2019.10.01.	2967,9	Down	3024	2854,5
27	2019.10.10.	2948,8	UP	2948,2	3157,5
28	2019.12.03.	3096,2	Down	3157,5	3068,9
29	2019.12.04.	3097,5	UP	3068,9	3253,6

Source: Own processing

Table following on the next page

Table 3 : Measured data during WMA application

A	B	C	D	E	F
1	2019.01.04.	2521,5	UP	2441,7	2819,9
2	2019.03.06.	2774,7	Down	2819,9	2721,5
3	2019.03.11.	2773,9	UP	2721,5	2865
4	2019.03.22.	2807,8	Down	2865	2790
5	2019.03.26.	2810,2	UP	2790	2834,4
6	2019.03.27.	2811	Down	2865	2790,8
7	2019.03.28.	2811,8	UP	2790	2961
8	2019.05.06.	2919,8	UP	2881,9	2937,6
9	2019.05.07.	2919	Down	2961	2728,5
10	2019.06.05.	2822	UP	2728,5	3023,5
11	2019.07.19.	2985,3	Down	3023,5	2978
12	2019.07.22.	2986,6	UP	2973,2	3029,5
13	2019.07.31.	3000,7	Down	3029,1	2957,8
14	2019.08.01.	2996,9	UP	2944	3013,6
15	2019.08.19.	2919,5	UP	2816,8	2932,4
16	2019.08.20.	2916,1	Down	2932,4	2893,3
17	2019.08.21.	2914,8	UP	2893,3	2939,3
18	2019.08.23.	2906,6	Down	2939,3	2813
19	2019.08.29.	2896,3	UP	2813	2946,2
20	2019.09.02.	2896,3	Down	2946,2	2889
21	2019.09.03.	2897,2	UP	2888,2	3024,4
22	2019.09.24.	2975,9	Down	3024,4	2958
23	2019.09.25.	2979,7	UP	2953,5	2991,9
24	2019.09.26.	2981	Down	3024,4	2963,1
25	2019.09.27.	2981,6	Down	3024,4	2945,8
26	2019.09.30.	2982,9	UP	2945,8	2993,8
27	2019.10.01.	2981,6	Down	3024,4	2853,8
28	2019.10.11.	2954,1	UP	2853,8	3158,1
29	2019.12.02.	3115,2	Down	3158,1	3069,2
30	2019.12.04.	3116,5	UP	3069,2	3151
31	2019.12.10.	3122,9	Down	3151	3115,9

A - number
B - date
C - crossing price
D- price routing
E- potential stop loss price (low or high of correction)
F- potential take profit price (low or high of price movement)
Source: Own processing

Based on the research carried out, we can say that of the three types of moving averages the weighted moving average (WMA) has the greatest sensitivity to price changes during the period under review, identified 31 situations where the price crossed the moving average. The exponential moving average of such situations identified 29 and the simple moving average of only 23.

The reason is that, as the average calculation itself implies, the weighted moving average has the greatest sensitivity to the current price change. This fact tells us that we are able to react early to the price movement. This can be both an advantage and a disadvantage. In without trend market situations, the weighted moving average can also generate false signals. On the other hand, a simple moving average generates fewer signals but, as implied by the nature of the calculation, does not react sharply to the current strong price changes which may filter out a large number of false signals. Regarding the comparison of the effectiveness of moving averages, the most effective can be considered a simple moving average which identified the smallest number of signals, but the average point gain per signal reached 84.74 points. In the case of the exponential average, the average point gain per signal was 65.49 points and in the case of the weighted moving average only 65.35 points. Although the total point gain of the weighted moving average was the largest of all compared (2025.9 points), due to the high number of false inputs, we cannot consider it the most effective way to calculate the moving average. Possible further research could be devoted to comparing different settings of input variables into the calculation of individual moving average types. The resulting averages can provide interesting data for predicting changes in prices of financial instruments.

5. CONCLUSION

The aim of our contribution was to verify the efficiency of using the moving average as the main analytical tool. In the first chapter of our paper, we created the theoretical foundation needed for our further research. The second chapter was focused on defining the necessary procedures and variables needed for the research itself. We identified the time interval of the application, a suitable market for the realization of the research and the actual setting of input variables necessary for the calculation of the indicator. In the third chapter we published the measured values and results of the research together with their interpretations. In the last chapter, we will review all our research and further research opportunities in this area. We consider the goal of the article to be fulfilled and we believe that our contribution will be valuable in the field of research.

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MARKETING INSTRUMENTARIUM OF NON – PROFIT ORGANIZATIONS

Eva Kicova
University of Zilina, Department of Economics,
FPEDAS, Univerzitna 8215/1, 010 26 Zilina, Slovakia
Eva.Kicova@fpedas.uniza.sk

ABSTRACT

Non-profit organizations are an important part of the public sector, which in the form of various activities, in particular the providing of various services, performs tasks related to addressing the manifestations of market imbalances. In contrast to "traditional" business sector (profit sector), its task is not to generate profit but to provide consumer tasks. The priority interest of managers of non-profit organizations is to seek sponsors, partners or supporters, attract these entities (legal or natural persons) to their side in the long term. In order to help, many experienced marketing professionals have decided to deal with the topic of marketing management in non-profit organizations. The goal of any organization is to realize its main idea, which is the main product of the organization. In public relations, the non-profit organization recruits new partners that need to be looked after and maintained. A competition is high, so effective communication towards the target groups of non-profit organizations becomes an important tool of the marketing mix. A success in getting funding is directly proportional to the performance of managers in the field of marketing communication. Therefore, a systematic management of marketing creates an important position in the organizational structure of any non-profit organization. The current period of emerging economic and financial crisis requires a transparent management of financial sources that are provided to the non-profit sector. Financing of non-profit organizations depends on their reputation, position in the society and on the interest of target groups to help preferably on a regular basis if it is possible. It is important to prove the use of financial and material donations provided by sponsors and regularly inform the public about the activities of the non-profit organization. In the paper, the results of the survey conducted in the Zilina region that was aimed to find out how marketing and marketing tools were used in the practice of non-profit organizations. Only a well-chosen marketing strategy can enable the effective use of marketing tools for the benefit of non-profit organizations, which should also be addressed in the practice and management of any organization.

Keywords: *marketing, marketing strategy, non-profit organizations*

1. INTRODUCTION

Non-governmental organizations are an important part of the public sector, which, in the form of various activities, in particular the providing of various services, performs tasks related to addressing the manifestations of market imbalances. The public sector is not profit oriented, its main aim (role) is providing of consumer tasks. Therefore, the priority interest of managers of non-profit organizations is not to increase the financial or in-kind profit of the organization, nor to increase the income of the owners of equity capital (Carvalho et al., 2019). An integral part of the democratic society is except the existence of the private and public sector the existence of the third sector, which acts as an intermediary between the state and citizens. It contributes to problem solving and compromise between different groups in society (Fielden et al. 2019). We can come across a number of terms that are related to this issue. Each of these terms accentuates only some aspect of the issue. The third sector is a concept operating in the space between the state and the market. The non-profit sector is primary linked to the absence of a profit-oriented motive.

If there is any profit, it will not be shared among the owners, but will be returned to other community service programs. The volunteer sector highlights the proportion of volunteers, although paid employees also work in the sector. The non-governmental sector refers to the sector's independence from the state and the market (Gavurova et al. 2018). Non-profit organizations create a platform developing democracy. They are able to control state power and can provide the public with information on government activities. They are a tool for changes in the society. The objective necessity of their existence is related to the economic and social phenomenon of market failure. The failure mainly results from the existence of collective goods, externalities, monopolies and market imperfection (Mazanec et al., 2018) Non-profit organizations are one of the pillars of any society and an important element of a social stability. The organizations support the development of positive values and critical thinking due to which non-profit organizations are considered as a sector of morality. The importance of non-profit organizations is given by the fact that they influence almost all people (Reicher, 2019). Some autor provides an interesting classification of non-profit organizations – P and B organizations. The "P" is the abbreviation of the Czech term translated as "taking care of someone/something". The "B" is the abbreviation of the Czech term translated as "fighting". Both mean, that the author classifies non-profit organizations based on their main mission – the organizations that care of someone/something or organizations that fight for someone/something. The size of non-profit organizations, organizational structure, and financial situation are not the main elements of the organizations´ classification. The emphasis is placed on tactics of public relations and the way of communication with target groups. From the point of view of PB classification and communication tactics, the P organizations engage in activities that usually pursue non-conflicting interests. They are, for example, humanitarian, social or cultural institutions. However, they may also find themselves in a conflict position, which understandably may affect their profile, organizational structure and means of communication. In contrast to them, the B organizations by their basic mission already defend or promote a certain extra-individual interest, often against the interest of a private company, self-government or state (Carvalho et al. 2019). Of course, there are many other organizations between both mentioned types of organizations, such as religious or lifestyle-oriented. These organizations do not promote their program and ideology against organized opponents, but freely among people. Their main communication technique is mainly persuasion. Obviously, the B organizations are less stable in the field of the third sector because their object may still be another problem that can change the essence of the whole organization (Mazanec et al., 2019).

2. SPECIFIC FEATURES OF MARKETING MIX TOOLS AND MARKETING STRATEGIES OF NON-PROFIT ORGANIZATIONS

Non-profit marketing is all around us. Its results can be seen in a wide portfolio of products in shopping malls, advertisements, magazines, on internet, at work, school etc. The public is of the opinion that only large corporations operating in developed economies use marketing in their strategies. However, marketing activities are essential for the success of any organization, small or large, domestic or multinational, operating in the profit or non-profit sector (Hollowell et al., 2019). The basic marketing activities of non-profit organizations include ensuring continuous contact with service users and recognizing their needs, product/service development, which would be able to satisfy these needs. It also includes a preparation of adequate communication program, which would regularly and truthfully inform the public about the aims, activities and results of the organization, raising funds and creating space for meeting the aims of the organization, selection and training of volunteers and, last but not least, building a positive image (Andjarwati et al., 2019). Marketing and ability to persuade people in the non-profit sector are essential, as direct payment for services and the profit motive are replaced by a responsibility to customers or groups that provide grants (Zajkowski et al., 2019).

The importance of introducing marketing into non-profit activities arises from the need to manage limited funds efficiently while providing quality service, which customers find useful and search for it. The mission of marketing in non-profit organizations is to ensure constant contact with users of products or services of the organization, evaluate and satisfy their needs, and implement an adequate program of communication with the public (Moravcikova et al., 2017). Marketing mix of non-profit organizations also includes 4P – place, price, product and promotion. The optimal marketing mix of 4P in generally enables the company to achieve its goals. Individual elements should not be used in isolation. An integrated approach is preferred. The goal of effective marketing strategy is to combine the tools of marketing mix to meet customer needs (Križanová et al., 2013). The offer of a non-profit organization may be tangible products or intangible products i.e. services. In most non-profit organizations, providing of services is the core of product portfolio, while tangible products serve as a support tool. When compiling the spectrum of services, it is necessary to take into account their specific features – intangibility, perishability, inseparability and variability. In addition to a wide range of services, the product is also the ideas that the organization seeks to address a social problem. In this case, it is an exchange of human values whose presentation and acceptance is intended to help eliminate or minimize the negative in the society in order to promote justice, humanity and higher quality of life. (Foret, 2006) The need for marketing in the non-profit sector stems from the importance of the quality of services and how the services meet the needs of their users. High quality services are seen as useful and worthy of regular funding. The lack of quality in the case of non-profit organizations is not offset by low or zero price (Mazanec et al., 2017). Non-profit organizations provide most of services free of charge or for low prices, even though the services of these organizations are associated with the need to incur the costs of providing them. The price of a product or service is not set to cover the total costs; as otherwise, the target market would not be able to accept the price determined in such a way. (Drucker, 1994). Based on T. T. Nagl, pricing the product must be done very prudently - the price should be considered not in terms of costs but in terms of marketing. It is important to understand how the customers make own decision and which factors take into account (Gajanová et al., 2019). The place characterizes the way the product or service get to customers. In the case of non-profit organizations, these are mostly services that are associated with a person that provides them. In general, five types of places can be defined: provider's facility, user's settlement, user's workplace, terrain, or unrelated to the place. Non-profit organizations use direct or one-step distribution, given the intangible nature of services (Valaskova et al., 2018). The communication mix of a non-profit organization is primarily a relationship. In its essence, communication is receipting and transmission of notifications between two or more entities. The basic criteria of communication are effectivity and reliability (Klieštiková et al., 2017). Marketing communication (promotion) is a system of communication methods and means by which the purchasing behaviour of customers may be influenced in order to realize goods or services on the market (Stefanikova et al., 2015). Communicating in marketing means, on the one hand, informing customers about products and services, familiarizing them with the characteristics and benefits of products and services, highlighting their quality, value, and use and, on the other hand, listening and receiving customer responses and requests and responding to them. The system of marketing communication and strategies usually consist of advertising, sales promotion, public relation and personal selling.

3. TOOLS OF MARKETING MIX AND MARKETING STRATEGIES USED BY NON-PROFIT ORGANIZATIONS IN SLOVAKIA

The survey addressed 45 non-profit organizations located in the Žilina Region, of which approx. 35% showed willingness to cooperate. The survey was conducted in July – December 2019. The non-profit organizations were questioned through a questionnaire consisting of 19

questions divided into headings according to the use of tools of marketing mix and trends in marketing strategies. Within the evaluation of the activities of non-profit organizations, the product represents either goods, service or their combination. 13 organizations provide only services, 2 organizations provide both goods and services. It can therefore be stated that non-profit organizations are more focused on providing intangible products. As far as specific areas of activity of non-profit organizations are concerned, the questionnaire included different alternatives to choose from, including the option "other". The findings show that non-profit organizations localized in the Žilina Region are mainly interested in providing education, social services and supporting of children and youth. Only 2 organizations focus on environmental issue and sport. The questionnaire survey shows that non-profit organizations do not have to focus on only one area. On the other hand, we could say that these results are biased, because at least 10 times the sample of respondents would be needed for objective evaluation. As well, customer satisfaction and responses to services and products are important to non-profit organizations. As the questionnaire was designed for non-profit organizations, not for their customers, it is not possible to determine the degree of customer satisfaction of individual organizations. In terms of prices, the survey shows that 8 non-profit organizations provide their services free of charge, 3 organizations provide both kind of services – with and without charging, 2 non-profit organizations provide only fully chargeable services and 2 non-profit organizations did not answer this question. We also examined how non-profit organizations provide the funds needed to finance their activities. They stated that they most often operated with internal sources (chargeable services, membership fees), but their importance is small for the organization. External sources are the most important source of financing. The most beneficial are considered subsidies received from the state, 2% of the income tax of persons (natural or legal) who decided to donate this part of their paid taxes, domestic donations from individuals and companies and foreign donations. According to the questionnaire survey, organizations put the least emphasis on funds from the EU projects and public collections. Regarding the place and distribution of either tangible or intangible products of a non-profit organization, the survey shows that 6 non-profit organization use longer sales channels associated with higher costs, 3 organizations provide services directly to their customers. However, 6 non-profit organization did not provide any answer, which greatly distorts the survey results. It is also possible to summarize that the place and distribution, even though the sample examined represents only nonprofit of the organization from the Žilina region, ranged from specific locations in the Žilina region to international operations. In case of the evaluation of marketing communication, non-profit organizations evaluated individual tools on the predefined scale according to their use in practice. The findings show, that the most important communication tool is a website and social networks. 13 from 15 non-profit organizations evaluated this way of communication by the highest score. Professional conferences, posters and leaflets were rated on average. Advertisements and advertising magazines, billboards and TV and radio advertisements reached the lowest score, which indicates their low use in practice on non-profit organizations. All of questioned non-profit organizations stated that they had own website. The most frequently reported data regarding the content of the website include information about non-profit organizations, their activities and activities under preparation, the possibility of communication with the public and the possibility to contribute financially. However, there is an absence of information and surveys to obtain public and customer opinion on the activities of non-profit organizations. Almost all non-profit organizations currently have their accounts on social networks. It is a popular way of presenting yourself, which is free of charge, little time consuming and it does not require specific professional skills. The most used social network is Facebook and Instagram – 10 of non-profit organizations have the accounts on these social networks. Only half of these interviewed have accounts on other social networks e.g. Twitter or Linkedin.

When asked about marketing strategies and how they were put into practice, more than half of non-profit organizations questioned answer that they prefere mainly inexpensive ways of marketing. They stated mainly guerilla marketing, word-of-mouth marketing, and buzzmarketing. The named approaches have been developed over the last two decades as a complement to marketing for SMEs, which, like non-profit organizations, do not operate with a high budget. The guerrilla marketing is an unusual system of promotions based on time, energy and imagination. Guerrilla marketing campaigns are atypical and unconventional or interactive and the customer is approached in unexpected places. Instead of focusing on attracting new customers, seeking more referrals and more transactions with existing customers is the basic principle of guerrilla marketing. Instead of the competition, it focuses more on cooperation with other companies. Buzz marketing and word-of-mouth marketing are a marketing approach where various communication tools between people are used to promote a product or organization, whether oral, through emails, blogs or through increasingly popular social networks. The human resources of non-profit organizations, as mentioned above, are divided into full-time or part-time employees and volunteers who work without pay. Employees as well as volunteers are two basic components of the staff. The findings from the survey show that 6 non-profit organizations do not employ any full-time employees. On the other hand, 4 organizations employ 16 or more employees. Concerning the part-time employees, 13 non-profit organizations employ the most 3 employees; one organization stated 4 – 6 employees and 1 organization stated 11 employees. Volunteers are used by 2/3 of non-profit organizations; the number of volunteers is visibly varying. Non-profit organizations pay relatively little attention to a customer service. Small representation has all kinds of benefits that non-profit organizations offer their regular customers. The main aim of a customer service is retaining customers to build up a long-term relationship, which is not very useful in the conditions of the Slovak non-profit organizations, because organizations are sufficiently confident about their customers. The survey has found out that non-profit organizations most often use mail and phone calls to inform customers about their activities. As part of the cooperation, 9 non-profit organizations reported on-going cooperation with other non-profit organizations, profitable sector entities or self-government. In particular, this concerned cooperation on joint projects and various events.

4. POSSIBILITY OF USING MARKETING MIX TOOLS AND MARKETING STRATEGIES IN NON-PROFIT ORGANIZATIONS IN CONDITIONS OF THE SLOVAK REPUBLIC – RECOMMENDATIONS

Based on the findings from the survey it is possible to specify suggestions and recommendations of using marketing mix tools and marketing strategies that are applicable and should be useful for non-profit organizations and their defined aims. The first recommendation is to improve of the knowledge on marketing, marketing strategies, and basic marketing mix tools. Although 13 non-profit organizations stated that, their employees had the chance to be in touch with marketing and related issues, however only employees of 2 non-profit organizations actively used marketing tools within the activities of the non-profit organization. Marketing, also in the case of non-profit organizations, is an important tool of meeting their aims. Except that it informs about the situation on the markets, so it gives non-profit organizations the ability to react quickly to a possible reversal and to adapt to it in a short time. The ability of fast adoption on new circumstances gives non-profit organizations greater chance of long-term market retention. For the smooth application of marketing in non-profit organizations, not only basic theoretical knowledge of the given field, but also knowledge of a practical use of marketing is currently needed. The solution may be organized seminars and conferences focused on marketing and on the use of individual elements of marketing instrumentation. These seminars are now also often organized online and for a minimum fee on social networks.

The other serious problem is that employees of non-profit organization are rarely notified with the vision and mission of the non-profit organization. Based on this finding, it is recommended to raise the awareness of employees and the society as well. Information about the vision and mission of non-profit organizations should be publicity promote on the website or through social networks. The third recommendation is to actualize official contacts of non-profit organizations (e.g. mail address, e-mail address, contact persons, phone numbers). The main cause of this problem is the fact that most non-profit organizations in Slovakia are located in rented premises, which is associated with regular moving and subsequent address changes. This complicates the communication and cooperation of the organization with the public. This can be removed very easily – by regular updates of information provided on websites and social networks. Another problem, which also arises from the already mentioned, is the cumbersome communication of non-profit organizations. The simplest solution for both parties i.e. customers of non-profit organizations and for non-profit organizations, is to authorize one of the employees to represent the statutory body when it is absent, unless it is indeed irreplaceable. The selected representative – employee could help, advise and, in some cases, make decisions. An attention can also be focused on the more effective use of social networks as a form of free advertising. We consider choosing the right marketing communication and choosing the right mix for a marketing campaign as the most important measure for non-profit organizations. The importance of individual factors has been addressed by many authors and based on them we have compiled a list of factors that have the greatest impact on a media selection (Binet L. et al., 2017; Nowak et al., 1993; Kanso, 1995):

- Number of people who see your ad/who sees it,
- ability to target / reach specific audiences
- total cost of producing and buying advertising,
- ad impressions,
- ability to activate sales immediately,
- ability to reach the whole market potentially,
- environment in which your ad will appear,
- cost of your ad to thousands of people,
- discounts or other sales promotion related to the advertising rate,
- expertise of media agencies,
- possibility of target group research,
- level of media use by competitors.

The performance of a particular medium and its impact on the success of a marketing campaign can only be determined by comparing the perceived effectiveness of a media type that includes long-term attributes, short-term attributes, and current attributes. There are two different perspectives within the functioning of marketing communication.

Table 1: Theories on marketing strategies

Weak theories on marketing strategy	Strong theories on marketing strategy
Brand building	Activate sales
Long-term orientation	Short-term orientation
Emotion	Rationality
Intervention	Targeting
Memorability	Stringency
Mental availability	Physical availability
Severance	Distinguishability (from other similar brands)
Ad visibility	Understanding the message
Efficiency	Cost - effectiveness

Source: own resource

32 Slovak marketers from the largest companies in Slovakia took part in a survey of media perception of their importance in 2019. 100 companies were contacted and sent an online questionnaire. The return rate of the questionnaire was 32%. Their task was to evaluate the individual attributes of the media on the Likert scale. They rated 12 attributes that are important to marketing strategies and associated with branding and sales activation, or the current environment from the least important to the most important. The most important attributes of the Slovak marketers were:

- increase the brand´s mental availability,
- maximize campaign reach,
- targeting the right target audience at the right time,
- increase the return on ad spend (ROI).

The relative importance of the most important 4 attributes was subsequently evaluated by the MaxDiff analysis. The MaxDiff analysis is often used in academic mathematical theory with very specific assumptions about how people make decisions. It assumes that respondents evaluate all possible pairs of items in the displayed set and choose a pair that reflects the maximum difference in preference or importance. It can be considered a variation of the paired comparison method. Subsequently, this perception of the importance of the individual attributes by the marketers was compared with reality. We used real secondary data from IPA research. Given the extent of the paper, we want to present only the final findings. Table 2 shows the differences in the perception and reality of perception of media attributes according to their importance to the marketing strategy:

Table 2: Perception vs. the reality of perception of media attributes according to their importance for marketing strategy

Perception of the importance of the medium		The reality of the importance of the medium	
Rank	Medium	Rank	Medium
1.	TV	1.	TV
2.	Online video	2.	Radio
3.	Social networks	3.	Journals
4.	Online display	4.	Out of home
5.	Cinema	5.	Newspaper
6.	Radio	6.	Social networks
7.	Out of home	7.	Online display
8.	Journals	8.	Cinema
9.	Newspaper	9.	Online video
10.	Mails	10.	Mails

Source: own resource

According to the results of our survey, Slovak marketers perceive traditional media channels as less effective, while new digital channels are perceived as more effective. It can also be seen in Table 2 that, unlike secondary real data, television, direct mail and cinema were evaluated correctly by Slovak marketers, it is clear that digital media is largely overestimated compared to more traditional media. Cinema, as one of the non-traditional media, is rated correctly in securing most of the observed attributes, but in the overall rating in terms of its use in developing marketing strategies, it is overstated, especially because of its ability to increase brand mental availability and maximize advertising reach. According to the Slovak marketers, the second most valuable medium is online video. However, the reality is different, and according to a 20-year IPA survey, it ranks ninth.

Online video has become the most overvalued medium. The reason is that the Slovak marketers perceive online video to be effective in increasing the brand's s mental availability as well as triggering a positive emotional response and maximizing campaign availability, ROI, and is even considered effective because of low cost. The Slovak marketers also consider social networks to be very important as they had the expectation that they would rapidly increase the brand's mental availability and build customer relationships. We believe that even this survey conducted among the Slovak marketers can ultimately benefit non-profit organizations. Nowadays, it is not enough to know and use the tools of the marketing mix, or to follow the "news" in marketing strategies, but it is also necessary to think about the media in which we conduct our marketing activities.

5. CONCLUSION

In conclusion, we would like to emphasize the fact that non-profit organizations are one of the important players in territorial self-government and the functioning of the state. They are irreplaceable entities in creating a functioning civil society. In this paper, we wanted to point out the importance of using marketing mix tools by non-profit organizations and their marketing activities, which they realize in practice. It should not be forgotten that marketing is an essential part of the success of not only businesses in the profitable sector but also for all other organizations. It seeks to gain knowledge of what people want, need and then adjust all the activities of a non-profit organization so that the products or services offered to their end consumers in an interesting way, at the desired location, at the appropriate time and at affordable prices. Only a well-chosen marketing strategy and well-chosen media of marketing communication can affect the functioning of the non-profit sector, both in the long and short term. We would like to point out that the paper presents results and recommendations based on surveys carried out during 2019. However, as the current situation affected by the corona virus, which we suppose is the beginning of the new crisis, we will not be able to estimate the completely non-profit sector. The impact on marketing and marketing activities will only show time, but we still want to emphasize that the use of marketing tools, the right marketing strategy and the right choice of communication media will be of great importance for the right direction of the non-profit sector.

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THE CONCEPT OF OPERATING LEASE IN TERMS OF THE NATIONAL LEGISLATION AND THE IFRS 16 WITH SELECTED IMPACTS ON ECONOMY OF A COMPANY

Katarina Kramarova
University of Zilina in Zilina,
Faculty of Operation and Economics of Transport and Communications,
Department of Economics, Univerzitna 8215/1, 010 26 Zilina, Slovakia
katarina.kramarova@fpedas.uniza.sk

ABSTRACT

The decisive source of financing business needs (operating or investment nature) should be clearly internal capital, in a narrow sense after-tax net income and depreciation. The practical use of these sources is disputable in the conditions of Slovakia. Their capital strength a matter of fact is given by the financial-economic position of the company and the economic function of depreciation, which, given the relatively long depreciation period of the assets and the non-valorisation of their value, does not constitute a sufficient possibility of their simply restoring. Companies are forced to raise additional capital from external sources, while bank loans and lease financing are most common forms. In the Slovak practice, two basic forms of lease transactions are operated – financial lease and operating lease. The article deals with the analysis of financial reporting of lease transactions, namely operating lease, from the perspective of the national (Slovak) legislation and from the perspective of the international accounting and reporting standards (IFRS 16). The author assumes that existing accounting standards (national or international) are designed in such a way that the financial statemnts provide all its users (stakeholders) with factual and relevant business information necessary for their decisions. The aim of the paper is therefore to identify and compare objective disparities in the standards, which cause different perceptions of the economic function of the operating lease, de facto also reporting with an impact on the resulting financial and economic position of the involved parties – a lessor and a lessee. While the Slovak standards take into account the fact that the owner of an asset in the case of the operating lease remains unchanged after the expiration of the lease (off-balance-sheet-financing), the IFRS 16 due the preference of objectivize the right-of-use the asset, allows a lessor to capitalize the leased asset, despite this fact. The manner, in which the transaction is reported also has an impact on the quality of the different levels of reported earnings.

Keywords: *IFRS 16, Lease liability, Operating lease, Right-of-use asset*

1. INTRODUCTION

A lease allows a company to use long-term assets necessary to carry on business without having to purchase them, i.e. without the financial capital needed immediately. In some cases, it is not only sufficient but also more advantageous to use long-term assets rather than to own them. Compared with other forms of financing, leasing has the advantage of eliminating a red tape required for the granting of credits and the financial guarantees only with the asset that is the subject of the lease. (Simon, 2010) It can be stated that in the business practice all round the world, a lease is a preferred form to solve requirements on non-current tangible assets (Scholleova, 2009; Sadaf et. al., 2019). The modern history of lease operations started in the 40s of the last century in the USA, subsequently in Great Britain, while the earliest lease accounting occurred in 1949. (Taylor, 2011) In the 60s of the same century, leasing expanded to other countries of Europe (mainly in the West Europe) and to Japan. Gradually, it has become not only a way of acquiring necessary long-term assets for the business sector, but also for citizens.

The driving force of a modern lease in today's concept has become the legal conditions for this type of industry, especially tax-stimulating laws. (Carter et al., 1996) Currently, the leasing sector plays a very important role in developing of the financial market and in providing finance to business sector. (Shkolnyk et al., 2019; Ludbrook et al., 2019) Leasing companies as intermediaries between the surplus sector and the demand side in the financial market have a dual role, as on one side, they complement the banking sector with their product and service portfolios, and on the other side, they compete with the banking sector, forcing it to be more efficient and responsive to the needs of customers. (Rahman et al., 2018; Kristofik et al., 2019) As far as Slovakia (a part of former Czechoslovakia) is concerned, the first lease transactions were concluded in the 1970s as exclusively foreign contracts and to a very limited extent. An important role in the conclusion of lease contracts, based on the nature of the then economy, played the planned foreign exchange management, which allowed the release of foreign exchange funds. (Fekete, 2001) The current face of the Slovak leasing market, however, has started to form up since the early 90s of the last century, i.e. by the transition from a centrally planned economy to a market one. The current services of leasing companies are constantly being modified and adapted to the needs of a business sector. In 2018, the amount of non-current assets financed through leasing reached € 4.5 billion in Slovakia. (ALS, 2019)

2. METHODOLOGY

As regards the accounting aspects of lease transactions, they are governed by national legislations and international standards, while the international standards are binding on precisely specified business entities. Depending on the individual countries and their approach to harmonizing national and international accounting and reporting standards, there may be relevant disproportions in the accounting and the reporting lease transactions from the perspective of accounting entities in accordance with the national legislation and those entities subject to the international standards. In connection with this fact, the paper analyses and compares the currently valid Slovak accounting legislation (generally called as Slovak accounting standards, SAS) regulating the field of operating lease with the international standards, namely with the currently valid standard "IFRS 16 – Leases". In order to maintain comparative assumptions, it is assumed that the business entities (a lessor, a lessee) record economic transactions in the system of double-entry bookkeeping and that the existing standards are designed in such a way that the financial statements provide all its users (stakeholders) with factual and relevant financial information necessary for their further decisions. The main aim of the comparative analysis is to identify objective disproportions between the compared standards, which cause different perceptions of the economic function of operating lease and identify their potentially different impacts on the economy of a lessor and a lessee. Especially, the individual levels of profit (different profit measures) are analysed, since they are seen as the basic indicators of economic success of any company (Bartosova – Kral, 2016; Kovacova et al., 2019; Bin et al., 2019; Kumaraswamy, 2019). In addition, it is taken into account the fact that the entities implementing the IAS/IFRS, shall determine their income tax liability under the Slovak tax regulation (Act No. 595/2003 Coll. on Income Tax Act as later amended; hereinafter "ITA"). I.e. in calculating the tax liability, if the entity is required to account under the IAS/IFRS, the profit/loss must be corrected for the effect resulting from the disproportions of accounting of economic operations under the international and the national standards. The amount of the tax liability (income tax – current) reported in the financial statements in accordance with the SAS is being transferred unchanged to the statements under the IAS/IFRS.

3. RESULTS

3.1. Legal concept of lease contracts in conditions of Slovakia

Lease operations are subject to accounting and financial reporting by both a lessee and a lessor. Their basis is the existence of a contractual relationship. In the case of Slovakia, lease agreements have the character of a so-called innominate agreement. The general legal framework of lease operations and lease relationships are govern by the Act No. 513/1991 Coll. on Commercial Code as later amended (hereinafter "Commercial Code") and the Act No. 40/1964 Coll. on Civil Code as later amended (hereinafter "Civil Code"). The agreements concluded for the purpose of financial lease, according to the section 489 – 496 of the Commercial Code, can be considered as a combination of a lease and a contract for the purchase of a leased asset. They are concluded for a definite period, which usually represents a minimum of 60% of the depreciation period of a leased asset, so that the lease expenses can be considered as tax deductible expenses within the meaning of the ITA. The lease agreement is concluded for a definite period without the possibility to terminate the contract from a lessee's side (the assignment of the lease is legally possible). In the case of operating lease, the Civil Code shall regulate relations between the contracting parties only in respect of leasing of transport means (Sections 630 – 637 of the Commercial Code). If other assets are the subject of the lease, the contracting parties proceed according to the provisions of the Civil Code. Unlike the financial lease, termination of the agreement is possible for a lessee and a lessor under pre-agreed conditions.

3.2. Lease in terms of national accounting treatment (SAS)

Lease operations are subject to accounting and financial reporting by both a lessee and a lessor. The contractual relationship of the parties, the economic substance of the lease and the basic accounting policy imply that the general accounting framework for the lease transactions is characterized by the recording of revenue transactions by a lessor and cost transactions by a lessee. In the case of Slovakia, the legislative framework for the accounting and the reporting lease operations (i.e. SAS) is determined by the national legislation – the Act No. 431/2002 Coll. on Accounting as later amended (hereinafter "Accounting Act"), and measures and guidelines of the Ministry of Finance of the Slovak Republic, including measures in the form of a binding chart of accounts and accounting policies for different types of accounting entities. (Bartosova – Paliderova, 2018) However, it is important to note that all companies defined in the Section 17 a) of the Accounting Act shall account and record economic operations in accordance with the IAS/IFRS that refers to all type of lease operations. From the point of view of financial management of a company, the financial lease as well as the operating lease represent a way of acquiring the assets needed for the operation of the business without the need of immediately available cash for their purchase. However, the difference between them results from the applicable SAS. While in the case of operating lease the criterion of legal ownership from a lessee's point of view is applied, in the case of financial lease the criterion of economic ownership is enforced. At the same time, the distribution of the risks arising from the ownership of the leased asset corresponds to this – in the case of economic ownership, the risks are shifted to a lessee. From the analysis of the basic legal framework, only an exhaustive definition of the financial lease follows. The principle of that definition is also applied in the ITA. Based on the above, the financial lease is:

- the method of acquiring tangible long-term assets on the basis of a lease agreement with the agreed right to purchase the leased asset for the agreed payments during the agreed lease term,
- the price at which the ownership of the leased asset passes from a lessor to a lessee, who procures the asset in the form of a financial lease, is a part of the total amount of the agreed payments, subject to the following conditions: the ownership right should be transferred to

a lessee without undue delay after the lease expires; the lease term is at least 60% of the depreciation period of the leased asset under the Section 26 par. 1 of the ITA, i.e. the lease term is taken into account in the context of the legal depreciation period of the asset.

If the above definition is not met, in terms of business practice, SAS and tax legislation, it is an operating lease.

3.2.1. Operating lease in terms of national accounting treatment

Operating lease is a lease agreement between a lessor and a lessee, which gives a lessee the undisturbed right to use a leased asset. An essential feature of the agreement is that it does not include a pre-agreed purchase of the asset after the contract has been terminated, i.e. a lessee shall return the leased asset upon termination of the lease to a lessor. The accounting for operating lease in case of entrepreneurs accounting in accordance with the national standards on the side of a lessor or on the side of a lessee is not regulated in any particular way. The SAS are based on the legal ownership of the leased asset in recording the operating lease, i.e. the lease asset remains in the property of a lessor, who also depreciates it in accordance with the ITA. I. e. a lessor transfers the extent of the asset's wear and tear in accordance with the law transfers into own business performance. At the same time, a lessor bears the primary risks related to the leased asset. These facts arise from the contractual nature of the operating lease. For accounting purposes, therefore, the operating lease clearly is seen as providing a service in terms of a lessor and receiving service in terms of a lessee. I.e. although the leased asset is the source of a lessee's future economic benefits, it is not capitalized on the asset side, the liability from the use of the asset ditto (off-balance recording). The general nature of the impact of a lease transaction on its participants in the case of the operating lease in accordance with the SAS in force is shown in the following picture.

Figure 1: Impact of operating lease on a lessee and a lessor and their accounting (reporting) duties in accordance with the SAS in force

Contracting parties	Statement of financial positon (balance sheet)	Statement of profit or loss and other comprehensive income (income statement)
Lessor	asset and accumulated depreciation is reported	depreciation costs and lease income is reported
Lessee	asset and lease liabilities are not reported	straight-line operating lease expense is reported

Source: own collaboration

In particular, it is clear from the SAS in force that, in the case of a lessor who is in the position of a supplier, a lease rent – an income from the lease transaction, if a lessor's typical economic activity is involved, is a part of revenues from the sale of own services. Otherwise, a lease rent, if still is associated with the operating activity of a lessor, is a part of other operating incomes. If it results from the conditions of the lease agreement, a lessor is obliged to account the lease rent as a deferred income, if a lessee pays the lease rent in advance or as an accrued income, if a lessee pays the lease rent in arrears. Taking into account the nature of the lease operation in terms of the impact on a lessor's economy, lease incomes are reported as a part of the operating income; the depreciation of the leased asset is a part of operating costs and increases the value of EBITDA. The lease income and the depreciation of the leased asset are both reported in the statement of the profit and loss. Marginally, the tax aspect of the operating lease can also be mentioned. From a tax point of view, i.e. when determining the tax liability, a lessor is limited by the maximum amount of depreciation that is recognized as a tax expense according to the Section 19, par. 3a) of the ITA.

The maximum amount is determined by the amount of accrued lease income for the relevant taxation period (irrespective of the payment of rents in that taxation period). I.e. if the amount of depreciation is potentially higher than the rent income pertaining to that reporting period, the difference will be an added item, which increases the tax base of a lessor. The unapplied part of the annual depreciation a lessor shall apply in the year following the termination of the depreciation period in the amount of the annual depreciation or depreciation up to the amount of the rent income if the asset is still leased. It is therefore clear from the above that the difference between the lease income, which is related to the reporting period and the limitation of the maximal amount of tax depreciation, the time value of tax deductible expenses is affected, de facto the time value of tax liability resulting from that economic transaction. The nature of operating lease and the SAS indicate that a lessee is in the position of a customer and shall record the received service as an expense related to a lessee's operating performance. According to accrual basis of accounting, a lessee is obliged to report about deferred expenses, if a lease pays rent in advance or about accrued expenses, if a lease pays rent in arrears. If we evaluate the economic nature of the operating lease from a lessee's point of view, the lease rent is a part of operating costs and any income from the use of the asset in a lessee's activities is included in the operating income. The leased asset cannot be part of a lessee's assets (it does not increase the value of the assets); de facto a lessee has no right to depreciate it. Similarly, there is no capitalization of the lease liability; de facto, the operating lease does not affect the existing leverage of a lessee. Information about the existence of a liability is only a part of the financial statements disclosures. The lease transaction only affects EBT/EAT (depending on the breakdown of individual earning levels in Slovakia). From the tax point of view, the rent expense shall be a part of the deductible expenses only after a payment, which refers to the given taxation period. As regards, for example, leasing of passenger motor vehicles in the form of operating lease, the rent expenses are restricted by an entry vehicle's price of € 48,000 and more in tax-deductible expenses.

3.3. Lease in terms of international accounting treatment – IAS/IFRS

The IAS/IFRS constitute a standardised way of describing a company's financial performance so that company financial statements are understandable and comparable across international boundaries. (IFRS Foundation, 2020) In terms of the IAS/IFRS and Commission Regulation (EU) 2017/1986 of 31 October 2017 amending Regulation (EC) No 1126/2008 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council as regards the IFRS 16 (hereinafter Commission Regulation), which are also binding on the selected companies in Slovakia, a lease transaction is a type of a contract (i.e., an agreement between two or more parties that creates enforceable rights and obligations), or part of a contract, that conveys the right to control the use of an identified asset (i.e. leased or underlying asset) for a period of time in exchange for consideration. (Commission Regulation, Section 9). Historically, this is a relatively new approach to the definition of a lease operation (effective from 1 January 2019). It guarantees a uniform procedure for reporting lease and other contracts, which do not have a legal form of a lease contract but they involve the use of a specific asset and therefore might contain a lease, e.g. contract manufacturing, transportation and power supply agreements, outsourcing etc. It is therefore clear that in determining the lease, the substance of the transaction is given priority over the legal form of the contract (substance over form). In accordance with the Commission Regulation (Section 9 – 31), any contract can be or involve a lease transaction if the underlying asset is identified and a customer (lessee) based on the contract conditions is authorized to control the use of the asset i.e. having the right to direct and obtain all economic benefits from operating of the leased asset for a period of time. From a lessee's point of view, the IFRS 16 requires to apply a single lessee accounting model.

Based on the model, a lessee shall recognise assets and liabilities for all leases and other contracts, which include lease with a term of more than 12 months, with the exception of the underlying assets of low value in own balance sheet. Obviously, in practice the IFRS 16 applies the principle of economic ownership, i.e. ownership of future benefits that are achieved through the leased asset also in the case of operating lease. Based on that, a lessee shall capitalise the lease liability, which is recognised as financial liability (represents a lessee's obligation to pay the liability in the future) and capitalise the leased asset as the right-of-use asset within the other assets in the balance sheet. The right-of-use asset is capitalized in the value derived from the present value of the lease rent payments of the lease liability that are not paid at the commencement date plus other initial direct costs. The present value is quantified by the use of a discount rate that in accordance with the IFRS 16 is derived from the lease payments, the unguaranteed residual value, the fair value of the lease asset, and from the initial direct costs of a lessor (i.e. interest rate implicit in the lease). In case, that the rate cannot be readily determined, a lessee shall use a lessee´s incremental borrowing rate. (Commission Regulation, Section 26). The lessee's incremental borrowing rate is the rate that a lessee would pay for a similar lease or, if it is not possible to estimate it, the rate that would be required if a lessee borrowed the funds needed to purchase the asset for the same period and with a similar guarantee. A lease expense is split between (recognize and record separately) a depreciation charge of the leased asset (a part of operating costs) and an interest expense on the lease liability (a part of financial costs). The depreciation charge is typically even, the interest expanse decreases over time as the lease liability reduces. It is obvious that the IFRS 16 directs a lessee to record the leased asset and, similarly, the lease liability within the balance sheet and not off-balance and the lease expense principally to divide and record in the same way as for a finance lease. At the same time, these are fundamental differences from the SAS. De facto, in the case of operating lease and its accounting under the IFRS 16, the underlying asset in question is a part of the assets of both parties to the lease transaction. On the other hand, the underlying premise remains – the operating lease does not transfer ownership of the leased asset, and payments are made for the use of the asset. As regards the differentiation between the operating and financial lease itself, the IFRS 16 requires a lessor to distinguish leasing operations only (in this respect, the approach adopted under IAS 17 is kept). (Regulation, Section 61) A lessor in operating lease records the leased asset on its own balance sheet according to the nature of the asset. A lessor also depreciates the asset in accordance with IAS 16 and IAS 38 and informs about the amount of the accumulated depreciation within own financial statements. The depreciation policy, which a lessor applies in respect of the leased asset, must be consistent with the depreciation policy for similar assets that a lessor has in its assets (whether or not they are leased). A lessor uses IAS 36 – Impairment of assets, to determine whether a leased asset has been impaired. Lease incomes are recognized as an income on a straight-line basis over the term of the lease contract. A lessor may also recognize operating rent income on another, non-linear rational basis, in particular when the lease contract is dependent on the use of the leased asset or on the volume of services provided through that asset. If the lease payments are unevenly distributed in the repayment schedule, rent incomes should be accrued. (Regulation, Section 81). Regarding a lessor disclosure requirements a lessor is required to disclose components of the lease income recognised in the reporting period, to disclose information about managing risks associated with any rights that are retained in the leased assets, and to provide the disclosures required by IAS 16 separately for assets subject to operating leases (further distinguished by significant classes of the underlying assets from the owned assets that are held and used by a lessor for other purposes). (IFRS, 2016) The general nature of the impact of a lease transaction on its participants in the case of the operating lease in accordance with the IFRS 16 is shown in the following figure.

Figure 2: Impact of operating lease on a lessee and a lessor and their accounting (reporting) duties in accordance with the IFRS 16

Contracting parties	Balance sheet	Income statement (Loss and profit account)
Lessor	asset and accumulated depreciation is reported	depreciation costs and lease income is reported
Lessee	asset, accumulated depreciation and lease liabilities are reported	depreciation costs and interest are reported

Source: own collaboration

Taking into account the very nature of the operating lease in terms of the impact on a lessor's economy, a lease income is a part of operating incomes; the depreciation of the leased asset is included in operating costs and increases the EBITDA value. Both facts are reported in the income statement. Because of depreciation, the value of the leased asset is reduced on a year-on-year basis, and hence, under the ceteris paribus condition, a lessor's overall profitability increases. Repaid lease payments reduce a lessor's existing receivables and increases a lessor's CF position. From a lessee's point of view, a lease expense is reported separately as a depreciation and an interest. The depreciation of the leased asset is a part of operating costs; the interests will be reported as a part of financial costs. Any income from the use of the leased asset in a lessee's activities is included in the operating income. The method of reporting the operating lease therefore has an impact on the value of EBIT (due to separate reporting of interest) and EBITDA (due to separate reporting of depreciation). Under the condition of ceteris paribus, EBIT will decline year-on-year due to falling interests (due to the gradual repayment of the lease liability), while EBITDA will be the same (depreciation is generally the same). A lease rent after payment, decreases the value of the lease liability and at the same time a lessee's CF position. The leased asset is a part of the other assets (a part of non-current non-financial assets) and increases the total value of a lessee's assets reported in the balance sheet. It means, under the condition of ceteris paribus, decreasing of ROA ratio. Likewise, a lease liability increases the value of corporate capital (liabilities and own equity; a part of current or non-current financial liabilities, depending on the timing of lease payments) and under the condition of ceteris paribus increases the total leverage of a lessee. Increasing the leverage "pushes" the growth of the D/E ratio, on the other hand, the decline of the E/A ratio.

3.4. Comparison of SAS and IFRS 16

The analysis of the SAS and the IFRS 16 shows that in terms of impact on the economy of a company, assuming the equal depreciation (depreciation policy in accordance with the SAS differs from the IAS/IFRS) and the approach to determining the value of the leased asset, accounting the operating lease is principally the same for a lessor and significantly different for a lessee. The disproportions are also captured in the following simple comparison assuming that a lessee has identified the lease agreement as a contract that includes the lease and has been informed by a lessor about all relevant facts that affect the accounting process of the relevant economic operation. The ceteris paribus assumption is applied when quantifying the subsequent effects of operating lease on basic financial indicators, i.e. the potential impact of other economic operations on a lessee's economy is ruled out. The subject of the lease is a set of 3 forklifts with the purchase price of € 36,000 for a period of 5 years starting in January 2020. The annual lease rent is € 6,000. The lease agreement does not contain a clause on the transfer of the leased asset to a lessee after the lease contract expires at a specified price or an option to purchase the asset. For the needs of the recording that lease operation in accordance with the SAS, the contract was clearly identified as the operating lease. Furthermore, the contract implies that the subject matter of the lease is precisely identified, a lessee is entitled to all benefits that

the asset acquires and controls the use of the subject matter of the lease according to its own business needs. The lease term is longer than 1 year and is not a low value asset. A lessee under IAS 16 depreciates the leased asset (right-of-use asset) over the term of the lease agreement. In the case of SAS, the depreciation of the asset acquired under the operating lease, is irrelevant to a lessee. The discount rate used for the capitalization of the right-of-use asset and the lease liability is 4.55% p. a. (identified as a lessee's incremental borrowing rate of interest). The calculations and the impact analysis is presented in the following table.

Table 1: Operating lease – the impact on the economy of a lessee

Operating lease - lessee; values in €	2019	2020	2021	2022	2023	Total
Lease payments based on lease agreement (in nominal value) - IFRS	6 000	6 000	6 000	6 000	6 000	30 000
Lease payments (in present value) - IFRS	5 739	5 489	5 250	5 022	4 803	26 303
Depreciation of right-of-use asset (underlaying asset) - IFRS	5 261	5 261	5 261	5 261	5 261	26 303
Residual value of right-of-use asset (end of accounting period) - IFRS	21 043	15 782	10 521	5 261	0	xxx
Lease liability (at the beginning of accounting period) - IFRS	26 303	21 500	16 478	11 228	5 739	xxx
Interest - IFRS	1 197	978	750	511	261	3 697
Lease expence (depreciation + interest) -IFRS	6 457	6 239	6 010	5 772	5 522	30 000
Decrease in lease liability in given year - IFRS	4 803	5 022	5 250	5 489	5 739	26 303
Paid lease expence in given year - IFRS	6 000	6 000	6 000	6 000	6 000	30 000
Lease expence - SAS	6 000	6 000	6 000	6 000	6 000	30 000
Paid lease expence in given year - SAS	6 000	6 000	6 000	6 000	6 000	30 000
Value of assets (begining of accounting period) -IFRS	26 303	21 043	15 782	10 521	5 261	xxx
Value of assets (begining of accounting period) - SAS	0	0	0	0	0	xxx
Liabilities (beginning of accounting period) - IFRS	26 303	21 500	16 478	11 228	5 739	xxx
Liabilities (beginning of accounting period) - SAS	0	0	0	0	0	xxx
EBT - IFRS	-6 457	-6 239	-6 010	-5 772	-5 522	-30 000
EBT - SAS	-6 000	-6 000	-6 000	-6 000	-6 000	-30 000
EBIT - IFRS	-5 261	-5 261	-5 261	-5 261	-5 261	-26 303
EBIT - SAS	-6 000	-6 000	-6 000	-6 000	-6 000	-30 000
EBITDA - IFRS	0	0	0	0	0	0
EBITDA - SAS	-6 000	-6 000	-6 000	-6 000	-6 000	-30 000
CF position - IFRS	-6 000	-6 000	-6 000	-6 000	-6 000	-30 000
CF position - SAS	-6 000	-6 000	-6 000	-6 000	-6 000	-30 000

Source: own collaboration

The findings show that the impact of the operating lease does not differ in the case of impact on a lessee's CF. In aggregate, the impact is also the same when the expenses of the lease operation are recognized (lease rent). However, in terms of their distribution over time, the costs vary (de facto, their time value is different too). This fact also determines the differences in the values of EBT during the term of the lease contract. With respect to the recording of a lease rent in the income statement, the lease expense according to the IFRS 16 is structured as the interest, which increases the value of EBIT, and the depreciation, which increases the value of EBITDA. The SAS include the entire expense related to off balance and the expense is not structured. Thereby, the lease transaction has no impact on EBIT and EBITDA. Since the leased asset is part of a lessee's assets under the IFRS 16, the impact on the total asset turnover ratio is negative as well as on a lessee's solvency ratio (i.e. D/E ratio increases) and the current ratio. Regarding the tax implications, the accounting units shall base on the valid Slovak tax legislation when determining the tax liability regardless of their obligation to account under the IFRS. It must be true that the costs from the tax point of view are only the lease rent paid, which is accrued to the given reporting period. It is therefore clear that the tax liability of a lessee who records the operating lease under the SAS and under the IFRS 16 shall not differ.

4. CONCLUSION

The objective of general purpose financial statements is to provide information about the financial position, financial performance, and cash flows of an entity that is useful to a wide range of users in making economic decisions. However, the economic reality may be affected by existing accounting and reporting standards, whether national or international. This was followed by the main objective of the paper - to identify and compare objective disparities in the SAS and the IFRS 16, which cause different perceptions of the economic function of the operating lease, de facto also reporting with an impact on the resulting financial and economic position of the involved parties – a lessor and a lessee. The analysis has showed that in terms of impact on the economy of a company, assuming the equal depreciation (depreciation policy in accordance with the SAS differs from the IAS/IFRS) and the approach to determining the value of the leased asset, accounting the operating lease is principally the same for a lessor and significantly different for a lessee. While the SAS take into account the fact that the owner of an asset in the case of the operating lease remains unchanged after the expiration of the lease (off-balance-sheet-financing), the IFRS 16 due the preference of objectivize the right to use the asset, require a lessor to capitalize the leased asset as right-of-use asset and the lease liability, despite this fact. The manner, in which the transaction is reported also has an impact on the quality of the different levels of reported earnings.

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PRICING UNDER THE CONDITIONS OF A RETAIL STORE AS A SELLER OF GOODS OR SERVICES TO THE FINAL CONSUMER

Anna Kubjatkova
University of Zilina, Slovakia
anna.kubjatkova@fpedas.uniza.sk

Anna Krizanova
University of Zilina, Slovakia
anna.krizanova@fpedas.uniza.sk

ABSTRACT

In particular, price is the most important instrument of competitiveness for traders around the world, and this is still the case today. On the basis of price, these customers most often decide to buy a particular product from a particular merchant. Especially for retailers, as product intermediaries for end customers, price is crucial for survival and is considered a vital factor, because price is an opportunity for retailers to win the competition. Proper pricing in retail is more than primary in view of the importance of the marketing strategy and price itself. The main aim of this work is a general analysis of pricing in trading companies, the basic factors affecting pricing in all business companies and analysis of pricing of products in retail stores. The aim was to calculate the selling price of the introduced product in the retail industry, based on specific assumptions. In this work was used methodology of analysis and research pricing in retail. After the analysis, we determined the factors and indicators needed to calculate the retail price. It was necessary to take into account, in addition to the purchase price, the commercial costs, the profit margin and the discount and the rebate provided to customers. The result of the calculation is not only the specific selling price of the product introduced in retail, but also the actual selling price calculation procedure. In practice, all retail businesses, irrespective of whether they are payers or non-payers of value added tax, are able to use the specific pricing factors and this process in practice.

Keywords: *Price, Pricing, Retail*

1. INTRODUCTION

Most people nowadays have become accustomed to the fact that the things and services they need do not have to be manufactured and procured by themselves, as they once did. Buying goods and services is a daily routine for them, and we often get the necessary things in minutes and know exactly where and from whom to buy them. This habit of getting what we want and when we want it starts for many consumers every morning when we get breakfast. As a customer and end consumer, we buy just in retail, where the exchange itself, called trade. Companies need to monitor the needs and requirements of customers, as otherwise their customers could go to competing companies. Retailers in particular have to follow customer needs, as it is in retail that the individual is the primary entity. Retailers should therefore know the customer's reasons for buying, the private label they prefer, and also the average quantity that this final consumer buys (Valaskova, Kliestikova, Krizanova, 2018). Customer needs and requirements are constantly changing and the retail environment is no exception. Customers are increasingly mindful of the origin of the products, as well as the environmentally friendly production and packaging. For this reason, retailers must pay attention to green marketing, which directly affects the degree of sustainability of its competitive position on the market (Moravcikova, Krizanova, Kliestikova, Rypakova, 2017). Jonek-Kowalska (2019) argues that the current eco-minded customer is interested not only in the origin and packaging of products.

Increasingly, customers focus on the products of companies that use renewable resources to produce their products, thereby reducing emissions and impact on the planet. Therefore, the choice of products for retail is nowadays often subject to EU regulations to meet the needs of customers, which retailers must not ignore in their own interest. Equally crucial for retailers in understanding customer needs is choosing a product range that has value for customers. These are mainly well-known and environmentally minded companies that have made a great deal of effort to build the brand and have sufficient experience in attracting customers. The products of these companies are much more attractive to customers and therefore guarantee loyal customers for retail (Krizanova, Majerova, Kliestik, Majercak, 2013). According to Chetthamrongchai and Saengchai (2019), customer loyalty is truly a primary indicator of retail existence. The perceived quality of service and the pricing policy chosen are one of the most important factors that have the greatest impact on customer loyalty. So retailers must not only choose the right products, they must also choose the right price and set a certain quality of sales to retain customers and win new ones. Therefore, retailers need to have an effective strategic customer analysis to help retailers comprehensively understand customer needs. This analysis will also help to choose the right way to communicate with customers. Retail customers often have different requirements than wholesale customers, and retailers must take this into account when communicating, building a sales portfolio, and pricing individual products (Krylov, 2019). The author Nadanyiova (2013) argues that for the retail market to be successful, it needs not only to meet the demands of regular customers, but also to attract new customers. In particular, they will bring new capital and strengthen the position of retail in the market. Attracting new customers for retail is possible with a large number of tools. Offline customer acquisition tools may not always be effective enough, so retailers also need to focus on online customer acquisition. Author Majerova (2014) claims that the behavior of customers when shopping on the Internet is completely different than when shopping in physical stores, so retail must think of the requirements of all potential customers. Consumers' behavior and attitudes in a technology-based common economy undeniable the incentive for consumers to participate in common consumption. In order to satisfy retail customers, retailers themselves need to be motivated to work with their customers and thus create a pleasant shopping environment for their customers. (Graessley, Horak, Kovacova, Valaskova, Poliak, 2019)

2. TRADE AND PRICING IN TRADE

The term trade is most often understood as a certain space, place, building or room where goods and services are purchased to meet their needs. It can be understood as an exchange of something for something, and this process must not miss two participants. Trade ensures the circulation of goods and services and is therefore an integral part of the economy of the various sectors of each economy in the world. Business can be characterized as a complex process, which consists of several smaller operations and processes that are connected. It is the exchange of goods or capital that are the subject of purchase and sale. By trade we mean the exchange of commodities between individuals or groups of individuals, which takes place by means of exchange in exchange or by means of a monetary medium, that is to say a certain monetary reward. Voluntary trade allows for a division of labor, which ultimately benefits everyone involved. The benefit of trade is the expansion of the range of commodities used for consumption and specialization of production activities (Pearce, 1992). In trade, exchange is key, especially the exchange of goods or services for a particular reward. The nature of exchanged products is therefore very important. The choice of products that would suit customers is based on continuous communication and customer relationships, which is subject to Customer Relationship Management (CRM) (Krizanova, Gajanova, Nadanyiova, 2019). The sustainability of economic growth in trade is a major challenge for individual economies. The constantly growing trend in trading is not in line with the fact that resources are not

inexhaustible. Trade is therefore a complex process in which it is necessary to maintain a balance between the needs of society and the resources available (Popp, Olah, Fekete, Lakner, Mate, 2018). Within the trade we know three basic groups according to the division of labor. This includes wholesale, which includes activities and business activities related to the sale of goods to entities purchasing for resale. It also includes intermediaries who ensure the transfer of the economic right of disposal of goods for certain reward. The third group is retail, which has the task of selling goods to final consumers (Viestova, 2001). Establishing a connection within the trade between the buyer and the seller is essential for the execution of the trade. In the past, this contact has usually been made in person, but nowadays digital contact can also be made by phone or email. Social networks or internet browsers such as Google also play a big role, where buyers enter keywords to find the retailer they need and then contact them. Therefore, in order to maintain trade, all participants must use these communication channels (Durica, Svabova, 2015). Commercial companies, whether retail or wholesale, sell a large number of products of various kinds. The pricing process interconnects the pricing of individual types of products while maintaining the main objective of pricing, which is the profitability of the entire range of products. All trading companies that have entered the sales and purchasing markets should focus on the process of purchasing goods to their sale. In business firms we know several basic factors that influence price formation. Here are:

- business costs,
- cost of goods,
- terms of delivery,
- amount of profit,
- assortment width for supplier selection. (Kufelova, 2017)

In the pricing process, it is particularly important to determine the cost of procurement of goods and the cost of the process. Based on the findings of the cost of the goods themselves and the costs associated with this trade, the selling price of the trading companies can be determined as their sum enriched by gross profit. (Lipianska, Hasprova 2016)

3. RETAIL, FUNCTIONS AND TYPES OF RETAIL

Retail has a great impact on the health of the state's economy and is, from the perspective of the national economy, one of the most important sectors and also among the largest employers. This can be considered as one of the most important elements of the distribution, as it passes through the largest quantity of products from the producer to the final consumer. There are a large number of retail definitions and they all have a common customer as the final consumer buying goods for his personal use. We agree with the claims of Kotler and Keller (2007) that retail is any business that, by virtue of its retail activity, makes up the largest and most significant part of its sales volume. It can be argued that retail trade is the last link in the movement of goods between the circulation of goods and the area of end-use of goods. Therefore, retail has two basic roles - for producers it is the customer and the point of sale of their products, and for the final consumer, the final customer, retail serves as a place and intermediary for the purchase of the final product. Acquiring customers is an essential prerequisite for success in the market. Through appropriate communication with customers and products selected based on customer requirements and needs, retail is able to exist and profit. It is about building strong price and exchange competitiveness over other competitors on the market (Loganatan, Ahmad, Mursitama, Taha, Mardani, Streimikiene, 2019). In addition to suitably selected communication and assortment based on customer requirements, it is essential that retail also care about the quality of the products offered. At the same time, customer loyalty based on all the requirements met could be more than crucial for retail. Indeed, loyal customers provide certainty to the retail trade and often determine whether the retail trade will even exist

(Gajanova, Nadanyiova, Moravcikova, 2019). In order for retailers to communicate with customers and meet their requirements, retailers need to know their preferences based on a survey to be carried out. According to Nadanyiova (2014), retail surveys can monitor customer satisfaction through regular surveys and take appropriate measures if satisfaction begins to decline. Retail fulfills the various functions necessary for its existence, and the business itself creates the added value of a product that satisfies consumers' requirements. Therefore, trade functions constitute a summary of the requirements of trade participants. The use of individual trade functions leads to more economical and beneficial management of retail. The basic business functions are:

- bridging the distinction between the place of production and the place of sale, to secure the goods in the required place
- bridging the gap between the time of production and the time of purchase of goods, while the trade must ensure a certain amount of stock in order to be readily sold,
- transformation of the supply assortment to the consumer assortment, which will meet the requirements of the end consumer,
- ensuring the quality of the assortment to be sold through quality selection of the supplier and setting the quality conditions of their contractual relationship,
- sufficient provision of payment of the purchased goods to the supplier, in the required amount and in the shortest possible time,
- influencing customer demand by positively presenting goods, timely delivery of goods and ensuring the diversity of goods (Cimler et al., 2007)

Retail companies can be distinguished according to whether they are retail stores or retail without retail space. The point is that retail sales can take place at a particular physical location, but this is not the rule. Sales can also be carried out at a distance, with the final consumer to choose between different forms of both these types of retail companies. Based on the knowledge of different authors, retail can be divided from different perspectives:

- by type: store, wholesaler, shopping mall, department store, exhibition hall,
- according to the form of sale: online shop, vending machines, sale by samples, free run, self-service, individual service, combination of several forms,
- by assortment: non-food, food, combined,
- according to the level of specialization of the assortment: narrowly specialized, specialized, associated, wide assortment, full assortment. (Francova, 2009)

4. PRICING IN RETAIL

At present, pricing in retail is less complicated given the level of economic stability. In the past, especially during the financial crisis, price stabilization policy has been a very important area of governmental and non-governmental action not only in developing countries of the world. Today, at the current rate of inflation, the problem of price stabilization in our territory is a thing of the past, and therefore pricing in retail is, as an inevitable process, much more acceptable (Sriyana, 2019). Various factors influence price decisions in retail when determining the cost of their purchase costs. These can be different costs for different suppliers, retail policy, marketing tactics, environmental impact or merchandise properties themselves. Cost factors in retail are advertising, sales promotion, rebates, complaints, delivery of goods, discounts for employees, repair costs, theft, labor costs and more (Rajnak, 2007). Pricing in retail is a complex process where retail companies have to take into account the company's goals such as return on investment and increase sales. Consequently, it is necessary to select the orientation of pricing and to analyze internal factors such as store location, equipment, decoration or image. It is also necessary to assess cost factors such as material, wages, discount or overhead costs, as well as external factors such as the state of the economy, competition or laws in the area.

It is also necessary to consider the factors relating to the goods themselves and, finally, to choose the right pricing method based on previous findings (Lipianska, Hasprova 2016). Pricing in retail has its specifics. Retail is particularly sensitive to comparing not only prices but also competing goods, while retail outlets have targets similar to manufacturing firms in pricing. Pricing results in an optimum price that is affordable to all participants while still producing adequate profits for retail (Janok et al., 2007). Various methods of pricing in retail are known, the author Kufelova (2016) introducing the following general methods:

- price boards,
- psychological discounts,
- rounded prices
- low price level,
- fixing fixed prices,
- prestigious prices,
- setting of variable prices.

The retail price generally consists of the cost of purchasing goods to which a retail surcharge is added. Unlike wholesale, however, the retail surcharge does not include overheads such as rent, energy or wages and the like. The profit margin is the percentage by which the purchase price of the goods increases. We calculate it as:

Profit margin (PM) (%) = $\frac{GP}{PP} * 100$ (1)

GP - gross profit (€),
PP - purchase price (€). (Lipianska, Hasprova, 2016)

The price at which the retailer acquires the goods from the supplier is called the acquisition price and generally consists of the purchase costs of the goods and other acquisition costs related to the acquisition of the specific goods. Of course, at the acquisition price, it is to be expected that the supplier provides the retailer with some discount on the purchase price, usually in the form of a cash deduction or percentage discount on price (Kufelova, 2016). Based on the assertions, we can determine the general acquisition price formula of retail as follows:

Acquisition price (AP) = PP + OAC - CD - PD (2)

PP - purchase price (€).
OAC - other acquisition costs (€),
CD, PD - cash deduction or percentage discount on price provided by seller (supplier) (%).

In retail sales, the selling price of the goods can be determined in a simple way, but we must take into account the cost of the goods, the commercial costs and the profit margin (PM) for retail:

Selling price (SP) = ACG +ABC + PM (3)

ACG - annual cost of goods (€),
ABC - annual business cost (€).

We calculate the business cost rate, expressed as a percentage, as a ratio of the expected annual business costs to the annual cost of goods (Kufelova, 2016).

5. PRACTICAL APPLICATION OF PRICING WHEN SELLING GOODS IN A RETAIL STORE

To determine the price of the goods that retailers sell, it is necessary to know a few of the figures below, where the retailer is not subject to value added tax:

Retail store indicators	Value
Estimated annual business costs (ABC)	42 835 €
Estimated annual cost of goods (ACG)	206 358 €
Estimated gross profit (GP)	48 506 €
Product X purchase price (PP)	0,63 €
Percentage discount on price for customers (PD)	0,9 %
Cash deduction for customers (CD)	5 %

Table 1: Data to calculate the selling price of product X
(Source: processed by the authors)

In order to determine the total cost of product X, it is first necessary to determine the rate of business costs as a proportion of the annual business costs (ABC) and the annual costs of goods (ACG), which is 20.76% after recalculation. We calculate the business costs of product X by multiplying the purchase price (PP) by the calculated rate of business costs, which will result in 0,13 €. The total cost of product X is the sum of the purchase price (PP) and the calculated business costs, ie 0,63 € + 0,13 € = 0,76 €. The total cost of product X is increased by the profit margin (PM), which is calculated on the basis of formula (1) as the gross profit (GP) divided by the sum of the annual business costs (ABC) and the annual costs of goods (ACG). The profit margin (PM) is therefore 19,47% and after multiplying the total cost of product X, we get the net cash sale price of product X 0,91 €. According to the table, the cash deduction for customers (CD) is 5%, of which, when added to the net cash selling price of product X, we get 0,92 € of the gross cash selling price (SP) of product X. Since retail is a non-VAT payer, the final step in calculating the X selling price (SP) is to include a 0,9% discount on price (PD) for retail customers. The resulting selling price (SP) of product X, which the retail listed in its price list will have, is 0,97 €.

6. CONCLUSION

Retail as an intermediary to the final consumer has a specific pricing process and differs from the wholesale process. Pricing in a retail store is a complex process that requires a lot of information. Retail needs to be able to differentiate between the cost of goods and the business costs incurred in trade. Based on them, retailers can determine the selling price of their products using other necessary data. Based on the previous calculations, a general procedure for pricing the introduced product in the retail store can be developed and applied to companies of this type.

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INNOVATION AS A TOOL TO INCREASE COMPETITIVENESS IN THE GLOBAL MARKET: A BIBLIOMETRIC ANALYSIS

Ladislav Vagner
University of Zilina,
Faculty of Operation and Economics of Transport and Communications,
Department of Economics,
Univerzitna 1, 010 26, Zilina, Slovakia
ladislav.vagner@fpedas.uniza.sk

ABSTRACT

This research paper focuses on analysis of keywords related to innovation as a tool which increases competitiveness in the global market and then looks into their evolution and changes in decades from approximately 1988 to the present. This split of decades enables us to follow evolution of connected keywords in time and at the same time to work with the limited number of clusters. We did not find any similar publication while going through the literature concerning the keywords analysis and their development. Hence, this is an original and interesting article that explains the work with keywords of the selected topic. We looked into articles only from the Web of Science database. We studied all articles related to innovation management. Our methodology used analysis to examine individual articles, synthesis to link context, statistical procedures to select keywords using the functions available in Excel program, and VOS viewer to graphically display the results of the analyzed keywords. At the same time, this kind of division has allowed us to monitor changes before and after the global financial crisis. The changes were influenced mostly by global trends and general publication growth in the world. The only term most commonly associated with earnings management in all periods is accruals. By demonstrating the formation of the terms used, we have managed to meet the stated goal. In the future, it would be interesting to follow developments in the coming years of the decade as well as to see a change in the use of innovation management in dependence on global events.

Keywords: *Bibliometric analysis, Innovation, Literature review*

1. INTRODUCTION

Studies show and demonstrate that the most thriving businesses and organizations share the same logic of approaching and understanding today's innovation. Successful and innovations are not based on a random search for solutions but are based on facts, philosophy, economics, and system evolution. Innovations are sometimes understood as a change in the meaning of some technical adjustments. However, we can say what distinguishes regular differences from innovation is that we create innovation for the customer, which will bring him several different values such as simplicity, increased comfort, increased comfort and entertainment, a new image, and a mindset for the environment. Reflections on innovations are addressed in various theories, literature, and many authors. Many definitions describe and characterize innovations. By innovation, we can understand the discovery of a faster, simpler, and more efficient way to improve a product or service that can save costs and increase our competitiveness. It can also characterize the discovery of a brand-new product or service that will help make the business more efficient. Today's scientific research on innovation brings several concepts that consider the whole innovation process or only some parts. Therefore, we give a detailed overview of the most precise definitions and meanings for the idea of innovation concerning different authors' understanding of this issue. Innovation is a concept that contains some fundamental change, which can also be defined as improvement and considers people's activity. In other words, we can say about innovation that this is any novelty on the market or change to something new.

Innovation designates and describes a complex process from the very idea, through its development to its realization and commercialization. The starting point for innovation is a specific idea, a new idea, and a degree of creativity (Weber, 2016). The critical point is that we need to distinguish the concepts of innovation and invention. Innovation and invention are two different things. Innovation relates to the use of a new, better idea, while, on the other hand, the invention deals directly with the creation of ideas or methods themselves (Balog, 2013). This research paper aims to analyze keywords on the topic of innovation as a tool for increasing competitiveness in the global market. Emphasis is placed on developing areas where innovation can be used everywhere and the changes that have taken place over the decades.

2. THEORETICAL BACKGROUND

To provide an overview of keywords, complete of the literature in the Web of Science database needs to be analyzed. Therefore, the following section deals with different perspectives of authors on innovation issues related to competitive advantage. The research paper deals with an analysis of individual articles from authors dealing with innovation as a tool that increases competitiveness on the global market. Innovation is needed in every area of life. Innovative activity is an important source of competitiveness, economic growth, as well as the image of each country (Janoskova & Kral, 2019). Increasing competition in product packaging innovation has also been confirmed by Valaskova et al. (2018) in the article, which analyzes consumers' attitude towards the purchase of private label products, considering their needs and requirements, type of purchased product and reasons for the purchase. Product innovation has been considered one of the main drivers of value creation, the prerequisite for market success, and often for business survival, particularly in high-tech industries (Alani et al. 2019). Each company is built on its employees. Therefore, if a company wants to improve and innovate, employees of the company must improve first. Chlebikova et al. (2015) in their article, Planning of Personal Development and Succession, deal with the topic of improving work performance. The most important thing is that especially leaders of the work teams are innovative. Leadership is a significant factor that affects followers' behaviors and attitude toward the organizational innovation. (Sahban, 2019) Measuring innovation potential in businesses is challenging. Nawrocki (2018), point to the lack of unified methodology for assessing corporate innovativeness and large information diversity in this area. Valaskova et al. (2019) further explored ways to improve the competitiveness of financial decision-making. The novelty of their paper is to extend the application of fuzzy sets in the area of financial decision making. The opposite theme of innovation is addressed by Kovacova et al. (2019) in their article Innovation management of the bankruptcy: Case study of Visegrad group countries. The main theme of the last decade in the field of industrial innovation is Industry 4.0. Industry 4.0 is a way to remain competitive in a challenging environment. Innovation in Industry 4.0 was addressed by Nica et al. 2019 in the article, which investigates resilient cyber-physical systems and big data architectures in Industry 4.0. Innovation is mainly devoted to large corporations with a sufficient financial budget. They are looking for new ways to save costs, come to the market with a new product or how to optimally set up their project portfolio. The issue of project portfolio optimization is an area that is not sufficiently addressed by Slovak authors. That was the main reason why Kral et al. (2019) looked at possible innovations in this area. On the other side, small and medium-sized enterprises are at the forefront of innovation. This is mainly because innovativeness does not affect SMEs performance directly, its significant effects are indirect, through the mediation role of innovation behavior (Domi et al. 2019). According to Romão & Nijkamp (2019), the tourism sector depends on knowledge with a high potential for developing innovative strategies based on practice and location. Their study analyzes whether and how regional innovation systems affect the competitiveness of tourist destinations in Europe.

Impacts of traditional production factors, productivity, specialization, and other variables - concerning the territorial capital of each region - on the performance of regional tourism. They analyzed a total of 237 European regions (NUTS 2) for eight years. Their results point to lower productivity levels in regions where tourism services are more labor-intensive. Competitiveness is a broad term that is applied in many areas, especially in the economy, and according to the Tourism Competitiveness Study, García-Sánchez, & Vázquez-Méndez (2019) has focused on factors that can increase the prosperity of the destination. One of these factors is an innovation because innovation makes businesses in the target countries more mature and efficient and, therefore, more productive. Innovation is not only a boost to competitiveness, but it is also a more relevant concept. (Lyakina et al., 2019) It can itself be a source of prosperity because innovation in all aspects will provide a better quality of life to the destination. Another type of innovation is marketing innovation, where it is first of all necessary to identify customer needs through relationship management and then transform them into marketing innovation. These are two key customer value creation processes and, when combined, can improve the company's competitive position not only in terms of profitability but also by reducing costs and promoting the use of technology (Wiryawan, 2019). Essential elements of the marketing mix that include product, price, place, and promotion are a suitable combination of components through which organizations perform their own marketing goals and achieve a sustainable competitive advantage (Kotler, 2000). Marketing innovation is based on supporting four interrelated tools. They focus on meeting consumers' needs by delivering a sustainable competitive advantage (Ferrell and Hartline, 2011, p. 18-19). Marketing innovation involves the use of brand-new marketing strategies, marketing concepts, or unique marketing methods that have never been used in an organization. Martín-de Castro et al. (2013) assume that the development of successful technological innovations is imperative to create and sustain an organization's competitive advantage. According to Zemplinerova (2010), spending on research, development, and innovation is a defining characteristic for gaining a dominant part of the market. In the survey, Autant-Bernard, Fadairo & Massard (2013) also highlight the importance of the role of regional innovation and demonstrate that the organization must have unique strategies and foster the flow of knowledge from and to the organization, what is also supported by the results of Noruza et al. (2012) and Autant-Bernard (2001). According to a study by Udriyah, Tham & Azam (2019), market orientation and innovation have a partly positive and significant impact on the competitive advantage. Market orientation and innovation contribute to a competitive advantage of 46.3%, while other variables influence the remaining 54.7%. The competitive advantage partly has a positive and significant impact on the company's performance. At the same time, other authors (Weerawardena, et al., 2019) provided a fascinating insight into technical and administrative innovations. The study is based on the assumption that market education drives further learning skills in the company to collectively contribute to innovation and, consequently, to results in the international market. The findings of their study of global US SMEs support this theory. And the ability to learn about the market works in a complex set of relationships with other learning capabilities, which contributes to innovation. Interestingly, compared to technical innovations, administrative innovation contributes significantly to the results of the international market.

2.1. Methodology

The paper related to information needed for analysis, especially articles were dealing with innovation as a tool that increases competitiveness in the global market, which are registered in the Web of Science database. The goal was to monitor the evolution of the keywords. The next step was to designate the changes that have occurred since the decades or after the Great Depression. Thanks to the analytical-synthetic method, individual types of innovations from various authors have been described and characterized in detail.

Other methods were an analysis of the keywords defined in detail. The synthesis method has been used in graphs from which the consequences can be deduced. Except for that fact, it is also possible to see clustered keywords. A comparison method applied to compare keywords and clusters. In the end, a method of composition adopted, where all the findings so far were summarized. Besides, the bibliometric analysis was handled to consistently select and analyze keywords from journals chosen from the renowned Science Web database.

3. RESEARCH

For our research we focused on publications registered in the scientific database Web of Science. We chose the term innovation management as a search argument. The search terms were the whole concept. It was therefore necessary to enter this term in "" ("innovation management"). We searched for articles with the criterion "TOPIC". This means that the search term was searched for in sections title, abstract, and author keywords.

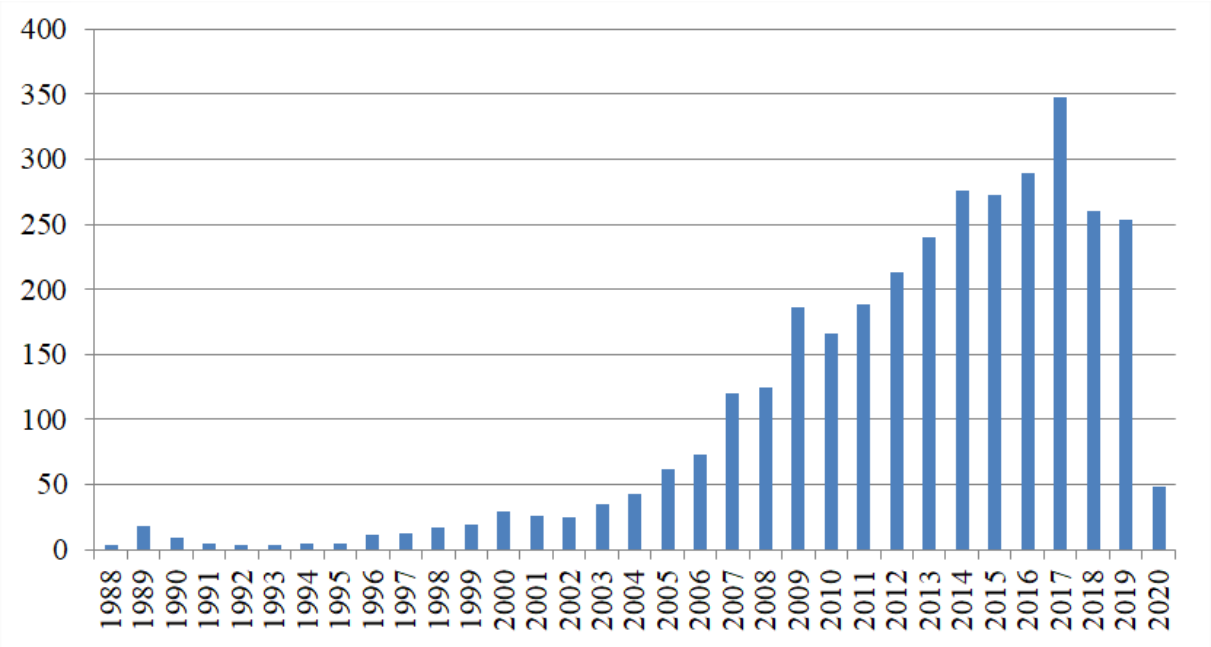

Figure 6: Number of publications about innovation management in WoS in 1988 – 2020 (Source: own research)

Between 1988 and 2020, 3,390 articles matching the criteria were published. In Figure 1 we can see a gradual increase in the publications. It can be seen that the increase is linear. A fundamental change in the number of publications was not seen even after 2008. This is a turning year after the 2008 financial crisis. This just confirms us in saying that innovation is important to businesses and society at any time, not just in times of economic downturn. The increased growth of publications in 2017 may be due to the emerging economic conflict with China. This year, up to 348 publications were devoted to innovation management.

Figure following on the next page

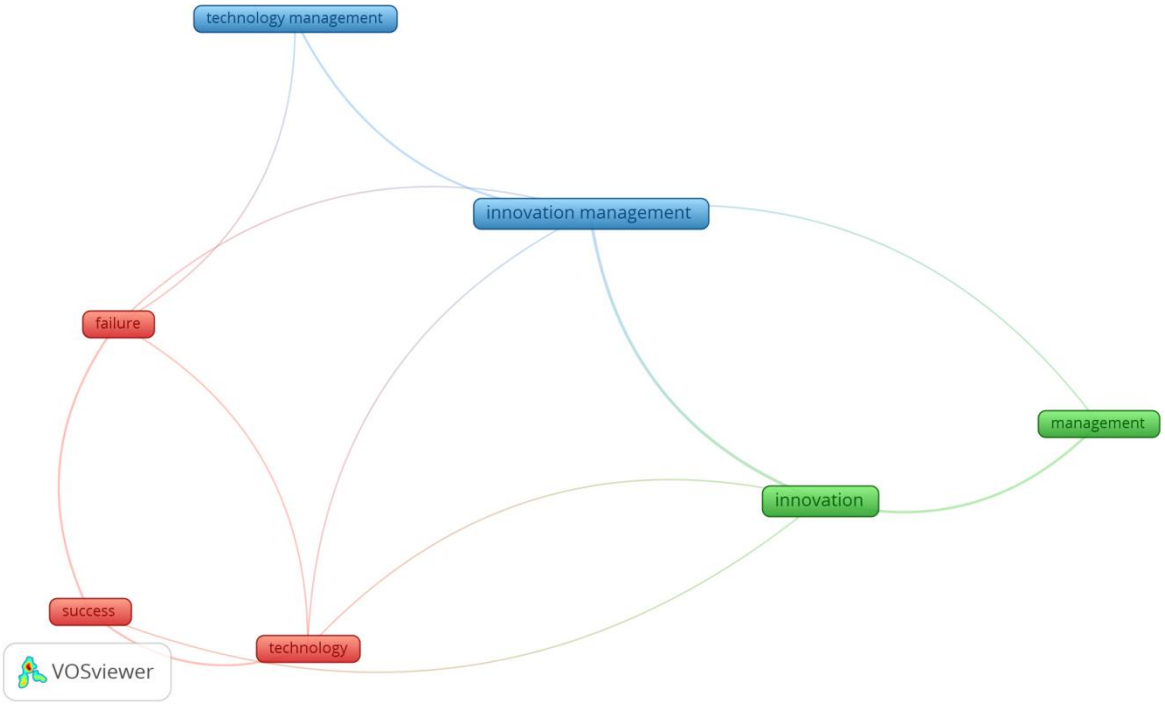

Figure 7: Bibliometric analysis for 1988 - 1997
(Source: own research)

Between 1988 and 1997, 75 articles were published. The largest number of publications in this period was in 1989 and it was 18. To analyze the keywords most frequently found in the publications we used the software VOSviewer. Using this software, we analyzed the keywords for the period 1988-1997 used in the publications on innovation management. Innovation management was most often associated with innovation and technology. The terms that repeatedly appeared in the monitored publications were: technology management, failure, success, technology, innovation and management. Figure 2 shows the existence of 3 clusters. The main cluster is associated with technology management. The second one focused on innovation and management. The last cluster only shows that innovation pursues success and failure in businesses. In the second decade under review, between 1998 and 2007, 449 articles on innovation management were published. Most publications were in 2007 and exactly 120 publications. The growing number of publications has allowed better analysis of the relationships between the key words used. In Figure 3 we can see three clusters as well. It is interesting to see how innovation management has become more remembered in terms of performance and competitive advantage. This highlights the fact that, in conjunction with innovation management, business expectations are combined with improved performance and competitive advantage. In this reporting period were also mentioned: strategy, technology, management, performance, product development, knowledge management, model, firms, research and development, competitive advantage and innovation in general.

Figure following on the next page

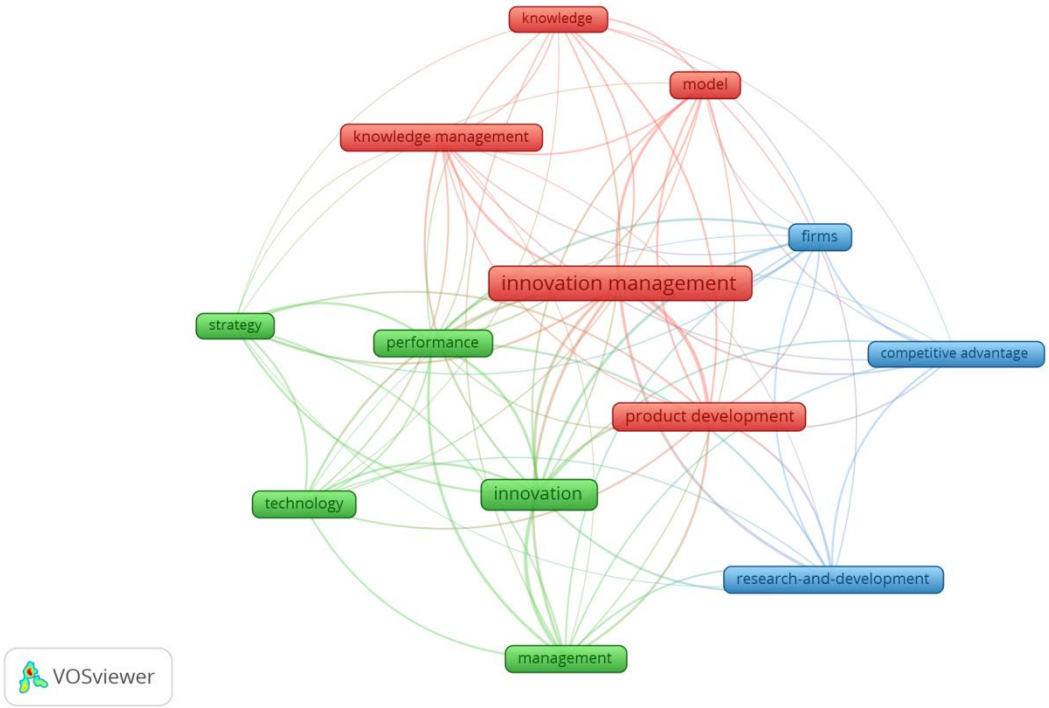

Figure 8: Bibliometric analysis for 1998 - 2007
(Source: own research)

The next decade has the largest number of publications. In total, 2,304 articles were published between 2008 and 2017. the largest number of publications was in 2017. It is also the largest number of publications per year. During this period, the analyzed keywords are divided up to 5 clusters. Each cluster is marked with a separate color in Figure 4. During this period, the following topics were most often associated with the topic of innovation management: Innovation, performance, management, knowledge, product development, technology, open innovation, strategy, model, firms, capabilities, competitive advantage, perspective, impact, networks, industry, systems, dynamic capabilities, exploration, design, creativity, collaboration, framework, exploitation, success, firm performance, organization, business, product innovation, SMEs, products, radical innovation, case study, new product development, cooperation, strategies, integration, market, adoption, information, sustainability, science, implementation, evolution, technological innovation and business model. It can be seen that, compared to previous periods, product development started to be associated with innovations. It is a cluster with purple color. It is also associated with knowledge and sciene. Apple was considered the greatest innovator during this period. Her innovations in design, product, technology, and work environment have inspired many other businesses.

Figure following on the next page

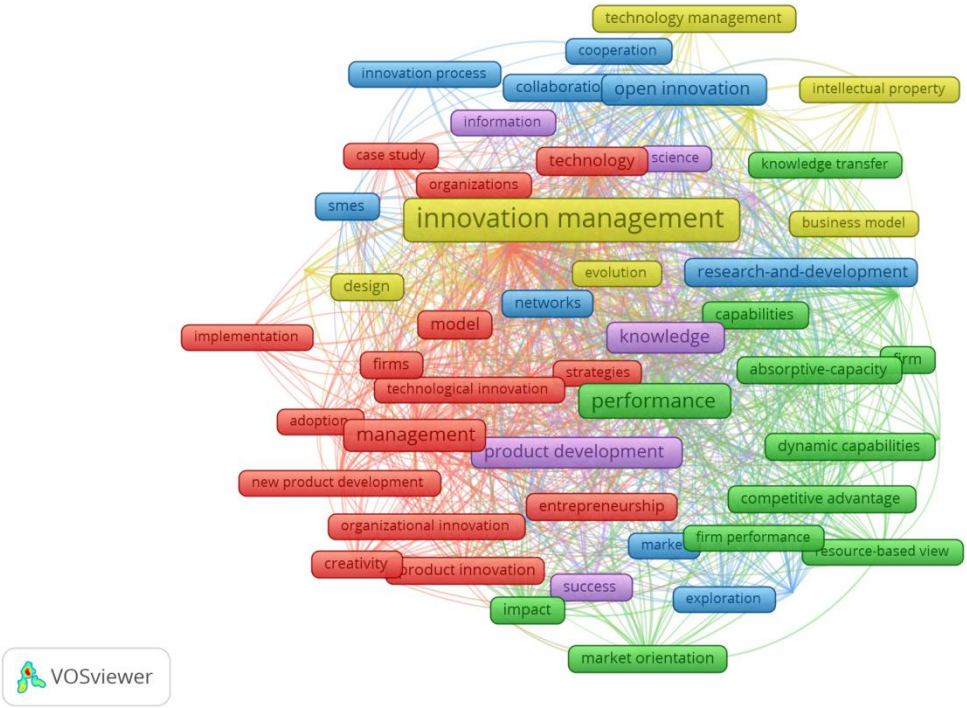

Figure 9: Bibliometric analysis for 2008 - 2017.
(Source: own research)

The last reporting period is only in the range from 2018 to the end of 1Q 2020 (3/2020). It is the smallest observed period. We decided to include it in the analysis to monitor the development of the use of innovation management in new areas. In this shortened reporting period, 562 articles on innovation management have been published. In the past, we can also talk about the paradox of the decreasing number of publications on the subject. We would need data for at least 5 years to verify this claim. The two years followed are insufficient to draw any conclusions on the trend in the publications. Most publications were logically in 2018 and 260 articles. During this reporting period, keywords are redistributed into only three clusters (Figure 5). Again, these are groups associated with performance and technology. Obviously, as in the previous period, we expect an increase in the number of clusters as well as the emergence of new areas that will be associated with innovation management.

Figure following on the next page

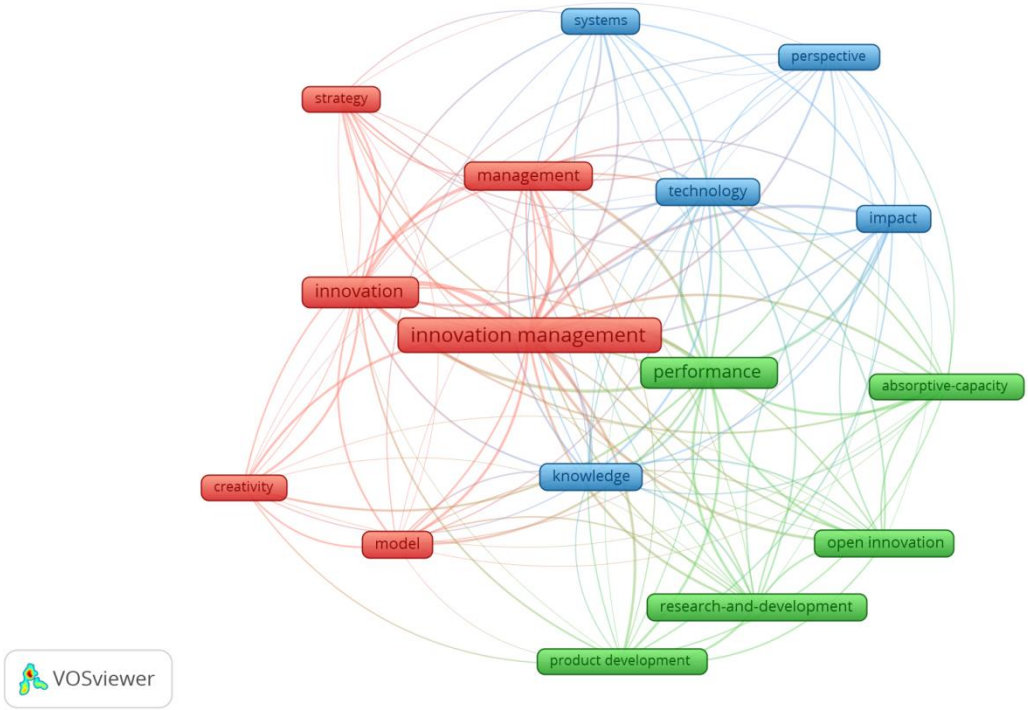

Figure 10: Bibliometric analysis for 2018 - present.
(Source: own research)

4. CONCLUSION

The topic of innovation management is interesting in various research areas. In total, 3,390 articles on innovation management have been published since 1988. Many authors associate innovation with businesses' efforts to differentiate themselves from competitors and gain a competitive advantage. Bibliometric analysis has revealed a number of areas most often associated with innovation management. This is primarily about technology, performance, product innovation, and increasing competitiveness. Authors' teams were dedicated to innovations in different areas and in any case they looked at the innovations, taking into account the uniqueness of their issue. The bibliometric analysis of innovation management from this article may be the basis for further research in innovation as a tool to increase competitiveness in the global market.

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OCCUPATIONAL SAFETY AND HEALTH IN DIGITAL ECONOMY: CHALLENGES FOR GOVERNMENT REGULATION

Eugenia V. Nekhoda
Tomsk state university, Russia
sheyna@sibmail.com

Tatiana V. Kuklina
Tomsk state university, Russia
tyarm@mail.ru

ABSTRACT

Economic transformation has a strong impact on the labor market. New forms of employment are emerging and the processes and functions of employees are becoming more complex. This leads to the new types of occupational risks. Unfortunately, the existing model of government regulation of occupational safety doesn`t meet these modern challenges. We analyze the impact of the digital economy on occupational risks. We also describe foreign experience in modernizing government regulation occupational safety in the digital economy and offer solutions for reforming the Russian system.

Keywords: *Digital economy, Economy on demand, Occupational risks, Occupational safety and health*

1. INTRODUCTION

The system of occupational safety and health (OSH) was the result of industrialization, which created a need for labor and provided people with work, but created poor working conditions, resulting in many cases of industrial injuries and occupational diseases. OSH has improved safety at work resulting in reduced industrial injuries. But today there is an active change in business processes and business models. Technologization and robotization of production processes on the one hand reduces the risk of injury, and on the other hand, the intensification and intellectualization of labor carries new occupational risks that worsen the quality of life and health of employees. New forms of employment, such as on-demand employment, are a black box for national labor laws and the national occupational safety and health (OSH) system. Among Russian researchers, Prokopenko L. V., Denisov E. I., Roik, Boyko, and others were engaged in the problem of OSH in the digital economy. However, this topic is not well researched in Russia, while abroad this area is quite popular in security science. Problems of OSH in the new economic environment were concerned in the year after the publication of the book by Klaus Schwab "the Fourth industrial revolution", which focuses on aging professions and replacing them with robots, while the previous work will be replaced by Internet platforms. The changing nature of production associated with the implementation of innovative technologies, forcing you to change jobs, job functions, creates new and emerging risks along with the traditional [50, 51] international labour organization indicates the need for research on new and emerging risks to develop recommendations to Governments on policies for the protection of labor [28]. Some authors devote their research to changing occupational risks associated with new types of employment [6, 11, 12, 22, 26, 36, 53]. All researchers agree that the innovative economy reduces the risk of injury in production, but generates new risks that lead to occupational diseases. Taking into account the strong impact of psychoemotional factors on the health of employees a number of researchers are studying the mental health of modern workers and improving the level of OSH to preserve mental health [15, 16, 17, 29, 49, 52]. Also, we found several studies on OSH in the conditions of the fourth industrial revolution.

Thus, J. Min, S. Lee, and J. Song write about the need to develop new government programs in the field of OSH and compensation in the context of widespread non-standard employment and robotization and a shift in emphasis from an employer-centric to a public health approach, as set out in the WHO's Health and Safety Convention [30] A. Badria, B. Boudreau-Trudelc , A. Saâdeddine Souissid study the transformation of occupational risks and come to the conclusion that national occupational safety systems are inflexible and need to be modernized as soon as possible based on studies of the impact of non-standard employment on occupational risks [8].

2. RESULTS

Using the methodology of literature analysis, we tried to determine the ways to improve the Russian labor protection system. To do this, we have taken several steps. At the first step, trends in the labor market and the landscape of occupational risks were identified. In the second step, we studied the foreign experience of transforming OSH. At the third step, we proposed recommendations for changing the state policy in the OSH.

2.1. The impact of the digital economy on global employment

The digital economy is often associated with the fourth industrial revolution, which was described in detail by Klaus Schwab in his report at the world economic forum in 2016. In his work "the Fourth industrial revolution", Klaus Schwab describes possible changes in the labor market due to the emergence of qualitatively new forms of organization and business conduct from the point of view of social and labor relations [50]. From the point of view of the development of the organization of industrial production, it is customary to distinguish four main milestones [8]:

1) The first industrial revolution (second half of the 18th – end of the 19th century) the transition from skilled artisans producing goods by hand to workers using machines powered by a water wheel or steam engine. In other words, there was a mechanization of production.
2) The second industrial revolution (late 19th – early 20th centuries) - the beginning of mass production due to the replacement of steam energy with electrical energy and the invention of the conveyor.
3) Third industrial revolution (second half of the 20th century) - discoveries in automation and computerization brought global changes to the production process, including improved accuracy and speed through computer-based calculus and control systems
4) The fourth industrial revolution (the beginning of the 21st century) is usually described by specifying key technologies that have already left the R&d sphere. These technologies include [51]:
    - Big data and machine learning
    - Internet of things
    - Virtual and augmented reality
    - 3D printing
    - Printed electronics
    - Quantum computation
    - Blockchain

The world has overcome differences in time and space with the development of information and communication technologies, which have become a single economic system. Social networks have changed the way people communicate forever. In the future, operating technologies or cyber-physical system devices will track, coordinate, and integrate information in real time. Operating technologies will lead to a Hyper-connected society: with human-machine, machine-machine, and human–human contacts [5].

If human labor is replaced by machines, the labor market will face the challenges of a new industrial revolution [7]. As technology develops, productivity increases and new jobs are created. According to the US Department of labor, from 1960 to 2014, the number of workers in American factories decreased by two-thirds, but labor productivity increased sharply [8]. In addition, the average hourly wage increased by 85% from 1973 to 2014 [50], and new jobs were created in new industries. During the third industrial revolution, the labor force moved from the manufacturing sector to the service sector. In the digital economy, it is not the number of people employed that matters, but the qualifications and jobs that an employee can perform. According to the WOH report, robots will destroy more than 75 million jobs in the world in the near future, although they will create 133 million new ones.[51]

2.2. Changing occupational risks in the digital economy

Modern labor protection systems in the world were built in the industrial era and do not change, despite the transformation of the economy and the industrial landscape. Occupational accident insurance systems are based on the degree of occupational risk and the likelihood of injury at work or occupational illness due to the performance of professional functions. But the classification of occupational risks is also adequate for the industrial age and does not meet the challenges of modern times. The international labour organization recognizes that safety training, culture, practices, supervision and enforcement must be adapted to the new economy [28]. In the on-demand economy employment is equated to self-employment, which means that such people are excluded from legislation to protect injured workers at work [33]. In the legislation on labor protection in most countries, it is customary to refer to an employee only those who work on a permanent basis, with an established workplace and an employment contract [9]. Because of this, employers are not required to provide social security, including pensions, insurance, paid leave, maternity leave, and sick leave [45]. If a person employed in the on- demand economy has an accident, they will not be entitled to compensation and other benefits in accordance with the legislation on the protection of employees from industrial accidents. In addition, for independent workers, unions are difficult to form. In platform companies, one independent employee registers on multiple platforms and provides labor individually in accordance with the needs of the consumer, so there is little sense of belonging to the workplace and little meaning out of solidarity with colleagues. Unstable employment tends to have a negative impact they affect the state of health [34], as it causes psychological and physical causes health risks such as low mental health, dissatisfaction with physical health, anxiety, or high blood pressure. The growth of gigonomy has brought new, previously unknown occupational risks. Trade unions, government regulatory authorities in countries such as Australia, France, Canada, and some States of America (e.g.Florida) today focus their efforts on adapting current labor and compensation legislation to new forms of employment [8]. In our opinion, there are the following problems of workplace safety in the conditions of gigonomy:

1) Some companies that practice new forms of employment operate in areas that are highly risky in terms of occupational risks, such as passenger transport. The risk of injury to an employee of this company who is not employed in a traditional way remains as high as if they were on the organization's staff.
2) Many companies use temporary workers who may not have experience in a particular field. In the absence of proper recruitment and retraining, these workers may not have the knowledge and skills necessary to perform their jobs adequately. Safety training may be necessary so that these employees can perform their duties with the least degree of professional risk. Similarly, given their independent nature of employment, these workers may need personal protective equipment or other traditional workplace protection designed to reduce workplace risk.

3) The Absence of a fixed workplace and gaps in legislation lead to the fact that the injured employee can not get under the insurance program for industrial accidents and occupational diseases only because the organization's management will not provide documentation of the work injury.
4) Gigonomy, characterized by flexibility and independence, tends to attract young workers. Young employees often have less work experience and less experience in the field of occupational safety. These employees may be at greater risk of security threats. Worse, young workers may have an unwarranted sense of invincibility because it is associated with workplace hazards. In the absence of a safety culture, these workers may be more likely to be injured or sick.
5) In the on-demand economy, stress also plays an increasing role as a production risk due to the unstable position of the employed. First, the on-demand economy does not guarantee a person full employment, but only when there is a request for their services. Second, the on-demand economy does not provide stable earnings. Earnings only appear if the employed person is performing work. In such conditions, the employed are stressed by instability [30].

The international labour organization also focuses on psychoemotional risk and stress [28]. From the point of view of experts, the psychoemotional factor is more serious and relevant in the digital economy than the industrial factor due to the increase in the manufacturability of production. Reduced stability, increased intensification of labor functions are factors of stress disorders. In the short term, stress causes decreased performance, apathy, and depression. In the long term, it can have consequences on the musculoskeletal system, the occurrence of hypertension, peptic ulcer disease, cardiovascular diseases, etc. Studies conducted in Europe and other developed countries show that stress is a factor in 50% to 60% of all lost working days [60]. Stress is the second most frequently reported occupational disease in Europe and covers about 22% of the employed [60]. Thus, despite the positive impact of the digital economy on reducing workplace injuries and improving work comfort, new forms of employment and new elements in the production process, such as robotics, have a negative impact on human health (table 1).

Element of the digital economy	Advantages for OSH	Related occupational risks
Robotics and artificial intelligence	reducing the likelihood of industrial injuries due to the replacement of human labor with robotic work on harmful, dangerous objects	- risk of injury due to direct contact with robots in the event of a program failure; - increased mental stress: reduced human communication, fear of replacing robots increases anxiety, depression, etc.
Telework (home work)	Reducing the likelihood of injury at the workplace or on the way to work	Psychoemotional and ergonomic risks are increasing. Increased risk of acquiring occupational diseases associated with disorders of the musculoskeletal system, visual organs due to uncontrolled compliance with the employee's work and rest regime.
On-demand economy	-	High psychoemotional risk factor; Uncertainty of the individual's position from the point of view of legislation in the presence of the same occupational risks as in traditional employment

Table 1: Elements of the digital economy and occupational risks

2.3. Changing approaches to occupational health management at the present stage

Despite the potential for employment created by online platforms new challenges arise for the state regulation of labor protection and health of employees. Regulation of online platforms is difficult due to their rapidly changing activities and the use of innovative methods of work.as a result, traditional tools of state regulation cannot be applied to online platforms.

The application of traditional labor protection rules is difficult due to the high independence of the employee on online platforms, since he is not tied to the workplace and work schedule.A further challenge is that social dialogue is often not available as a regulatory alternative, as the traits of online platform work (individuality, turn-over, varied working patters, competitive mechanisms) are not conducive to unionisation. The online platform reduces the responsibility of the employer in providing labor protection [38, 42, 53]. Due to the fact that the business owner is not clear, the subject who is responsible for the life and health of the employee is also not relevant. Thus, in order to expand the scope of service of the OSH and compensation, the definition of "employer responsibility" and "employee" needs to be revised. In response to these challenges, there are several options for state regulation of labor protection [25]. The first approach is to apply the old rules to the new conditions. The first approach is to 'just' apply the existing rules to the online platform, which entail an individual definition whether an employee of an online platform is an employee, self-employed, or "something" in between. Depending on the (flexibility) of the test used to determine employment status, this may already include many employees of the online platform are in the employee category or in the intermediate category, which means this (most) employment and OSH rules will apply — at least legally. The second approach is as follows take concrete measures to reduce the number of people who will be considered "self-employed" by adding an intermediate category of "independent employee" or rebuttable presumption employment. The third approach is to separate the application of existing rules from employment, thus, the rules of employment and labor protection also apply to self-employed persons. The fourth approach is as follows provide specific (OSH and/or other) protection for employees of the online platform, regardless of whether their employment status. Developed countries are already involved in the process of researching the specifics of labor protection in the on-demand economy, and some countries have already made changes to legislation to guarantee protection for people working in online platforms. The analysis of foreign experience shows that at the first stage, countries conducted a comprehensive study of the gigonomics, its scale, and its impact on the national labor market. These reports can be found in France, Australia, Germany, Belgium, the Netherlands, the European Union, the United States, and the United Kingdom. At the second stage, lawmakers tried to determine the position of people employed in online platforms in the labor legislation. As mentioned earlier, it is the uncertainty of the legal status of non-standard employees that creates problems in the field of labor protection and social insurance. For example, in France, independent employees of online platforms are citizens who are economically and technically dependent on the online platform. In France, work on the modernization of legislation began in 2015 with a comprehensive survey of the labor market of online platforms. The French law on labor protection was supplemented with the following positions [25]:

- independent employees have the right to be insured against accidents and the online platform is responsible for this;
- that these employees are equally entitled to continuous professional safety training, for which the online platform is responsible;
- that they have the right to form a trade Union, be a member of a trade union and have the union represent their interests and have the right to take collective action in defense of their interests. Separately, because of abuse, such collective actions cannot give rise to contractual liability, nor can they give rise to it.
- they can also not be used as a reason to terminate their connection with the platform for such actions, the platform is punished in a different way.

In addition, a specific discussion was held in France on the implications of digital technologies in the field of occupational safety.

One of the priorities of the action plan in the field of labor protection 2016-2020 is about fighting emerging risks, including those related to digital technologies. It offers the following framework for action to combat the use of digital tools [25]:

- raising awareness of the need for companies to integrate into their risk assessment;
- issues related to digitalization (workload, configuration of digital tools, information load, etc.) and develop training of relevant actors in companies in this regard;
- the creation of shared workplaces and shared spaces for telerobotics;
- addressing these issues at the European level, in particular in the context of possible adaptation of the display screen Directive.

In addition to changing the approach to determining employment in developed countries, the approach to accounting for statistical indicators in the field of occupational health is also changing. So, if in the industrial era attention was paid to the number of accidents at work, now the statistics of occupational diseases come to the fore. In some European countries, close attention is paid to the accounting of mental disorders and diseases, given the strong influence of stress as a factor of occupational risk. In the UK, the total number of cases of work-related stress, depression or anxiety in 2016-18 was 488,000, with a prevalence rate of 1510 per 100,000 workers. The number of new cases is 224,000, and the incidence is 690 per 100,000; the number and rate have generally remained the same for more than a decade. The number of lost working days is 11.7 million days, with an average of 23.9 days per case. In 2016-18, stress accounted for 37% of all work-related illnesses and 45% of all work days lost for health reasons [26]. In the United States, according to the American productivity audit in 2016, workers with depression cost employers more than three times as much for lost productivity as they did for all other diseases. The journal of the American medical Association in 2015 reported that the loss of working time due to depressive illness is 44 billion dollars per year. According to the Canadian Association of mental health, for every employee cured of depression, the employer saves from 5 to 10 thousand dollars a year on the cost of medication, disability and replacement at work [16]. In France, with an active population of 23.5 million people, 1-1. 4% suffer from diseases related to occupational stress [25]. The cost of stress at work is 830-1656 million euros per year, i.e. 10-20% of the cost of compensation for injuries and occupational diseases of the social insurance system. According to who, France ranks 3rd in the world among countries in terms of the number of workers with depression. Stress affects one in four employees out of 10; 71% of organizations Express concern about the increase in stress, but 65% have not yet taken measures to combat it [42]. According to scientists, depression is the second cause of disability in the world, and more than 4% of the world's population has such a diagnosis [19]. However, when constant and continuous jobs are scarce, and people have more than one job by their needs, it was hard to assess risk of jobs. Furthermore, in this situation, current industrial accident compensation system cannot protect independent workers. Therefore, this should also be changed from an employer-centered approach to a public-health approach [60].

2.4. Recommendations for changing the state policy in the field of labor protection in the Russian Federation

Currently, Russia has a reactive model of occupational safety management, which was formed in the late 90s – early 2000s. It is based on several principles: it is a strict state control and reaction to an incident that has already occurred based on the results of its investigation. For almost two decades, this system has worked effectively and achieved good results. Over the past 12 years, the number of accidents with serious consequences at work in Russia has more than halved: from 13.7 thousand in 2007 to just under 6 thousand in 2018. The number of fatal injuries has tripled over the same period. However, now the potential of the system is exhausted, the Ministry of labor and social protection of the Russian Federation recognizes.

What worked in the industrial economy does not cope with the challenges of the digital age. Given the speed of changes in technology and the nature of work, the model must be flexible and able to adapt to changing conditions. It is necessary to move from responding to accidents at work and occupational diseases that have already occurred to prevention, effective prevention of the causes of their occurrence. This should not just be a declarative call, it should be spelled out in detail. In other words, it is necessary to create an advanced modernized model of labor protection management. According to the ILO, 2.34 million people die each year from work-related accidents and diseases. Most of them – 2.02 million-die from occupational diseases. Of the 6,300 daily work-related fatalities, 5,500 occur due to occupational diseases. The total number of non-fatal occupational diseases is 160 million per year [13, 23]. It is clear that the death rate from occupational diseases is much higher than from accidents, but in Russia it is not registered or analyzed. This can be partly explained by the fact that Russia, having ratified the ILO Convention 160 "on labour statistics" of 1985, did not ratify its article 14 on statistics of accidents and occupational diseases. Article 2 of the Convention is also not implemented:"in developing or revising the concepts, definitions and methodology used in the collection, processing and publication of statistical data provided for in this Convention, member States shall take into account the most recent standards and guidelines established under the auspices of the International labour organization". This applies terminology and guidelines for example, the ILO definition of occupational diseases as diseases, "due to risk factors associated with work"; it is broader acting within the law 125-FZ and the spirit of article 209 of the labour code on vocational risks. It is necessary to change the outdated paradigm – "labor protection" and form a new paradigm- "health and safety at work" - with a model that can adapt to modern conditions. The main directions can be: - creation of workers 'health protection services based on the ratification of the Convention 161" on occupational health services " (new amended name: "About employee health services»); - ratification in Convention 160 of article 14 on statistics of accidents and occupational diseases and adoption of the international terminology of the ILO [24]: "Occupational disease – a disease developed as a result of exposure to risk factors caused by work", as well as the terms "incident" and "dangerous incident" [24] and understanding of their medical consequences for somatic, mental and reproductive health; - legal recognition of the concept of who 1987 "work-related diseases" (eng. work-related diseases) and its Association with the letter and spirit of the ILO occupational diseases list 2010.

3. CONCLUSION

Digitalization of the economy is already a fait accompli. The new challenge of 2020 in the form of the COVID-19 Pandemic is likely to further accelerate the digitalization of workplaces, which will entail increasing problems in the field of worker safety. Research shows that the level of injuries among informal workers is higher than that of traditional workers, while the degree of protection and coverage by the labor protection system is minimal. Workers in the on-demand economy are exposed to both physical and psychosocial risks. Also, workers of the online platform is usually younger people who are more vulnerable from the point of view of a traumatism. Currently, most of the labor protection services are located in business divisions. However, as the employment relationship changes along with the FIR, divisions and responsibilities for managing employees exposed to harmful factors become unclear. Currently, OHS services in asbestos business units cannot take care of independent workers employed on a project-by-project basis. In other words, OHS services should be changed from an employer-centric to a public health approach, as set out in the WHO's Health and Safety Convention [60]. It is necessary to create a system for monitoring the appearance of new ones forms of labor protection issues, training of experts who will be responsible for changes OSH issues, as well as the adoption of new labour laws and social insurance systems in accordance with changes in working conditions.

Reducing the number of accidents and injuries among employees due to the technological and robotic nature of production, as well as the development of service activities, does not reduce the need for labor protection. Occupational injuries are replaced by occupational diseases, which must be taken into account in order to provide social protection for the employee. To cope with the emerging OHS issues in the fourth industrial revolution era, we need to establish new concepts of 'decent work'," and standardized regulations which apply to enterprises in each country, to develop public health as an OHS service, surveil emerging OHS events and networks among independent workers, and nurture experts to be responsible for new OHS issues.

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ACTUARIAL METHODOLOGY OF ASSESSMENT OF ENTERPRISE RISKS

Leonid Bobrov
Novosibirsk State University of Economics and Management, Russian Federation
l.k.bobrov@edu.nsuem.ru

Alexsander Kiselnikov
Territorial Body of the Federal State Statistics Service of the Novosibirsk Region,
Novosibirsk State University of Economics and Management, Russian Federation
kisielnikov51@mail.ru

Oleg Ryzhkov
Novosibirsk State University of Economics and Management, Russian Federation
ory@ngs.ru

Vladimir Borisov
Institute of Economic Forecasting of the Russian Academy of Sciences (IEF RAS),
Novosibirsk State University of Economics and Management, Russian Federation
vnbor@yandex.ru

ABSTRACT

In the last decade, actuaries' activities have expanded beyond insurance risk assessment to include enterprise risks in a broad sense: credit risks, market risks, liquidity risks, operational risks, project risks, etc. Increased demand has led to the introduction of a new international credential - Chartered Enterprise Risk Actuary (CERA). Today, CERA's professional education and practical activities are based on methods and models for assessing insurance risks, which assume the availability of large amounts of statistical information. However, enterprise risks are not always so stable and universal that extensive statistical series of past observations can be used to predict future losses. There is a need to develop a more flexible mathematical apparatus that would allow a variety of information for constructing the distribution function of a random value of future loss. The article presents the concept of generalized actuarial valuation, which allows solving the problems of assessing business risks. This concept involves combining all available information into an actuarial risk basis – the totality of all acceptable risk assumptions. The actuarial risk basis may include different scenarios, loss models, and different estimates of parameter values. The article describes an algorithm for statistical modeling based on the Bayesian approach, which allows converting such an actuarial risk basis into a discrete approximation of a hypothetical cross-section of a random loss process in the form of central estimates of quantiles of all necessary levels. The article contains a practical example of assessment of the enterprise risk in the exploration and operation of gas and oil fields in a given area of the subsurface. An actuarial model of the random value of the future loss based on the cash flow from the exploitation of the subsurface area has been developed. Based on this model, a loss distribution function is constructed, which is used to assess the level of risk.

Keywords: *Actuarial methods, CERA, Generalized actuarial valuation, Enterprise risk, Statistical methods*

1. INTRODUCTION

The word "actuary" is traditionally mentioned in a context of the terms "insurance" and "pension plans". But in the last decade, actuaries' activities have gone beyond insurance risk

assessment and have begun to cover business risks in a broad sense: credit risks, market risks, liquidity risks, operational risks, project risks, etc. Increased demand led to the introduction of a new international certificate - Chartered Enterprise Risk Actuary (CERA). There are reasons for this. First, actuarial practice is an example of strict quantitative risk assessment. On the other hand, the practice of risk management is experiencing a growing need for quantitative, scientifically based risk assessment. For example, COSO notes the need to use quantitative methods in assessing risks and building a risk profile [4]. Today, CERA's training and practical activities are based on methods and models for assessing insurance risks, which assume the availability of large amounts of statistical information. Indeed, the classic CERA training program is the insurance actuary training program plus the risk management discipline [1, 2]. The recommendations of actuaries for assessing business risk are based on the classic insurance models [3]. However, business risks are not always so stable and universal that extensive statistical series of past observations can be used to predict future losses. Thus, there is a need to develop a more flexible mathematical apparatus that would allow you to use a variety of information to build a distribution function for a random amount of future loss.

2. GENERALIZED ACTUARIAL VALUATION

Most generally, business risk can be defined as the risk of losses of a particular enterprise over a certain period of time (for example, one financial year, the duration of the project, and so on). Quantitative assessment of the consequences of implementing business risk is the difference between discounted accumulated cash outflows and inflows over a certain period of time. It is obvious that for speculative risks there is an area of negative values of losses, that is, benefits. If the interval is short enough, then you can do without discounting. In contrast to traditional statistical tasks, risk assessment is a probabilistic measurement of the future based on current knowledge. Therefore, the probability distribution of future losses should be considered more in the Bayesian sense – as a probability distribution, which follows from our subjective ideas about the future. Because of uncertainty in the future, we still have nothing else. In our assumptions about the future, we can only be as unbiased as possible, and then our risk assessments are most likely to be adequate. Therefore, we do not need to limit ourselves to statistical information only – it is used only within the framework of the assumption that the trend is unchanged as one of the possible assumptions, it is necessary to use other assumptions more boldly. The main difficulty is how to convert these assumptions into quantitative characteristics of the loss. The predominance of estimates based on historical data, primarily on statistical information, is due to the fact that there are clearly defined quantitative methods based on such data. This article presents one of the approaches to solving this problem.

2.1. Description of risk

From a quantitative point of view, risk can be described as a random process of loss. For practical purposes, a random risk process can be conveniently represented in a matrix of quantiles of the losses, the columns of which correspond to discrete pointsin time with a specified step, linesof which correspond tospecified level quantiles (perhaps with a uniformly set step), and the elements of the matrix are the accumulated losses for the period from the start time to the time that corresponds to a column. If we are only interested in one moment of time, then the risk description is reduced to a matrix-column. If for some reason we are only interested in one quantile, then the risk description is reduced to a scalar. It is easy to show that any known risk measures, in particular, Value-at-Risk and Expected Tail Loss for each time point, are easily calculated based on the specified matrix. This calculation is approximate, since any column of the matrix is an approximation of the distribution function, but the accuracy of the calculation increases with a decrease in the quantile step.

Almost any actuarial task, including the traditional assessment of insurance and pension reserves, tariffs, and the required amount of capital, can be reduced to an assessment of all elements of the quantile matrix.

2.2. Building a matrix of quantiles of the future loss

The quantile matrix can be constructed as follows.

Let the estimate of future loss for each discrete moment of time be a function of some set of random arguments. Most generally, you can offer several alternative versions of such a function that use different sets of arguments. Next, you must set future values for each of the function's arguments, and most often this can be done in various ways. For a deterministic quantity, alternative estimates of its value are possible, and for a discrete or continuous random variable, alternative estimates of its distribution function are possible. However, keep in mind that not all alternatives to one argument can be combined with all alternatives to another argument. For example, all forecast values of the oil price in a particular year are combined with the forecast values of the exchange rate, and so on. This relationship can be taken into account either through correlation functions, if they can be defined and explicitly used in the model, or through the introduction of alternative scenarios, which are defined so that only joint alternatives are included in one scenario. In some cases, depends on the script and the choice of the model, for example, models in the liquidation of the business differ from the models with continuous activities. So, to model our risk estimates, we have a set of alternative scenarios, within each of the scenarios – a set of alternative loss functions, and for each argument of each of the functions – a set of alternative values of this argument. Such a tuple would be appropriately called an actuarial risk basis, since it contains the entire set of actuarial assumptions for assessing risk. Let's assume that the elements of the actuarial risk basis (scenarios, functions, argument values) include several alternatives, and each alternative meets the eligibility requirement. We consider acceptable an alternative that is quite likely to be implemented in the future, in any case, we cannot prove the opposite based on our knowledge and experience. The actuarial basis of risk reflects both objective and subjective variation of loss factors. This approach seems fair, because due to the fundamental principle of uncertainty of the future, there is no reliable and objective knowledge about the future, there are only subjective assumptions that can be justified (acceptable) or not. If we choose from each element of the actuarial basis of risk for one alternative, then we can get some kind of individual assessment of loss. Such a loss will be obtained in the future, provided that these alternatives are implemented. Here we introduce our key postulate: an actuarial basis of risk made up of acceptable alternatives (let's call it a non-misrepresentedactuarial basisof risk) is the display at a given time of some subset of the likely values of future losses. In fact, this postulate is not something completely new, but only explicitly expresses the basic assumption of any forecast. However, it follows that the more of acceptable alternatives we have identified and included in the actuarial basis of risk, the greater the power of the subset of probable future losses presented by it, in other words, the more fully such an actuarial basis characterizes the risk. If the actuarial risk basis is non-misrepresented, then the actual realization of each single loss estimate for this basis is a probable event. Following the Bayes postulate, in the absence of other information, the probability of the truth of all alternatives will be considered equal. As a result, the probabilities of all single estimates are the same. Therefore, from all the single loss estimates that can be obtained from an undistorted actuarial risk basis, we can construct an increasing variation series. It will be a sufficient approximation of the loss distribution function. Of course, this refers to the probability distribution in the Bayesian sense, understood as a measure of subjective confidence. As we noted above, the number of alternatives can be quite large, some alternatives can be interval estimates, for example, with a uniform or other specified distribution of values. In addition, in most cases, the loss function is continuous.

Under these conditions, direct calculation of all unit estimates may be impossible or difficult, so it is appropriate to use the Monte Carlo method, which gives an acceptable approximation [5].

2.3. Computational algorithm

To obtain a statistically reproducible result, the computational experiment for forming a sample variation series of sufficient length $N \geq \lfloor 1/h \rfloor$ ($h \leq a$ is the step of quantile levels, $0 < a \ll 1$ is the required accuracy) must be repeated M>30 times. The process of evaluating quantiles based on the results of these experiments can be considered as a statistical game in which the strategies of statistics and nature coincide. The solution to such a game, which minimizes the expected estimation error, is the central estimate of all quantile estimates. If we minimize the expected quadratic estimation error, then the central estimate is equal to the arithmetic average of the unit estimates, and if we minimize the expected absolute estimation error, then this estimate is equal to the median [6]. The algorithm for quantifying the level of risk has the form shown in figure 1.

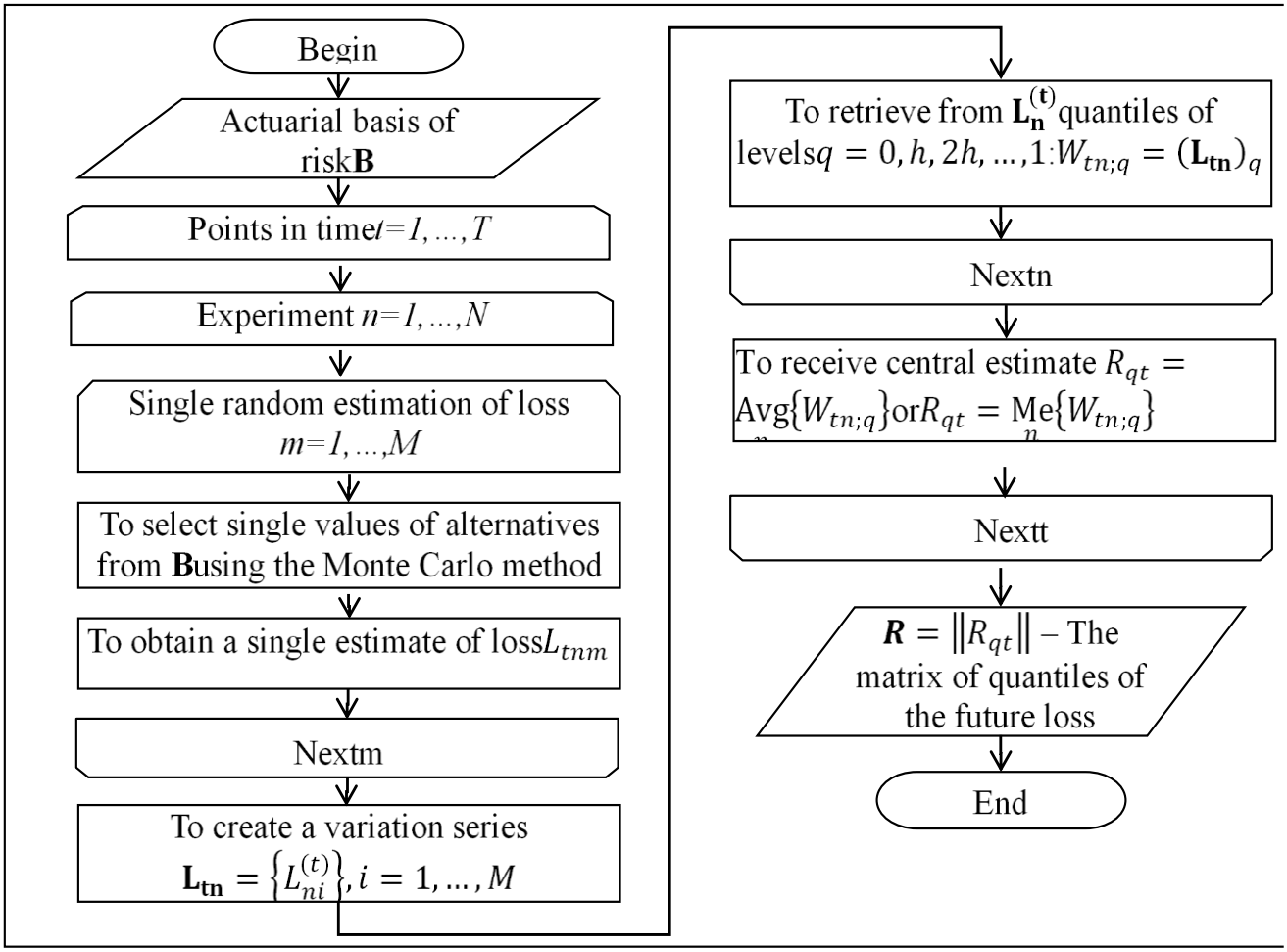

Figure 1: Block diagram algorithm build matrix of quantiles loss using Monte Carlo

3. EXAMPLE ASSESSMENT OF RISKLEVEL

In an example consider a special case business risk – the risk during the exploration and operation petroleum fields at a predetermined the subsurface area. The consequences this risk can be the measured accumulated the difference between the outflow and inflow money on the site subsoil that is the value that the opposite the sign of the net cash stream.

The equation which reflects the consequences risk has the following:

$$L_t = -E + \sum_{j=1}^{t}\left[G_j + \Delta n_j \cdot b \cdot I_j + n_j \cdot c \cdot I_j - \left(p_j^o \cdot q_j^o + p_j^g \cdot q_j^g\right) \cdot (1 - y^n - f_i) + y^p \cdot \right.$$
$$\left. \cdot \max\left(p_j^o \cdot q_j^o + p_j^g \cdot q_j^g - n_j \cdot c \cdot I_j\right) - \Delta D_j + w_j \cdot \sum_{k=1}^{j} \Delta D_k \right] \cdot \frac{1}{(1+r)^j}$$

Here:
Eis initial capital, $ million;
tis year as the end of which we estimate the level of risk;
$j = 1, \ldots,$ tis index of year;
risthe nominal discount rate;
$G_j$is the cost of geological exploration in the subsoil in j-th year, $ million;
$\Delta n_j$is the number of built new operational wells in j-th year (for simplicity we believe that the change in the number wells happens instantly the beginning of the year), item;
biscost of construction by one operational well in base year, $ million;
$I_j$isprice index in j-th year to the basic year;
$n_j$isnumber of existing operating wells (including newly built and departures wells) on beginning j-th year, item;
cisthe relative operating cost by one operating well in base year, $ million;
$p_j^{o,g}$isforecast price of accordingly oil ($/bbl) and associated petroleum gas ($/thousand cubic meters) in the current prices jth year;
$q_j^{o,g}$is annual productionof accordingly oil (bbls million) and gas (billion cubic meters) for all wells;
y^nisrate of tax on oil and gas production;
$f_j$is ratio of losses from defaults buyers oil and gas in j-th year;
$y^p$is rate of income tax;
ΔD_jisobtaining (+) or refund (-) of loan in j-thyear (we believe payments happen in the beginning of the year),$ million;
$w_j$isinterest rate in j-thyear.

As it is easy to see to improve clarity this model a few simplified. However offer the method is suitable for calculations any degree complexity. Now we need to do actuarial assumptions regarding future values these parameters. Annual oil production describes the following formula:

$$q_j^o = Q_0^o \cdot d \cdot e^{-d \cdot j}$$

Here:
$Q_0^o$is initial recoverable oil resources, bbls million;
$d$is annual temp of oil production.
Annual associated petroleum gas production describes the following formula:

$$q_j^g = q_j^o \cdot \frac{Q_0^g}{Q_0^o}.$$

Here Q_0^g is initial recoverable resources of associated petroleum gas, billion cubic meters. There are two equal ways to calculate the number of existing operating wells. Way 1 ismodel of the permanent flow rate of the fluid from one well:

$$n_j = \frac{q_j^o}{F \cdot (1 - B_j)}.$$

Here:
F = constis permanent liquid flow from one well, bbls million in year;
$B_j$is oil watercut in j-th year.

Way 2 is the coefficient model from initial recoverable oil resources:

$$n_j = Q_0^o \cdot l_j.$$

Here l_j is coefficient of the number of wells in j-th year from initial recoverable oil resources. The number of built new operational wells determined according to the formula:

$$\Delta n_j = \max\{n_j - n_{j-1} + \Delta n_{j-a}; 0\}, n_0 = 0, k \leq 0: \Delta n_k = 0.$$

We will consider risk , that is, for period of 3 years. The rest settings model set as the ranks of acceptable numeric values on the basis of available information and evaluations. For example, oil prices can be taken according to projections IMF, IPA and other organizations. Data on primary retrieved stocks can to be obtained on the basis of assessments, data geological unit of the company. Let for example, from available geological information implies the following distribution function of recoverable oil resources (figure 2):

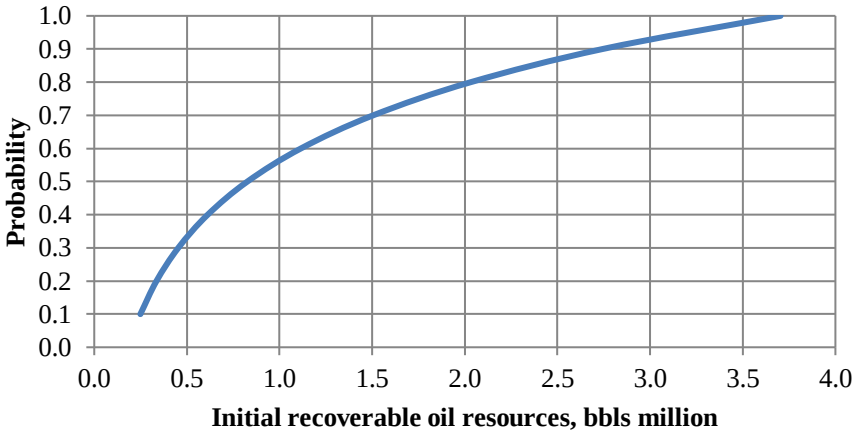

Figure 2: Cumulate curve of distribution of initial recoverable oil resources

Selecting equiprobable areas we get the following the value series of recoverable oil resources: 0,0; 0,1; 0,3; 0,4; 0,5; 0,7; 1,0; 1,3; 1,8; 2,4; 3,2. In our example actuary conducted analysis at the beginning April 2020 and identified two equiprobablescenarioof oil business: optimistic and pessimistic. The optimistic scenario assumes early overcoming consequences pandemic coronavirus, recovery economy to previous level, demand growth and oil prices. The pessimistic scenario assumes save low prices oil in the background the development of global economic crisis. Let the actuary collect all the available information and build the following actuarial basis ofrisk (table 1):

The element of basis	The pessimistic scenario	The optimistic scenario
Loss	$L_t = -E + \sum_{j=1}^{t}\left[E_j + \Delta n_j \cdot b \cdot I_j + n_j \cdot c \cdot I_j - \left(p_j^o \cdot q_j^o + p_j^g \cdot q_j^g\right) \cdot (1 - y^n - f_i) + y^p \cdot \right.$ $\left. \cdot \max\left(p_j^o \cdot q_j^o + p_j^g \cdot q_j^g - n_j \cdot c \cdot I_j\right) - \Delta D_j + w_j \cdot \sum_{k=1}^{j} \Delta D_k\right] \cdot \frac{1}{(1+r)^j}$	
Annual oil production	$Q_0^o \cdot d \cdot e^{-d \cdot j}$	$Q_0^o \cdot d \cdot e^{-d \cdot j}$
Annual associated petroleum gas production	$q_j^o \cdot \frac{Q_0^g}{Q_0^o}$	$q_j^o \cdot \frac{Q_0^g}{Q_0^o}$
Number of existing operating wells	$\frac{q_j^o}{F \cdot (1 - B_j)}; Q_0^o \cdot l_j$	$\frac{q_j^o}{F \cdot (1 - B_j)}; Q_0^o \cdot l_j$
Number of built new operational wells	$\max\{n_j - n_{j-1} + \Delta n_{j-a}; 0\}, n_0 = 0, k \le 0: \Delta n_k = 0$	$\max\{n_j - n_{j-1} + \Delta n_{j-a}; 0\}, n_0 = 0, k \le 0: \Delta n_k = 0$
Initial recoverable oil resources, bbls million	0,0;0,1;0,3;0,4;0,5;0,7;1,0;1,3;1,8;2,4;3,2	0,0;0,1;0,3;0,4;0,5;0,7;1,0;1,3;1,8;2,4;3,2
Initial recoverable resources of associated petroleum gas,billion cubic meters	0,02;0,07	0,02;0,07
Annual temp of oil production	0,03;0,05	0,03;0,05
Permanent liquid flow from one well, bbls million in year	0,004;0,0055	0,004;0,0055
Oil watercut: year 1	0,05;0,1	0,05;0,1
Oil watercut: year 2	0,1;0,15	0,1;0,15
Oil watercut: year 3	0,15;0,18	0,15;0,18
Coefficient of the number of wells: year 1	5;8	5;8
Coefficient of the number of wells: year 2	8;10	8;10
Coefficient of the number of wells: year 3	11;14	11;14
Cost of geological exploration: year 1, $ million	27,5;28,7	27,5;28,7
Cost of geological exploration: year 2, $ million	0,8;1,0	0,95;1
Cost of geological exploration: year 3, $ million	0,99;1,2	0,99;1,2
Relative operating cost by one operating well in base year, $ million	0,65;0,9	0,65;0,9
Price index: year 1	1,03;1,04	1,03;1,04
Price index: year 2	1,01;1,02	1,02;1,04
Price index: year 3	1,01;1,02	1,03;1,05
Cost of construction by one operational well in base year, $ million	0,280;0,420	0,280;0,450
Forecast price of oil: year 1,$/bbl	16;27;33	40;48;55
Forecast price of oil: year 2,$/bbl	18;21;25	47;54;58
Forecast price of oil: year 3,$/bbl	20;24;26	52;60;75
Forecast price of associated petroleum gas: year 1,$/thousand cubic meters	16;20	42;48
Forecast price of associated petroleum gas: year 2,$/thousand cubic meters	17;20	44;50
Forecast price of associated petroleum gas: year 3,$/thousand cubic meters	18;20	46;52
Rate of tax on oil and gas production	0,4;0,45	0,45
Rate of income tax	0,2	0,2
Ratio of losses from defaults buyers oil and gas: year 1	0,15;0,3	0,05;0,15
Ratio of losses from defaults buyers oil and gas: year 2	0,2;0,3	0,02;0,03
Ratio of losses from defaults buyers oil and gas: year 1	0,1;0,2	0,02;0,03
Changing the amountof loan: year 1, $ million	25	25
Changing the amountof loan: year 2, $ million	0	0
Changing the amountof loan: year 3, $ million	-25	-25
Interest rate of loan: year 1	0,02	0,03
Interest rate of loan: year 2	0,03	0,04
Interest rate of loan: year 3	0,03	0,04
Nominal discount rate	0,03;0,04;0,045	0,05;0,08
Initial capital, $ million	40	40

Table 1: Actuarial basis of risk

Then using the algorithm presented figure 1 (M=30,N=1000), the actuary may to obtain the matrix quantiles losses. Value N=1000 allows to receive quantiles with uniform step levels 0,001. But not in all quantiles you might have practical need. So, let this example actuary interested in quantiles the following levels of 0,1; 0,2; 0,3; 0,4; 0,5; 0,55; 0,6; 0,65; 0,7; 0,75; 0,8; 0,81; 0,82; 0,83; 0,84; 0,85; 0,86; 0,87; 0,88; 0,89; 0,9; 0,91; 0,92; 0,93; 0,94; 0,95; 0,96; 0,97; 0,98; 0,99; 0,995; 0,999. The matrix of quantiles is (table 2):

Quantileleve l	Year 1	Year 2	Year 3
0,000	-37,7	-35,9	-15,10
0,100	-35,8	-33,8	-10,98
0,200	-34,9	-32,4	-9,15
0,300	-33,8	-30,7	-6,92
0,400	-32,6	-29,0	-4,65
0,500	-31,0	-26,8	-1,29
0,550	-30,0	-25,0	0,73
0,600	-28,7	-23,1	2,86
0,650	-27,4	-20,9	5,52
0,700	-25,8	-18,6	8,25
0,750	-24,0	-15,5	11,84
0,800	-21,5	-12,2	16,38
0,810	-21,1	-11,6	17,26
0,820	-20,7	-10,9	18,10
0,830	-20,1	-10,2	18,99
0,840	-19,3	-9,3	20,58
0,850	-18,7	-8,3	21,96
0,860	-18,0	-7,6	23,34
0,870	-17,3	-6,7	24,76
0,880	-16,3	-5,8	26,33
0,890	-15,9	-4,6	27,87
0,900	-15,0	-3,6	29,82
0,910	-13,8	-2,2	32,17
0,920	-13,0	-1,0	33,96
0,930	-11,6	0,3	36,22
0,940	-10,3	1,9	37,93
0,950	-8,8	4,0	40,44
0,960	-7,2	5,6	42,63
0,970	-4,1	8,9	46,78
0,980	-1,7	12,4	52,25
0,990	5,0	17,8	59,09
0,995	15,6	24,5	66,06
0,999	30,2	37,2	78,67

Table 2: The matrix of quantiles loss gained of actuarial basis of risk from table 1

As it is easy to see given the known information the probability ruin oil company in the first year is 1-0,99=0,01 second year – a 1-0,93=0.07, and in the third the year – 1-0,55=0,45. Appropriate distribution function presented figure 3.

Figure following on the next page

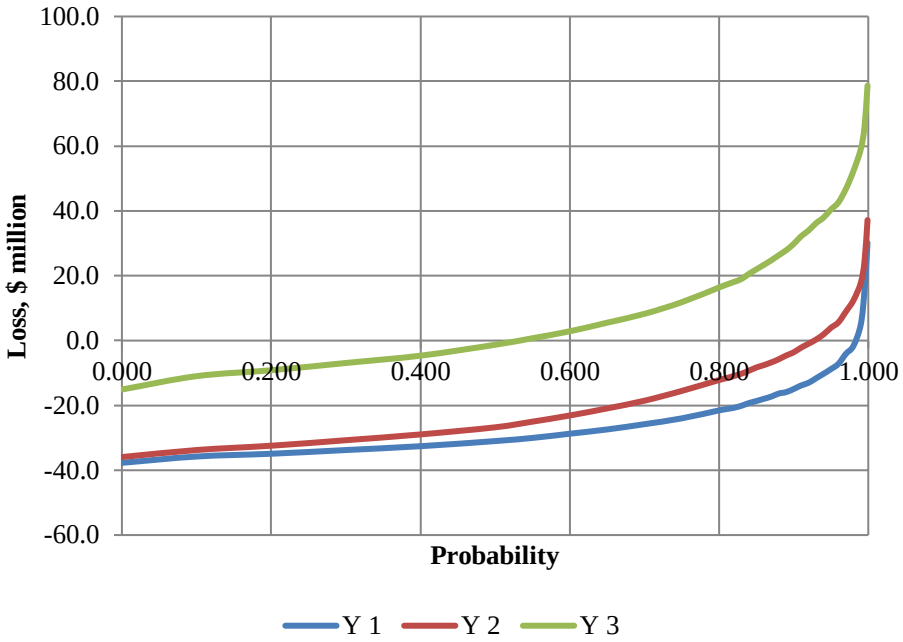

Figure 3: Function distribution losses exploration and oil and gas in the area of the subsurface

On the basis of the obtained results the actuary may to determine indicators VaR and ETL (table 3):

Indicator	Y 1	Y 2	Y 3
$VaR_{0,95}$	-8,8	4,0	40,4
$VaR_{0,99}$	5,0	17,8	59,1
$ETL_{0,95}$	-4,6	8,2	46,0
$ETL_{0,99}$	9,9	21,1	62,5

Table 3: Values measures of risk VaR and ETL for years

Thus, the presented algorithm allowed to transform a variety of acceptable information, which is presented in the actuarial risk basis, into a discrete approximation of the distribution function of Bayesian probabilities of future loss. This approximation can be used for various purposes, such as determining the risk measure and assessing the probability of default.

4. CONCLUSION

The article describes a method for statistical modeling of the loss quantile matrix based on the Bayesian approach, which allows converting such an actuarial risk basis into a discrete approximation of a hypothetical cross-section of a random loss process in the form of central estimations of quantiles of all necessary levels. As you can easily see, in the application of the method, risk is evaluated through losses. The traditional risk classification, which distinguishes credit risk, interest rate risk, market risk, liquidity risk, etc., is not used, since the loss that occurs under the influence of all risk factors in the aggregate is subject to assessment. If necessary, you can evaluate the components of the total risk as partial differentials by changing the individual arguments that correspond to this risk, while the values of the remaining arguments remain unchanged. The method presented in the article probably has sufficient invariance with respect to the actuarial problem to claim the name of generalized actuarial valuation. It can be applied in insurance, and in other areas that require monetary risk assessment.

There are no barriers to use in cases where quantitative risk assessment in other units is necessary. As you can see, the method of generalized actuarial valuation can take into account almost any data. Using this method changes the actuary's task. The actuarial function can focus on applying knowledge and skills to find, verify, and scientifically validate as many acceptable alternatives as possible for inclusion in the actuarial basis of risk. Comparison of estimates prepared by different actuaries, it is easy to carry out by comparing their use of actuarial risk basis.

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ECONOMIC DEVELOPMENT AND SUSTAINABLE FISCAL POLICY FOR OIL COUNTRIES

Orkhan Sadigov
Azerbaijan State University of Economics (UNEC)
Istiqlaliyyat Str. 6, Baku AZ-1001, Azerbaijan
orxan.sadiqov@maliyye.gov.az

ABSTRACT

The main objective of the study is to explore how to achieve economic growth and sustainable fiscal policy through the efficient use of oil revenues in oil countries. Research work has been carried out on the basis of systematic analysis and methods. The study also investigated fiscal policies for oil countries in the world practice and analyzed the results during the research. The practical significance of the study is that the implementation of complex measures proposed in the article will ensure the effectiveness of budget expenditures in oil countries, the formation of a sustainable state budget through the efficient use of oil revenues, the dependence of the state budget on oil revenues will be reduced and sustainable economic growth, regardless of oil revenues, and all proposed in the article was justified by the evidence. At the same time, it was discovered that most of the state budget revenues (about 70%) are formed in the oil sector, which is risky in terms of oil prices in the world market. To do this, oil-rich countries need to develop the non-oil sector and achieve economic diversification in order to achieve long-term economic growth and sustainable economic development. The scientific novelty of the research is that the specifics of the rational use of oil revenues and the ways of ensuring a sustainable fiscal policy have been identified and recommendations have been made in practice.

Keywords: *sustainable fiscal policy, diversification of the economy, non-oil sector development, oil revenues, Medium Term Expenditure Framework*

1. INTRODUCTION

In oil countries proper fiscal policy, the efficient use of oil revenues, the development of an effective budget, preparing result-based budget, evaluation of macroeconomic effects and analyzing long-term fiscal sustainability, as well as the determination directions of improvement fiscal policy must be main economy policy of states. An abundance of oil resources is a serious challenge for macroeconomic policies. Large tax receipts from oil may allow oil producing countries to significantly augment government spending to address poverty and improve main public services in education, health, and infrastructure development. Besides, macroeconomic management in these countries is hard because oil resources are exhaustible, which goes up intergenerational considerations and exposes the need for balance between government consumption and saving for the long term. Economists must find the right mix of consumption today and tomorrow, as well as prioritizing poverty-alleviating spending programs. The obscurity of evaluate of oil receipts, stemming both from volatile international prices and imprecise assessment of reserves, further complicates the arrangment of fiscal policy rules to govern the use of oil receipts. In the current study, these approaches were used in the assessment of the oil countries' economy.

2. FISCAL POLICY

There clearly is not one optimal fiscal regime suitable for all petroleum projects in all countries. Countries differ, most importantly in regard to exploration, production costs and development; investor perception of political and commercial risk and the size and quality of petroleum deposits. In this way projects may differ sufficiently that some flexibility is necessary in deriving an appropriate fiscal regime.

At times, this could justify a case-by-case approach to project negotiations, though it is desirable if the chosen fiscal framework is sufficiently flexible to respond to unforeseen developments so as to minimize the need for changes. These factors will influence the size of the government's revenue take: a country with large proven low exploration , reserves and development costs will be able to negotiate a higher revenue share than a country that has a short, and perhaps somewhat uneven, track record, particularly if there is uncertainty regarding the size, quality and extraction costs of its petroleum reserves (Emil M. S., et al., 2002). The experience of oil-producing countries with fiscal rules and fiscal responsibility legislation (FRL) has been relatively limited. The evidence suggests that implementing quantitative fiscal rules has proved very challenging, mainly owing to the characteristics of political economy factors and oil revenue. Procedural FRL may hold more promise for improving fiscal management. As a result of the boom and favorable oil prices in the oil-rich countries over the past decade, oil revenues have ensured a quick increase in budget expenditures and making them the basic source of revenue for the state budgets. A medium-term framework (MTF) can help link annual budgets to longer-term policies and fiscal sustainability objectives, and enhance risk analysis. The budgets of many oil-producing countries are characterized by short-term horizons, with little reference to longer-term policies and objectives. MTF that explicitly incorporate a longer-term perspective can help promote predictability, develope resource allocation, and enhance accountability and transparency. MTF can be specifically designed to help address the fiscal risks posed by unpredictable, volatile and exhaustible oil revenues. However, the implementation of MTF should be gradual and consistent with institutional capacity. As a result, the rapidly growing state budget has become an indispensable source of funding for major socioeconomic problems in the country and a key driver of non-oil aggregate demand, and on the other hand, the main channel for spending oil revenues. This has raised the issue of sustainability of public finances for the long term in the current phase of decline in oil production (Philip Daniel). This article also analysis the problem of the sustainability of public finances in oil countries and the ways to increase sustainability. It is important to analyze the effects of injecting large amounts of oil money into the economy through the state budget, which ensures rapid growth of budget expenditures.The analysis shows that the transfer of large amounts of oil through the budget channel reduces the effectiveness of monetary policy and making fiscal policy a dominant position.This in turn has negative economic consequences, such as high volatile inflation and high interest rates. The injection of oil dollars into the economy, as well as the rise in national currency (in real terms), higher wages, and changes in the movement of financial and labor resources reduce and limit the competitiveness of the commercial sector. Other significant effects of the transfer of a portion of oil revenues to the economy through the budget channel have manifested itself as "Dutch disease" symptoms. Real appreciation of the national currency and rising labor costs negatively affected the competitiveness of the non-oil economy, and the rapid growth of the above-mentioned sectors contributed to the financial and partial labor outflow to the non-commercial sectors (Anis Khayati, 2019). There are a number of important points in the oil economy that need to be taken into account in order to gradually mitigate and eliminate the above-mentioned negative economic consequences of the budget deficit and financing form:

- provide spontaneous dynamic development of the non-oil sector, to increase its competitiveness and export potential;
- increase non-oil revenues of the budget, to increase long-term sustainability of the budget and to reduce budget deficit;
- continue the work to further improve the business environment to ensure dynamic economic growth and increase private investment activity;

- limiting fiscal dominance via achieving a balanced increase in budget spending, increasing the freedom of monetary policy, thereby increasing the effectiveness of monetary policy in terms of its macroeconomic and financial stability.

In general, a sufficient condition for ensuring fiscal sustainability is that fiscal rules target a non-oil fiscal deficit that at most equals the financing provided by oil resources. Nevertheless, rules that frontload the use of oil proceeds, even when abiding by this principle, could arguably risk putting the country on a fiscal path that is not sustainable, since substantial fiscal adjustments are needed when oil receipts start dwindling as the resources are depleted. Often, these adjustments are hard to implement. A softer version of this policy would be to target a balanced budget over a longer period, perhaps three to five years, using a projection of oil prices and revenues. From an intertemporal perspective, however, it would still be biased toward current generations (Cheryl Gray et al., 2007.). There could be a high opportunity cost in terms of foregone social and infrastructure spending in the early years at the expense of future spending. Between these two extremes are several other fiscal rules, among them constant expenditure rules, rules that target a price of oil and save any revenues generated by prices above that threshold, and rules that save a fixed percentage of oil revenues. The oil windfall not spent in these cases can be allocated to savings or stabilization funds, or both, to smooth out fluctuations in annual government spending. Some of these rules, however, do not guarantee fiscal sustainability or optimal intergenerational consumption of oil wealth (Alonso Segura, 2006).

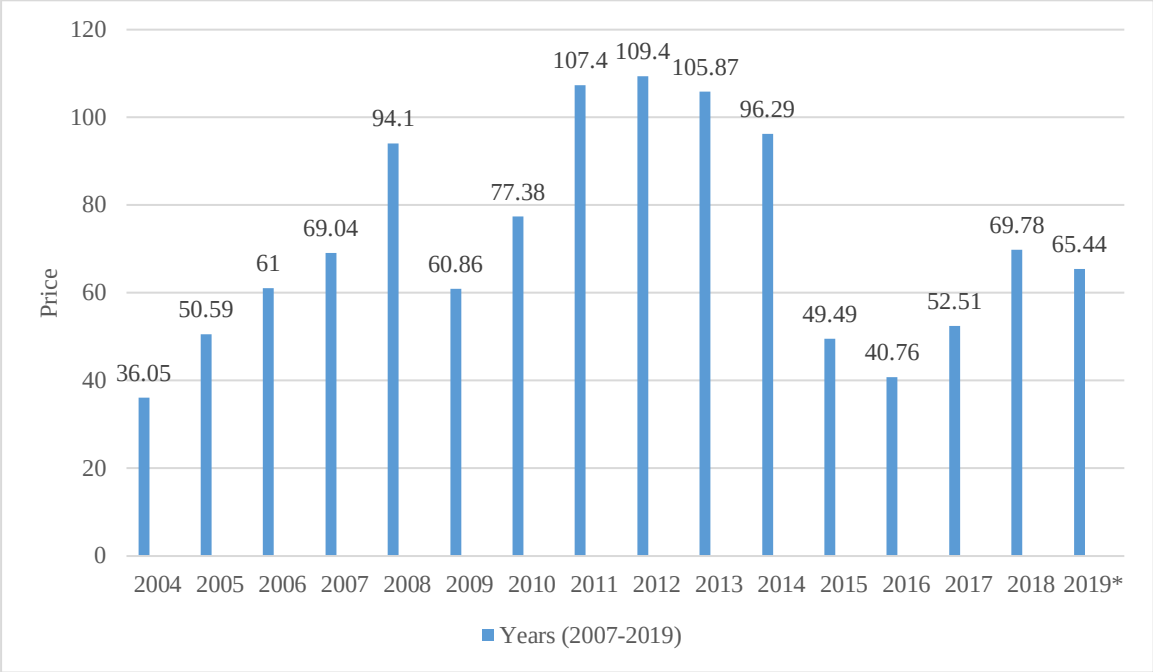
3. ECONOMY DEVELOPMENT

In the modern world, macroeconomic stability, the development of all sectors of the economy, improving the living standards of the population, increasing non-oil factors in the state budget revenues, investing oil revenues to fields which will cause economic development are the main directions of the economic policy of the state oil countries. Changes in oil prices on the world market in recent years have naturally caused to a decline in state budget revenues in oil countries. This, in turn, has caused to some expences have not been provided in the state budget of those countries. In this regard, the development of a sustainable fiscal policy is one of the main economic priorities in reducing the dependence of the country's economy on oil revenues. Oil prices impact on GDP positively Besides, trade balance, budget, internal economics, gold–currency reserves, foreign investment are directly related to oil prices. It directly impacts on the main determinant of economics – government expenditures. Macroeconomic indicators such as – industry production index, unemployment, GDP, government expenditures depend on oil factors like oil price and oil production (Sugra et al., 2019). Generally, the economies of crude oil countries are described as follows:

- There is no diversification in the economy;
- non-oil production sectors involved in foreign trade are further deteriorated;
- The economy develops in one direction;
- The exchange rate of the national currency to foreign currencies is strengthening;
- production factors are shifted from the manufacturing industry to the service and extractive industries;
- Excess imports have a negative impact on the interests of domestic producers;
- The financial independence of a country depends on the conjuncture of prices on the world market.

In this investigation the last fifteen years average oil prices are analyzed by author. We can see results in following figure 1:

Figure 1: Average annual OPEC crude oil price from 2004 to 2019 (in U.S. dollars per barrel)



Source: https://www.statista.com/statistics/262858/change-in-opec-crude-oil-prices-since-1960/

This figure has been prepared by author. This picture shows that from 2004 to 2012 oil prices rose and saw 109.4 US. dollars per barrel. However, from 2013 year begun go down and reach 69.78 US. dollars per barrel. There can be so many economic and political reason for this trend. But main problem is that oil prices always are changeable. And this fact carries certain risks for macroeconomic stability in oil countries. As the analysis progresses, consider the following tables:

Table 1: Medium-term oil demand during 7 years (mb/d)

	2017	2018	2019	2020	2021	2022	2023	**Growth 2017-2023**
OECD Europe	14.3	14.4	14.4	14.5	14.4	14.3	14.2	-0.1
OECD Asia Oceania	8.1	8.1	8.0	8.0	8.0	7.9	7.8	-0.3
OECD America	25.0	25.3	25.5	25.7	25.8	25.7	25.6	0.6
OECD (total)	47.3	47.8	48.0	48.3	48.1	47.9	47.6	0.2
OPEC (The Organization of the Petroleum Exporting Countries)	9.3	9.3	9.5	9.8	9.9	10.1	10.3	1.0
Developing Countries	35.2	36.1	37.1	38.0	39	39.8	40.7	5.5
Eurasia	5.4	5.6	5.7	5.8	5.9	5.9	6.0	0.6
World (total)	**97.2**	**98.8**	**100.3**	**101.9**	**102.9**	**103.7**	**104.5**	**7.3**

Source: https://www.opec.org/opec_web/en/publications/340.htm

Oil demand at the world level is expected to go on growing over the medium-term and can reach a level of 104.5 million barrels a day (mb/d) by 2023. This is 7.3 mb/d higher than 2017 rates. The highest growing is observed in Developing Countries about 5.5 (mb/d). In some OECD (The Organisation for Economic Co-operation and Development) countries during these years on the contrary oil demand can be reduced.

These steady global growth numbers, however, mask substantial variations, as well as diverging trends, at the sectoral, regional and product levels. Long-term oil demand is expected to go up from 2017 to 2040. It can be 14.5 mb/d, rising from 97.2 mb/d in 2017 to 111.7 mb/d in 2040. However, there are different indicators during these years: reducing long-term demand in the OECD, a relatively rising to flattening oil demand pattern in Eurasia, but considerable figure belongs to Developing countries. Driven by an expanding middle class, high population growth rates and stronger economic growth potential, oil demand in Developing countries is expected to rise by more than 22 mb/d from 2017 to 2040, going up from 44.4 mb/d in 2017 to 66.6 mb/d in 2040. Another necessary observation is the steadily decelerating oil demand growth at the global level. Global growth is forecast to slow from a level of 1.6 mb/d p.a. during the beginning forecast years to 2020 to just 0.2 mb/d p.a. in the period from 2035-2040.

Table 2: Long-term oil demand (from 2017-2040) (mb/d)

	2017	**2020**	**2025**	**2030**	**2035**	**2040**	**Growth 2017-2040**
OECD	47.3	48.3	46.8	44.2	41.5	38.7	-8.7
Developing Countries and OPEC	44.4	47.8	53.1	58.1	62.6	66.6	22.2
Eurasia	5.4	5.8	6.1	6.3	6.4	6.4	1.0
World (total)	**97.2**	**101.9**	**106.0**	**108.6**	**110.5**	**111.7**	**14.5**

Source: https://www.opec.org/opec_web/en/publications/340.htm

Taking into consideration everything expressed above we can say that compared to the global economic growth rate, oil demand growth rates are low. In this regard, oil countries must ensure sustainable economic development by achieving the development of the non-oil sector.. It is also necessary to diversify the economy by effectively injecting oil revenues into the economy. From this point of view, oil revenues mainly focused on the non-oil sector will help achieve the following economic goals:

- Reduction of government budget dependence on oil revenues in the long run;
- Achieving sustainable economic growth via primarily through the development of the non-oil sector and the expansion of the non-oil industry;
- To support of socio-economic development of the regions, providing employment
- To create conditions for diversification of economy;
- Increase the share of the non-oil factor in GDP and increase the share of non-oil revenues in the state budget;
- Ensuring the application of innovative production methods in the non-oil sector and achieving fundamental structural changes in the economy;
- Increasing export potential and competitive products in the international arena

Many countries have had difficulty managing funds with rigid operational rules, as tensions have often surfaced in situations of significant exogenous changes or with shifting policy priorities. Earmarking the resources of oil funds for specific uses and allowing extra budgetary spending by the funds can complicate fiscal and asset management and reduce efficiency in the allocation of resources. Funds that finance the budget and oil-revenue management frameworks that are fully integrated with the budget process have avoided these problems. Transparency and accountability practices for funds differ across oil-producing countries. There have been growing efforts to better integrate funds with budget systems. There are several different models in the world of oil-rich countries how to use the revenues from these resources: the Nigeria and Norway models. The Nigerian Model is an unsuccessful model for the efficient use of oil revenues. In Nigeria and other countries in this group, oil revenues are largely in the interests of political powers and inefficiently used and a complex economic development dose not

happen. However Norwegian model is considered successful. Norway and the countries in this group have place among the developed countries through the efficient use of oil revenues. In general, the Norwegian model is the most successful model of oil revenues management. The country has developed oil industry - oil extraction, petrochemicals, petrochemical industry, on the one hand, significant investments in human capital. Today Norwegian prosperity has been thanks to the educated people. Almost human capital is the most important factor behind Norway's economic growth. It is also worth mentioning the success of the Norwegian model the high level of professionalism of the Fund in oil revenues management and the allocation of profits. While the impact of non-oil factors on the intentions of the Norwegian state is significant, the role of oil in this success is undeniable. Today the country shares the first place in the world rankings. There are some oil-rich countries in the world where most of the population is still in poverty. The economy is heavily dependent on oil and the stratification is extreme. However, In Norway the economy, especially exports dependent on oil, but this is not accompanied by economic problems. The country has strong human capital and dominates the middle class. The reasons for Norway's success can be summarized as follows:

- Norway has created a legal framework for this area and everything has been done under this law;
- Has made major investments in human capital development;
- Provided transparency in oil production, corruption was not allowed;
- Demonstrated professionalism in the collection and use of oil revenues;
- Oil revenues were managed at very low risk;
- He split oil revenues and the state budget. All oil revenues have been accumulated in the oil fund, the non-oil budget has been prepared, and oil revenues have been used if there is a budget deficit. No external borrowing has been made;
- Complete transparency in oil revenue management was ensured;

Norway currently has a high standard of living. Infrastructure is fully built in any area. How did Norway succeed? For this, a democratic society was established, an economic model based on science, knowledge and the welfare of the population was created (Norwegian Petroleum Directorate, Ministry of Petroleum and Energy). It should also be remembered that the main deciding factor here is the human factor. Although Norway had natural resources, this development could only have been possible thanks to its well-educated workforce. Reserve of human capital was the main force behind Norway's economic growth. Natural resources are among the secondary factors. Surprisingly, human capital can raise living standards without natural resources (as in new industrialized countries). On the other hand, without the knowledge of human capital, natural resources have little or no effect on development.

4. CONCLUSIONS

Higher oil revenues allowed oil-producing countries an opportunity to increase public spending on priority social and economic goals, which can be an appropriate response to going up oil prices. At the same time, many oil-producing countries that increased spending speedily show low indices of government effectiveness, which may raise questions about their ability to use the additional resources effectively. This also highlights the trade-offs between pressing developmental needs and the institutional ability to address these needs effectively and productively. The following basic issues need to be addressed in order to effectively use oil revenues and maintain macroeconomic stability:

- development of non-oil sector of economy, regions, small and medium business;
- protection of the environment and provision of ecological balance;
- fundamental development of infrastructure;
- The development of infrastructure sectors;

- The Oil Fund resources should initially be invested abroad only
- to implement measures for poverty reduction and solving other social problems;
- stimulating the intellectual and technological base of the economy;
- human capital development (training of highly qualified personnel and professional development of staff);
- The Fund should select the savings strategy and employ the smooth distribution;
- strengthening the country's defense capacity.

As a result, more investment in human capital in the country should be made and budget revenues should be largely secured from taxes and other revenues, as in developed countries, where the country's economy is diversified. Naturally, the development of the non-oil sector and intensive economic growth will also increase budget revenues (Philip Daniel).

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SOCIAL CAPITAL AS A DEVELOPMENT RESOURCE

Maria Udaltsova
Novosibirsk State University of Economics and Management
56 Kamenskaya Str., Novosibirsk, 630099, Russia
s.a.iljinyh@nsuem.ru

Elena Abramova
Novosibirsk State Medical University,
Krasny Prospect 52, Novosibirsk, 630091, Russia
elabr@ngs.ru

Elena Klimkina
Novosibirsk State University of Economics and Management
56 Kamenskaya Str., Novosibirsk, 630099, Russia
e.k.klimkina@nsuem.ru

ABSTRACT
The article deals with the dialectic of social development. It is shown that social development is not limited to economic growth and development of the system as a whole, it lags behind the development of the economic system, but also has its own development impulses, which are revealed in the interaction of people. It is supposed to evaluate the results of human interaction and its criterion: maximizing the usefulness of joint activities in terms of human development and social progress. As an indicator of the usefulness of social interaction, we propose such a form of its emergence as social capital. Its appearance implies trusting relationship between the participants in the interaction. Trust is considered as the value content of social capital as a development resource aimed at increasing the well-being of people. Indicators of trust and its influence on the formation of social capital are considered. An assessment of the status of social capital in Russian society and its impact on the well-being of Russian citizens is given.
Keywords: *social capital, development, trust, communications, inequality, digital inequality, well-being*

The main motives of socially
useful economic and political
live will not be profit and power, but
motive for creative service to society.
P. A. Sorokin.

The next epoch will be as it is
made by the humanity, the people who have become
subjects of the history, resourced and
purposeful, driven by morality,
rectitude and ethics.
N. V. Romanovskiy

1. INTRODUCTION

In the modern world, both in politics and in the development strategy, emphasis is placed not only on economic growth, but also on human development and human well-being [6, 8]. The lag between social development and development of the economic system is becoming more and more obvious, which actualizes an idea of irreducibility of social development to economic

growth. In this regard, the research inquiry for social development resources is also being updated. The dialectic of social development was most clearly formulated by Yu. Habermas, who justified the principles of his "theory of communicative action" [25, 33]. He notes that "in a society, in which social development is replaced by development of the system, the main line of conflicts is the gap between the "center", represented by the layers involved and interested in maintaining the economic and administrative system, ...and the "periphery", represented by those groups, whose interests are related to maintaining the lifeworld" [33, p.580]. The system of Yu. Habermas means economy and management, while the lifeworld means a real social life, where "creation of meanings, development of symbolic structures and legitimization of the system" takes place. The system should be "returned to the service of the lifeworld" in order to ensure a more comfortable life for people, their well-being, which, in turn, is revealed in the course of social interactions (by Yu. Habermas – in the course of rational communication actions). In this regard, special attention needs to be paid to finding opportunities of the social future and ways of interaction between people. In this context the criteria of evaluating the results of people's interactions are important. One of these criteria, in our opinion, may be maximization of the usefulness of human interactions in terms of human and social progress. On this basis, a certain stable system of preferences is formed, for implementation of which people enter into various interactions with the external world, with each other, i.e. they create various social communications that generate meaning. The preferences themselves, as we know, are determined through the attitude to such fundamental aspects of social life as health, prestige, comfort, goodwill, freedom, dependence, etc. And people are not always aware of the desire to maximize the usefulness of emerging communications and can not always clearly explain the reasons for persistent stereotypes in their behavior. Nevertheless, it is such communications that result in creation of interactions, which in their turn result in care, respect, responsibility, knowledge and cohesion, which are synthesized in such a phenomenon as social capital. Social capital is the ability of people to interact within the same community for common goals. This ability depends on the extent to which norms and values (that form preferences) are shared by all members of a community and how willing people are to subordinate their own interests to the interests of the community. In addition, the very concept of "capital" implies not just a certain "set" of such abilities (i.e. a certain potential), but also their effective implementation and creation of something new based on them, which in science is called an emergent effect that maximizes the usefulness of joint actions of people. The term "social capital" was introduced for the first time by the American professor J. Coleman as a response to the challenges of integrating of economic theory with sociology and political science, which was reflected in the increasing importance of the institutional environment [10]. J. Coleman used the economic principles of rational behavior (in our case, behavior that maximizes utility) in the analysis of social systems, especially in relation to education. He assumed that each actor in the joint activity controls a certain part of the resources and is interested in certain resources and events. In other words, J. Coleman identified a certain type of resource available to everyone as social capital. Thus, social capital arises when there are common interests and willingness to follow common norms in the process of interaction, which generates responsibility to others, concern for the results of joint activities. P. Bourdieu also made this emphasis in understanding the content of social capital [31]. He defined social capital as a collection of actual or potential resources associated with having strong networks of connections of more or less institutionalized relationships of mutual acquaintance and recognition. P. Bourdieu proceeded from the fundamental difference between social capital and other forms of capital, including human capital. Human capital is the property of individual subjects, whereas social capital is enclosed in a system of relations that connect many subjects, it is available as long as one or another subject remains the subject of such relations.

P. Bourdieu identified three components in the structure of social capital: "institutionalized mutual recognition relationships, social connections, and resources available through membership in social networks" [31, p. 3]. Some researchers of social interactions admit that these interactions result in emergence and explain its appearance not by social, but by psychological factors. Thus, J. Homans believed that actions always mediate social facts [26, 34]. However, E. Durkheim, T. Parsons and P. M. Blau considered the appearance of certain emergent properties not in the course of social interactions, but as inherent in the social system itself [2, 8, 15]. E. Durkheim, speaking about social solidarity, notes that it is harmed by the disorder that occurs whenever interpersonal relationships are not subject to some regulatory influence [8]. He believed that the new arises from the act of interacting with the system, rather than of people interacting with each other. P. M. Blau also spoke about this, emphasizing that "the main sociological goal of studying the processes of interpersonal interaction is to fund an understanding of developing social structures and the emergence of social forces that characterize their development" [2, p. 13].

2. RESEARCH

Obviously, the point of view that reflects the integration of structural and behavioral approaches in the analysis of social capital is very fruitful. As a result of the process of social interaction, social capital can significantly increase in the conditions of "support" from the social system and its structures. Modern society "includes" and "excludes" people through functional structures. And, as a rule, these structures exclude those who "do not meet" their requirements, do not share common interests and norms of interaction, including for reasons beyond their control. And one of these reasons is the unjustified and inexplicable by commonsense increase in social inequality, i.e. inequality of access to education, health care, employment, credit, and natural resources. It is caused by gender and group affiliation, income disparities and place of residence. It can lead (and already leads!) to negative consequences for social cohesion and the quality of institutions, which in turn weakens the potential of social capital as a development resource. Today, eight people in the world own the same wealth as the 3.6 billion people who make up the poorest half of humanity; 82% of the world's total wealth in 2018 passed to the top 1%, while the lower half of humanity has not seen any improvement at all [9, p.4, 30-33]. The above global data are also typical for Russian society. According to the world ranking of billionaires by Bloomberg, the total wealth of the 23 richest people in Russia increased by $ 38.4 billion in 2019. At the same time, 10% of Russian residents do not have enough income even for food, and 70% - for simple household appliances [6, p. 4]. The share of the Russian population living below the national poverty line is even higher than in some post-Soviet countries: in Kazakhstan-2.8%, in Belarus - 5.1%, in Russia-13.3% [7, p. 115]. Although, of course, this share in Russia in 2000 was 29.0%, in 2005 -17.8%, in 2010 -12.5% [7, p. 115]. In these conditions, the trend towards individuality rather than unity, towards maintainance of one's own well-being and self-development increases, which reduces the possibility of collective action. The focus on individual rather than collective activities of Russians is also caused by a relatively smaller difference between the total life expectancy and the duration of a healthy life (since the total life expectancy is less than in some developed countries). This difference in the USA is 10.9 years, in Sweden -10.4 years, in Russia -7.7 years [9, p. 22]. Against this social background, that is, against the background of existing social structures, Russian society is growing anxiety, irritability, even bitterness [5], which, of course, does not contribute to trust and the formation of "productive" social interactions and social capital. The dynamics of Russians' trust in social institutions, including government institutions, is shown in table 1 [18, p. 69].

Institutions	Years						The average level for the years
	2009	2010	2012	2014	2015	2016	
President of the Russian Federation	73	71	55	78	75	67	70
Government of the Russian Federation	60	57	43	56	52	40	51
Head of Region	48	45	38	48	43	31	42
Local Government	…	…	…	34	29	20	28
State Duma	29	25	24	32	32	22	27
Federation Council	31	27	24	34	30	23	28
Political Parties	13	12	15	17	17	15	15
Police, Internal Affairs Agencies	24	21	21	28	32	31	26
Press (Newspapers, Magazines)	26	31	21	3	20	27	28
TV	35	38	31	44	37	35	37
Russian Army	63	49	50	62	65	65	59
Labor Organizations	23	23	21	26	27	23	24
Judicial System	22	19	17	24	26	24	22
Orthodox Church	52	56	55	50	51	46	52
Social Agencies	41	35	37	37	34	31	36
The Average Level by Institutions	39	36	32	40	39	33	36

Table 1: Dynamics of institutional trust in Russian society

The average level of trust in institutions does not even reach 40% (except in 2014, when the issues of reunification of the Crimea were resolved), and the lowest level of trust is in those institutions that it would seem to be closer to the interests of the population: leaders of the region and the Federation Council represented by them, local governments, political parties, labor organizations, and the judicial system. Nevertheless, even in these conditions 74-84% of the population feel a connection with the country's citizens, and trust in the authorities and others is being stabilized, i.e. a new civil identity is being formed, especially among older people [5, p. 9]. We can assume that civil identity is a certain resource for uniting the Russian social space. Ethnic solidarity also works as an element of social capital, since ethnicity (as well as religious affiliation) does not significantly affect the perception of sources of threats to society. "This is a projection of the question of stability of the civilizational structure of Russia through the prism of socio-cultural and religious parameters" [5, p. 9]. Nevertheless, the above-mentioned resources of people's cohesion (civil identity, ethnic and religious solidarity) can only indirectly influence the desire for effective joint activities, since these resources are "outweighed" by the too deep stratification of society. Joint activities will be larger and more effective the more people trust themselves, institutions, authorities, and each other. Without trust, a deep understanding of the essence of social capital as a development resource is impossible. Trust makes the value content of social capital as a development resource, since it materializes in the greater effectiveness of joint activities. Many scientists have been studying the influence of the phenomenon of trust on social activity [3, 4, 11, 12, 16, 19, 20, 21, 22, 23, 27, 28, 31, 34, 35]. M. Weber in the theory of social action considered trust in the context of the social order [3], E. Erickson formulated the concept of basic trust based on the phenomenon of identity [28].

E. Fromm, recognizing the importance of trust for the disclosure of human nature, paid much attention to the loss of trust in the modern world [22, 34]. C. Marx, with whom in this matter agrees Fromm [34], noted: "Let us now assume a human as a human and his relation to the world as a human relation: in this case, you can exchange love for love, trust only for trust (highlighted by the author), etc. If you want to enjoy art, you must be an artistically educated person. If you want to influence other people, you must be a person who really stimulates and moves other people forward" [11, p. 150-151]. "Trust," says F. Fukuyama, is the expectation of the society members that other members of the community will behave more or less predictably, honestly, and with attention to the needs of others, in accordance with certain general norms" [23, p. 52]. The concept of social capital is also quite clearly reflected in his understanding of trust: "The spirit of community and economic efficiency do not exist at the expense of each other... Those who pay attention to public interests will be able to overtake all others in terms of efficiency" [23, p. 63]. A. Seligman considers trust as a principle of constructing a social order. In his view, power, domination and violence can only temporarily solve the problem of social order. In the long run, however, trust is needed [16]. E. Giddens introduced a trust typology, highlighting elementary personalized and generalized trust. He had a bond of trust, as also did E. Erickson, with self-identity and its influence on activity [4, 31]. "Elements of trust," says E. Giddens, - are a fundamental factor for the relationship between daily routine and normal manifestations. In the context of everyday life, elementary trust is expressed as "putting out of brackets" possible events or problems that, under certain circumstances, may cause concern... Trust combines interaction and activity in social life" [4, p. 15, 17]. Trusting relationships, of course, involve the definition of identity and self-identity, including taking into account the age of the subjects of joint activity [28, 31]. Impersonal relationships do not make sense, because people's perception and understanding of each other are important, which, in fact, generates trust and on its basis – social capital. Moreover, along with the communication of the subjects of joint activities, it is necessary to understand these communications. Only in this case their meanings appear, which, in turn, again contributes to the interaction and the appearance of new, emergent results. This requirement is especially important in the context of mass communication [14], since it propagates stereotypes of mass culture and myths that have a destructive effect on a person [13] and, as a result, on the formation of trust and social capital [18, 19]. These processes are now largely affected by new information and communication technologies (ICTs). These technologies cause contradictory trends in social development. On the one hand, network communities are being formed, which involve an increasing number of communication subjects, on the other – the emerging network thinking contributes, according to E. Giddens, to "eluding society", which increases the importance of direct and indirect management of socio-cultural complexity. In this regard, emerging social and humanitarian technologies are aimed at controlling public opinion and social manipulation [13]. Nevertheless, ICTs help to "link" society into a single complex and contradictory, heterogeneous community. This process stimulates social development and acts as a kind of "pass" to the future of social harmony. In this sense, ICTs are an important factor in economic and social development. Social networks, as a form of ICT development, act as a new form of interpersonal communication. It overcomes distances, and social communities become open to mutual socio-cultural interaction, mutual enrichment and integration. However, ICTs not only do not eliminate income inequality among the population, but also create new forms of inequality, primarily digital [26], which is expressed in unequal access, unequal opportunities to use the achievements of ICTs and acquire practical skills. In fact, digital inequality is expressed in monopolistic trends in the information space. The results in a social paradox: of course, the use of progressive ICTs does not strengthen or harmonize social relations, but rather destroys them and leads to a break in social cooperation, which significantly reduces the trust in society and the potential of social capital as a resource for development. This social paradox

is characteristic of the entire world community. Trust is a basic characteristic of both human and social development. Without it, the formation of social capital is quite vulnerable [20]. It is no coincidence that the world community has been studying social development indicators since 1990, introducing a very important parameter – the human development index (HDI). However, today this is no longer enough, and in addition to HDI, the UN Program Reports introduce additional characteristics of social development and well-being in society: trust, people's assessment of the quality of social structures, and recently, such subjective indicators as the "happiness index" (since 2006), the "better life index" (since 2011), etc. are being used. Surveys of sociologists in 2018, for example, in Russia showed that at least 70% of respondents feel "happy" to some extent, which does not correlate with income indicators and the standard of living in general [9, pp. 72, 73, 75]. So, people consider themselves happy if: the family and children are well and happy - 74% of respondents, peace is around, good relations with each other - 19%, there is a job, labor of love - 18%, the health of the family and their own - 12%, there are hobbies - 5% [17, p. 5]. Table 2 presents the parameters of perception of well-being and loss of HDI due to inequality [9, p. 30, 31, 33; 72, 73, 75].

Countries by HDI rating in 2018	HDI losses due to inequality (%)	Perception of individual well-being						Perception of the community		Ideas about government ans authorities	
		Quality of education (% of satisfactory)	Quality of the medical aid (% of satisfactory.)	Standard of living (% of satisfactory)	Sense of security (% of the answer «yes»)	Freedom of choice (% of satisfactory)	Index of overall life satisfaction (0 - 10)	Perception of the local labor market (% of the answer «good»)	Community (% of the answer «yes»)	Credibility of the judicial system (% of satisfactory)	Trust in the country's government (% of the answer «yes»)
Germany (5)	8.1	68	85	83	67	72	7.1	59	92	68	62
United States (13)	13,8	67	77	84	60	85	7.0	65	82	61	39
France (24)	10.3	69	77	78	68	77	6.6	17	88	59	37
Russia (49)	9.5	52	35	47	41	67	5.6	20	71	36	56
Belarus (53)	8.5	54	42	44	54	60	5.6	10	77	46	45
Kazakhstan (58)	7.9	64	56	73	62	71	5.9	35	84	55	76
China (86)	14.5	66	65	78	73	84	5.1	36	80	…	…
World at large	20.0	66	60	69	61	79	5.1	40	78	60	61

Table 2: Perception of well-being and loss due to HDI inequality in Russia, the world and some countries

3. CONCLUSION

The parameters given in table 2 give an idea of inequality as a global problem and as a background against which people perceive basic living conditions. Objective and subjective characteristics of social life mainly reflect the state of well-being of the country, its competitiveness with others, the level of trust in the country, the confidence of its individual representatives in social institutions, the state, and each other. And in general, they characterize modern humanity, its potential opportunities and losses in the field of forming social capital as a resource for development.

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CAREER GUIDANCE AS A MECHANISM FOR THE REPRODUCTION OF HUMAN CAPITAL

Svetlana Sotnikova
Novosibirsk State University of Economics and Management, Russia
s.i.sotnikova@nsuem.ru

Olga Gladkova
Novosibirsk State University of Economics and Management, Russia
o.a.gladkova@edu.nsuem.ru

Andrey Nehaev
Novosibirsk State University of Economics and Management, Russia
nai1961.08@mail.ru

ABSTRACT
In terms of modernization of Russian higher education, it is getting much more difficult for regional universities mainly focused on the interests of the regional labor market, to involve students. In this view, the cognition of the general nature and substantial causes, sources, driving forces of the processes of career guidance of young adults carried out in a regional university have become crucial. The purpose of the article is to identify the socio-economic imperatives of career guidance at a regional university as a local operator of higher education. The scientific novelty is a development of theoretical and practical imperative to shape consumer value of career guidance in higher education. The modern concept of career guidance at a regional university was explained, the concept of "value based career guidance" was interpreted by the authors and methodological tool kit to detect and evaluate anomalies in consumer values selection of the educational program was suggested.
Keywords: *Career guidance, Consumer value, Educational programme, Regional university*

1. INTRODUCTION

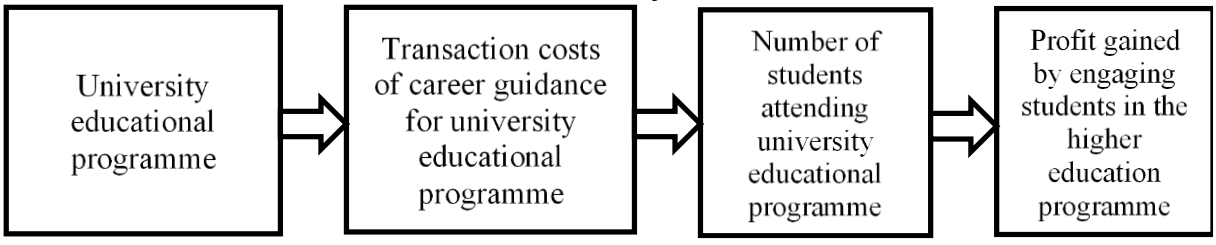
Career guidance is a set of measures that allow each able-bodied person to make a considered choice of the future based on a clear understanding of the market need for labor, as well as their needs, interests, personal characteristics and talents [Apostolov O. P., 2011, p. 4; Zudunova G. V., 2011, p. 31=34; Ford S. A., 2011, p.10-11; Kong H., Chrung C., Song H., 2012, p. 76-85]. This is an individually considered choice of the way of professional positioning in the labor market throughout their life made by a working-age individual. Backbone important social institution determining the conditions for considered and independent choice of professional future made by young adults within the market system of labor division in accordance with the particular educational situation as a whole and the values adopted in the vocational training field is an educational institution of higher education – higher school. Career guidance in higher education is an integral part of the process of occupational guidance of able-bodied individuals, to develop personal understanding of themselves as a party of professional activity [Vuor R., Zelotov H., Lempinen P., 2013, p. 24-33; Sotnikova S. I., Nemtseva Yu. V., Kozlova O. P., 2011; Valitova E., Starodubtsev V., Gorianova L., 2015, p. 739-747]. Consistent university career guidance as a system of equal interaction between students and higher education institution enables to improve the quality and efficiency of student professional positioning in the market system of labor division. Currently, higher education is characterized by tough rivalry for students amid increasing differentiation of "Russian universities in terms of amounts and sources of financial support" [Abankina I.V, Abankina T.V, Filatova L. M, 2016, p. 38 - 58].

It makes educational programs of "branded" research, federal and core universities more appealing for young people to a greater extent. In turn, it becomes much more difficult for regional universities mainly targeted at the needs of the regional labor market to engage students. "Meanwhile, regional universities in the system of Russian higher education are structure-forming both for the regions themselves and for the country as a whole" [Grinkrug L.S., Tolstoguzov P.N.]. In this regard, the research interest is focused on the development of the socio-economic imperatives of career guidance in a regional university as a local operator of higher education. The study hypothesizes that university career guidance provides the framework for shaping competitive advantages for students in regional universities based on the detection and assessment of anomalies in current and predicted consumer values to select educational university programs. Regional educational institutions implementing USS (Unified State Standard) "38.00.00 Economics and management" educational programs of higher education in the Siberian Federal district are objects of observation. The subject of the research is stable and regular socio-economic relationships that can be found in the processes of career guidance of the economic students at a regional higher school.

2. TRADITIONAL MODEL OF CAREER GUIDANCE IN UNIVERSITIES: EXPECTATIONS, ACHIEVEMENTS, ILLUSIONS

The conditions of the so-called market of universities have developed the traditional model of career guidance in the fields of higher education preparation, herewith higher education institutions greatly affect market situation of educational services, and students are forced to be more active when choosing educational programs. Career guidance appears as a set of actions related to the search and involvement of new students to the educational programs of the university. This is achieved by mass informing leavers of education schools and institutions of secondary vocational and higher education about the range of educational programs implemented by the university. Offering educational programs, universities focus more not on satisfying the labor market demand, but on the prestige and popularity among young people and their parents. It is obvious that the universities are solely targeted at the short-term benefits of career guidance. In view of this, career guidance is economically focused on gaining profit P_e by involving students into educational programmes; the implementation of those facilitates the complete employment of the scientific and educational opportunities of the university (Fig. 1).

Figure 1: The traditional model of achieving the economic goal of career guidance in a university



The profit gained by engaging students in educational programs P_e is the spread between the economic benefits of the university from the students' choice of educational programmes I_e and transaction costs of career guidance of target students C_e :

$$P_e = I_e - C_e .$$

The economic benefit of a university from the students` choice of educational programs is the income of the university as budgetary and contractual payments gained from their implementation (I_e):

$$I_e = \sum_{i=1}^{n} Q_i \times v_i$$

where: Q_i - the quantity of students attending the i-th educational program; v_i - the value of the i-th educational program; $i = (1; n)$ - the number of educational programs implemented by the university. It is not hard to understand that the economic benefits of a university received from the selection of educational programs are gained mainly by increasing the number of students Q_i and, as a result, the university's share in the educational services market.

Transaction costs of career guidance C_e can be defined as the additional time and resources that universities spend to fulfill their obligations to encourage students to select an educational program. Both divergence and uncertainty of the economic interests of university and students interaction lead to these costs. These costs include the spendings on career guidance events carried out by the university to involve students in educational programs:

$$C_e = \sum_{j=1}^{m} c_j \times K_j \times p_j$$

where: c_j – - the cost of career guidance of j-th contact (event) to involve students in educational programmes; K_j - the number of career guidance j-th contacts to involve students in educational programmes; p_j- the probability that a student will choose an educational program after career guidance j^{th} contact; $j = (1; m)$ - the type of career guidance contact.

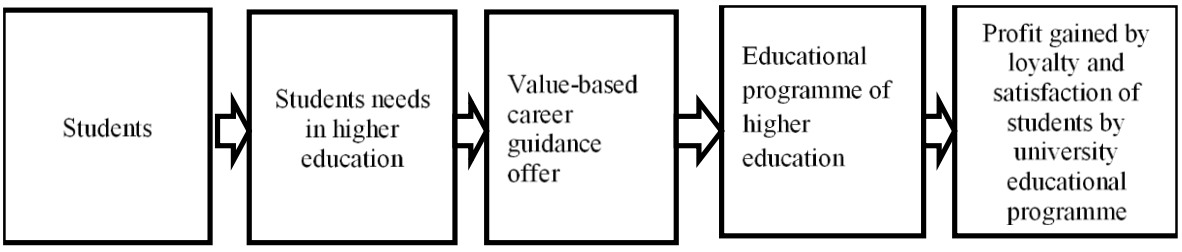
The transaction costs of career guidance are pre-contracted (ex ante), reflecting a holistic view of the stages of career guidance in engaging students in educational programs. These are the costs of professional information, marketing, consultation, selection. The professional information costs consist of the time and resources required to provide quality information on educational programs, their operators and their rankings, the minimum scores in general education subjects for applicants, the achievements of students and graduates, the educational service prices of various operators, as well as the loss of time and resources associated with the incompleteness and imperfection of the information provided. The professional marketing costs include the costs caused by the creating the target career-guided audience, i.e. those who are most likely to be interested in the educational program and select it for studying. The professional counseling costs are the resources spend to help students assess themselves in terms of profession, i.e. to realize being suitable for a particular profession, to understand and visualize themselves in it, to objectively assess compliance or incompliance with it. The costs of professional selection are the costs involved inthe selection of the most favorable training programme for a target student, and with the of competencies conformation with the minimum (threshold) exam score, passing grade for an educational program and average passing grade at a university. In fact, these costs are aimed at encouraging the student to fulfill the competition conditions for the educational program. So, the traditional target function of career guidance of the university can be formalized as follows:

$$P_e = I_e - C_e = \sum_{i=1}^{n} Q_i \times v_i - \sum_{j=1}^{m} c_j \times K_j \times p_j \rightarrow \max .$$

3. CAREER GUIDANCE MODEL IN THE CONTEXT OF MODERNIZATION OF RUSSIAN HIGHER EDUCATION: TRANSITION FROM THE UNIVERSITY MARKET TO THE MARKET OF STUDENTS

Modern socio-economic transformations of Russian education have created conditions for blurring the borders of regional (local) markets for educational services, thus, facilitating the exports expansion of educational services outside the region. The rapid growth of interregional exchanges in the field of education, as well as the expansion of export and import of educational services within the country, which determine the functioning of the national educational system are due to objective imperative of the emerging knowledge economy, the transition to an innovative development path. The export of educational services outside the region raises large-scale issues. This is the internal internationalization of universities, the creation of joint educational programs and network universities, the establishing representative offices of universities abroad, online training, the use of VR-reality technologies, etc. Students have become an object of competition not only between regions, but also between countries in terms of the reforms taking place in education, demographic shifts and the onrush of new technologies. There is a transition to the so-called market of educational services, where the supply of educational programs exceeds the demand for them, and therefore, the market situation of educational services of higher education is shaped not by universities, but by students. Students have a great influence on the development of educational services, and the universities themselves become the most active in terms of promoting educational programs. This helps to strengthen the competition of domestic universities not only for the search and attraction of talented students to their educational programs, but also for their preservation. Career guidance is being filled with new socio-economic content. It appears as a set of impacts on target and real students to shape the consumer value of the educational program as a means to fill their needs for higher education by gaining the maximum socio-economic benefit for the students themselves, the higher educational institution and society as a whole.In these terms, the economic purpose of career guidance of higher education becomes not making profit by the educational programs implementation of the university, but obtaining university economic benefit the by increasing the cooperation cycle with the students by creating the loyalty and satisfaction of target groups of students by adequate educational program. Raising a loyal student facilitates engaging new students and retaining current ones, in turn, generating long-term benefits of career guidance, future profit flows from choosing, attracting and keeping students (Fig.2).

Figure 2: Modern model of achieving the economic goal of career guidance of higher education



In these terms, the in career guidance focus shifts to making value- based career guidance offer V_e for target and current students build-up on identifying the consumer value of selecting an educational programme.

A value-based career guidance offer V_e is a set of socio-economic benefits for students by meeting their needs for higher education within a specific educational program. The meaning of this concept is that the offer and choice of an educational program in the minds of students should appeal to the values that are most common among them to involve, keep and encourage them to effectively master a particular educational program. Thus, a value-based career guidance offer creates conditions for reducing the costs of selecting, involving, and keeping target and current students, which, in turn, facilitating effectiveness increase of the educational program and the success of professional activities in the future. The value-based career guidance offer appears as the result of various types of career guidance activities of the university, which ensure gaining socio-economic benefits from professional positioning of students in the market system of labor division based on building up the competences of a particular level and scope by the development of the educational program of higher education. t is functionally dependent on the selected option of career guidance activities CG and the market situation S:

$$V_e = f(CG, S).$$

It is not hard to see that the value-based career guidance offer shows the relations that emerge between a regional university and students regarding, firstly, the cost of the educational program (V_{ei}), restricting the student's opportunity to select it, and, secondly, *its economic utility* for the student, the university and the region (V_{lc}):

$$V_e = f(V_{lc}; V_{ei})$$

The value-based career guidance offer for the student covers the set of processes and phenomena that characterize the current (V_{ei}) and predicted values (V_{lc}) of the economic effect caused by the educational program selection:

$$V_e = V_{lc} - V_{ei} \times P(t)$$

$$V_{lc} = \frac{\sum_{J=1}^{m} V_{lcj} \times P(C_{lcj})}{(1+\alpha)^j}$$

$$V_{ei} = \frac{\sum_{\lambda=1}^{n} V_{ei\lambda} \times P(C_{ei\lambda})}{(1+\alpha)^\lambda}$$

where $P(t)$ is the probability whether student will work according to the professional training obtained at the university for some time *t*. This criterion can be calculated basing on estimates of the probability of specialization employment within the market segment for professional labor as the number ratio of those who completed education programme and the employed ones within the professional segment Q_{wp} to the total number who have completed a particular educational programme Q_p:

$$(k_h = \frac{Q_{wp}}{Q_p}).$$

- $j = (1; m)$ -number of years to complete the educational program at the university; $C_{lc\,j}$ - programme cost in the j^{th} year, $\lambda = (1; n)$ - the number of work years of the educational programme graduate in accordance with the received professional training at the university;
- $P(V_{lcj})$ - the probability that the student will attend the educational program in the j^{th} year, $V_{ei\lambda}$ - economic benefit for the student of the educational program in λ - year; $P(V_{ei\lambda})$ the probability that the student will be employed in compliance with the professional training obtained at university in the λ *th -year;* α -discount rate

Making a value based career guidance offer is concerned with the transaction costs of career guidance for the higher education institution:

$$C_e = \sum_{j=1}^{m} c_j \times K_j \times p_j$$

In this case the transaction costs of career guidance include not only pre-contract (ex ante), but also post-contract (ex post) ones. These costs give a holistic view of the stages of career guidance of the university framed by ex ante ones (costs of professional information, marketing, counseling, selection) and ex post ones(costs of professional fostering and adaptation). The professional incentive costs include post-contract transaction employment of resources that create conditions for students to self-actualize their capacities in educational and extracurricular activities as parties to master a certain educational program. In this view, the educational program points a particular vector of interaction between students, educational institutions and business entities, facilitating the adjustment of the educational process to the needs of the real economy sector and shapes such knowledge, skills and abilities that create particular guarantees of "security" and demand for graduates in the labour market. Professional adaptation costs are spendings required to protect the ensured right of free choice of educational programmes of higher education by encouraging a student to qualitatively perform educational activities framed by a particular profession, maintain the consensus ideology of the o professional knowledge value, skills and experience. Benefit maximizing of an educational program selection is a target function of the student's activities in the process of selecting an educational program when resources of the student and the University are scarce:

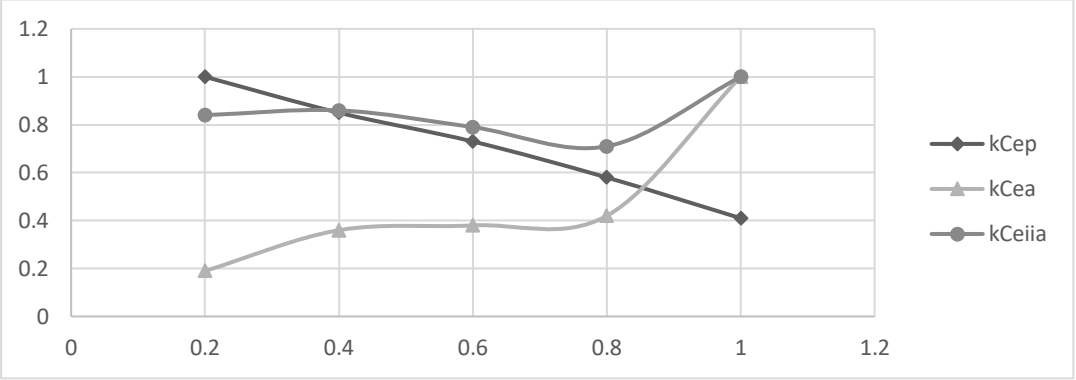
$$V_e \to \max \text{, when } C_e \prec V_{ei}$$

4. APPROACHES TO SHAPING VALUE-BASED CAREER GUIDANCE OFFER

Regional universities use two approaches to shape a value-based career guidance offer for higher education programs: diagnostic and pedagogical. The diagnostic approach is targeted at finding and involving students of strongly marked professional vocation, manifested in educational and professional achievements, for example, high scores of Unified State Examination(USE) in specialized disciplines, a prize-winner, winner or participant in specialized Olympiads and conferences of all-Russian, regional and other levels. In fact, the approach is aimed at identifying the competitive abilities of students in their professional activities.

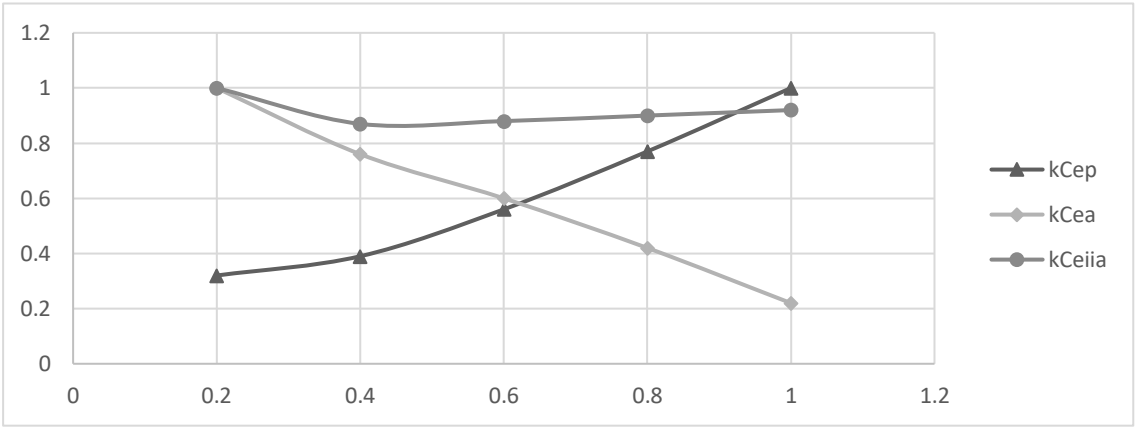
The pedagogical approach includes, basically, large scale involvement of students in educational programs of higher education without special consumer preferences to their abilities and aptitudes. This approach is based on the idea that "suitability for a profession should not be considered something once and forever established ... All people are more or less suitable for the vast majority of professions according to their inborn aptitudes" [Levitov N.D, 1926, p.87; Sotnikov N.Z., Sotnikova S.I., Mikhailova E.M., 2018, p.1302-1315]. While implementing a set of various activities of a developing nature, individual characteristics of students are improved, new missing professionally important features are acquired, compensatory mechanisms necessary for the dynamics of professional aspirations and achievements in professional activity come into effect. The curves of transaction costs to implement of diagnostic and pedagogical approaches to career guidance in higher education institutions have a similar path (figures 3, 4). Figure 3 shows that the function of transaction costs to implement the diagnostic approach is primarily associated with an increase in pre-contract (ex ante) transaction costs C_{ea} conditioned by the search, negotiations, drawing up a contract, and a decrease in post-contract costs (ex post) C_{ep} with increase of the number of students enrolled in educational program.

Figure 3: Curves of transaction costs to implement the diagnostic approach to career guidance in regional higher educational institutions (ratios)



Note: k_{Cep}, k_{Cea}, $k^{a}{}_{Cei}$ -the transaction costs ratio, respectively pre-contract, post-contract and total

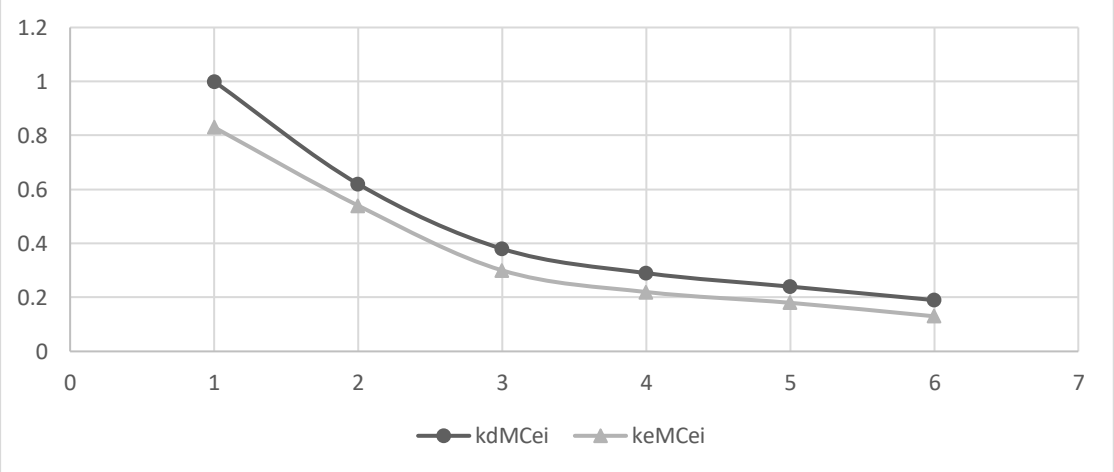
Figure 4: Transaction cost curves to implement an educational approach to career guidance in regional universities (coefficients)



Note: k_{Cep}, k_{Cea}, $k^{a}{}_{Cei}$ - the coefficient of transaction costs, respectively, pre-contract, post-contract and total

On the contrary, a function of transaction costs to implement the pedagogical approach to career guidance is characterized by increasing the number of students attending the educational programme, increase post-contractual (ex post) transaction costs C_{ep} amid declining pre-contractual (ex ante) costs C_{ea} (figure 4). The minimum value of transaction costs is achieved at the level of natural costs E_c. At this point, the party of career guidance bears the lowest possible costs, that is considered "standard". Figures 3 and 4 show that not only high, but also low levels of transaction costs may be economically less favourables for career guidance parties. Transaction costs C^t_{ei} are linearly dependent on the number of students, i.e. each additional student contributes to their additional increment on the cost of the educational program, taking into account the inflation adjustment. In this regard, depending on the year of the educational program production the curve of marginal transformational costs, appears of an increasing character. Having a close hyperbolic trajectory, the curves of marginal transaction costs to implement diagnostic and pedagogical approaches to career guidance in higher education institutions MC_{ei} tend to be high during the first year, and then decrease as the program is developed (figure 5).

Figure 5: Dynamics of marginal costs to implement diagnostic and pedagogical approaches to career guidance in higher education institution depending on the year of the educational program completion



Note: k^d_{MCei}, k^e_{MCei}, - the of marginal costs ratio to implement diagnostic and educational approaches to career guidance, respectively, in the i^{th} year of the educational program completion

At the same time, it should be noted that the marginal transaction costs of career guidance are higher, if the diagnostic approach is implemented, i.e. involving and retaining each additional student to the educational program is associated with higher costs than pedagogical. This, to a certain extent, proves that it is more profitable for universities to ensure the development and worthy use of the abilities of students in educational activities than to actively search for professionally-motivated star-students. Certainly, one should admit that if the management of higher education is concerned with the long-term well-being and marketability of national education, so higher educational institutions will be able to train competitive professionals only by actively searching for students of professional talent, developing and improving their strengths. The reality of life has proved that such universities can achieve a competitive advantage in the educational services market, turning over time into centers of national science and culture, leaving rival universities far behind.

5. THE PREDICTED VALUE OF THE ECONOMIC EFFECT OF THE EDUCATIONAL PROGRAM AND ITS DEPENDENCE ON ITS CURRENT VALUE

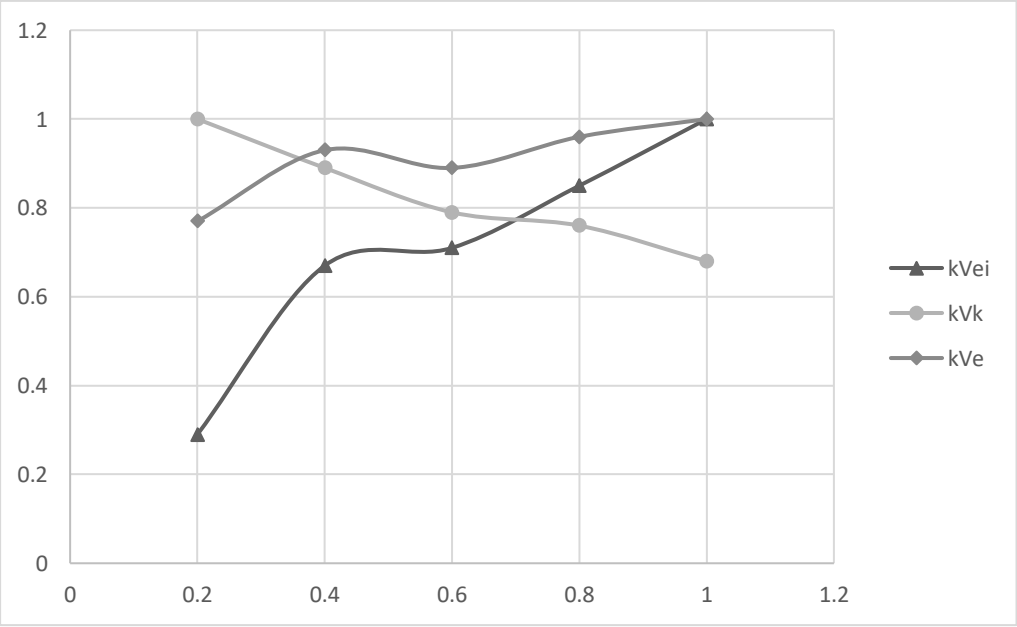
Being able to meet the alternative needs of students of professional positioning on market-based principles in the future, economic utility of educational programme is recognized in the predicted value of the economic effect of an educational program (V_{lc}). This is the entire earning capacity that the student will have, taking into account the probability that the graduate will work for a *t* time period after having graduated in accordance with the professional training received at the university:

$$V_{lc} = \Delta I_l - \Delta W \times k_h = (I^i{}_l - I^j{}_l) - (W_a - W_p) \times k_h$$

where ($\Delta I_l = I^i{}_l - I^j{}_l$) – the cost spread of i^{th} and j th alternative educational programs of higher education respectively, $I^i{}_l$ and $I^j{}_l$; ($\Delta W = W_a - W_p$)- the average pay spread within the region (country) W_a and the average pay of employees of the particular professional group W_p ; K_h - the ratio of the specialized employment in the professional labour market segment is calculated as the balance of the number of graduates of the educational program and those employed in the professional segment to the total number of those who have completed the relevant educational program Q_p : $k_h = \frac{Q_{wp}}{Q_p}$.

Theoretically, both these values: the current and the predicted ones are probabilistic, so they can be calculated as mathematical expectations of marginal costs for a given number of students and a set of particular conditions for career guidance (figure 6).

Figure 6: Dynamics of the current and expected consumer value of educational programs for USS "38.00.00 Economics and management" in regional higher education institutions depending on a year of their development (coefficients)



Note: k_{Vej}, k_{Veij}, k_{Vlcj} - coefficient of total, current and forecast consumer value of the educational program of the j-th university, respectively

It is not difficult to notice that if the number of students attending an educational program increases so its current utility increases, but its predicted utility decreases by each extra student involved. The economic feasibility of the educational program is achieved for both the student and the higher school at the curves intersection point of the current and predicted consumer values of educational programs according to USS "38.00.00 Economics and management" $(E = V_{ei} \cap V_{ec})$ (figure 6), i.e. both the university and the student gain cost advantages by implementing the educational program in accordance with its competitiveness $(V_{ei} = V_{ec})$. If more students are involved further in the educational program it will lead only to negative market consequences. In $(V_{ec} \prec E \prec V_{el})$ and $(V_{ei} \prec E \prec V_{ec})$ situations the structure of real demand for labour in the labor market is not in line with the structure of its higher education supply, the efficiency of graduates ' work decreases, their vulnerability to competition increases, the living standard declines and, as a result, the teaching level, the prestige of higher education, and the marketability of regional universities decrease. To put this differently, such an analysis of the relationship allows one to create a value-based career guidance offer for each target group of students that encourages students to complete an educational program, depending on its current and predicted consumer value, namely, star, vulnerable, acceptable and losing (table 1).

Table 1: Educational programmes segmentation according to USS "38.00.00 Economics and management" by their consumer value (in % to number of respondents)

Current value of the educational program for higher education	**Predicted value of the educational program for students**	
	Low	**High**
High	Vulnerable educational program	Star educational program
Low	Losing educational program	Acceptable educational program

Star ones are educational programs those that imposing high requirements to the university investment in career guidance, facilitate high profitability for students in the future. Vulnerable ones are educational programmes characterized by low profitability combined with high requirements to investment in career guidance (allocation of assets by the university necessary for career guidance). Acceptable educational programs feature high profitability in the future, combined with low investment requirements. Losing ones are educational programs characterized by low profitability combined with low requirements to investing in career guidance.

6. CONCLUSUION

Increasing rivalry for qualified employees in Russia objectively challenges regional universities to identify competitive advantages and vulnerable positions of their students in the labor market. This will allow to predict and simulate the value-based vocational guidance for students, taking into account favorable (entry into a new segment of the labor market, unsatisfied consumer demand in the labor force, labor diversification, etc.) and unfavorable market opportunities (reduced demand for labor, rising unemployment, falling of living standards of the working population, vulnerability to competition, unfavorable demographic situation, etc.), to implement the capital-saving nature of educational processes. Adequate solution of these issues depends on the efficiency of each student's ability to utilize their capacities for the benefit of social progress, the training quality, the education efficiency, and the competitiveness of higher education.

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INNOVATION ACTIVITY AS THE IMPERATIVE OF THE KNOWLEDGE ECONOMY

Sergey Filatov
Novosibirsk State University of Economics and Management
Novosibirsk, Kamenskaya str. 56, 630099, Russia
s.a.filatov@nsuem.ru

Natalia Sukhorukova
Novosibirsk State University of Economics and Management
Novosibirsk, Kamenskaya str. 56, 630099, Russia
snfi@mail.ru

ABSTRACT

Currently, the most developed countries of the world have taken the path of formation and development of a new type of the economic system – the knowledge-based economy, or the knowledge economy. The most significant feature of such an economic system is that knowledge is viewed not only as a strategic resource of the economy, but also as its most essential result. Therefore, the knowledge economy is characterized as the economy based on dynamic circulation of knowledge and its transformation. A crucial condition for dynamic and continuous circulation of knowledge is high innovation activity of economic entities. But in different countries, even with a similar level of economic development, the scope and effectiveness of innovation activity differ. Russia, which is striving to comply with the global trend setting ambitious goals for its economic system, is in many ways inferior to the leading countries in terms of the level and effectiveness of innovation activity of economic entities. This is evidenced by the results of domestic and foreign comparative studies of innovation activity, data from the Global Innovation Index, as well as the authors' calculations presented in the article. What determines the level of innovation activity of economic entities? What are its key factors? And what should be done in the near future to ensure the necessary level of innovation activity for sustainable and dynamic development of Russia's economy? These are the questions that the article aims to answers. It substantiates the important role of the sociocultural component of the Russian national innovation system (NIS), which brings uniqueness to every system of such a type. Besides, it also considers the concept and features of innovative culture. According to the authors, the leading role in the formation of innovative culture and the development of competencies of an innovative subject of economic activity belongs to entrepreneurial universities, which should serve as the foundation for the Russian NIS. The article analyzes Russian and foreign experience concerning the performance of such universities.

Keywords: *Entrepreneurial university, Innovation activity, Innovative culture, Knowledge economy*

1. INTRODUCTION

Changes that are currently taking place in the developed countries bring us to understanding that knowledge is becoming not only a new source of economic growth and prosperity, but also a fundamental principle of social organization. Growing importance of various functional forms of knowledge in strategic development of economy and society indicates the emergence of a new type of economy. The knowledge economy is a highly dynamic economy, which is capable of self-development and makes it possible to use all productive resources efficiently through circulation of knowledge at both macro and micro levels. As the knowledge economy is developing, technological innovations and the general level of innovation activity become a

determining factor for sustainable economic growth and global competitiveness of both national economy as a whole and its individual entities. For Russia, which is striving to comply with the trend of modern socio-economic development, the formation of the competitive innovative economy is a strategic goal. National goals, achievement of which is directly related to change of the domestic economy towards innovative development, are to accelerate technological development, create a highly efficient export-oriented sector in basic industries that would develop on the basis of modern technologies, and consequently, put Russia on the list of five largest economies in the world. However, at present, the scope, outcomes and effectiveness of innovation activity of Russian economic entities do not meet the declared goals, which makes it necessary to analyze the level, effectiveness and factors of innovation activity of economic entities, as well as to identify ways for activation of such activity with respect to Russian sociocultural conditions.

2. ANALYSIS OF THE LEVEL, EFFECTIVENESS AND FACTORS OF INNOVATION ACTIVITY OF ECONOMIC ENTITIES

The share of innovative goods and services in the total volume of shipped goods and performed work and services in Russia amounted only to 6.5% in 2018, which puts Russia's economy into the 24th position among a number of ranked EU countries [5]. The lower positions are taken by Poland, Bulgaria, Luxembourg, and Romania. By comparison, in the European countries that are the leaders in the share of innovative products in the total volume of shipped goods, performed work and services this indicator amounted to 20.3% in Slovakia, 19.3% in Spain, 17% in Ireland, 15.5% in Great Britain, and 14% in Germany. Russian manufacturers showed a very low cumulative level of innovation activity. Only 8.5% of the organizations under consideration carried out innovation activities of all types (technological, marketing, organizational), or of certain types (combinations). This indicator is comparable to some extent to Romania (10.2%). But for the majority of the countries it is much higher: Canada – 79.3%, Switzerland – 72.6%, India – 63.7%, China – 37.1% [9]. When analyzing innovation activity in Russia, one cannot but note its rather low effectiveness. Table 1 contains data that can be used to evaluate effectiveness of innovation activity in certain types of economic activities. The cost of innovation and the volume of innovative goods, works and services are given in constant prices for the year of 1995, which allowed us to determine the dynamics of effective use of innovative resources correctly.

Table 1: Effectiveness of innovation in various types of economic activity (Calculated in accordance with indicators of innovation activity [9])

Types of economic activity	Cost of innovation, million rubles (at 1995 value)		Volume of innovative goods, works and services, million rubles (at 1995 value)		Innovation Efficiency Ratio (IER)	
	2007 г.	2017 г.	2007 г.	2017 г.	2007 г.	2017 г.
Industrial production	15650,9	27183,9	67309,7	107970,4	4,3	3,97
Telecommunication activities; computer software development; consulting services in this area and other accompanying services; information technology activities	1940,0	1763,0	2870,5	3529,8	1,48	2
Construction	-	6,2	-	4,9	-	0,79
Agriculture	-	505,8	-	902,5	-	1,78

Innovation efficiency ratio (IER) is calculated by the formula:

IER = VIG / CI,

where VIG is the volume of innovative goods, works and services (rubles), and CI – the cost of innovation (rubles).

IER shows output for innovation input of 1 ruble. As can be seen from table 1, in 2017 in Russian industrial production 1 ruble of innovation input accounted for 3.97 rubles of innovation output, which by European standards, is a very low indicator of the effectiveness of innovation activity. By the number of innovative products per a given amount of innovation input, Russia is inferior to almost all European countries. Moreover, over the 10-year period (2007-2017) the efficiency of using innovative resources in Russian industry decreased by 7.7%. In the field of telecommunications and information technology the effectiveness of innovation activity is even lower: in 2017 1 ruble of innovation input was worth 2 rubles of innovation output. Over the 10-year period, the effectiveness of using innovative resources in this field increased by 35%. In agriculture, each ruble of innovation input brought 1.78 rubles of innovative goods, work and services, while in construction a ruble of innovation input accounted for only 0.79 rubles of innovation output. What is the reason for such low innovation activity of Russian economic entities? According to the survey conducted among leaders of some Russian organizations, the main reasons restraining innovation activity are: lack of own funds (this factor was mentioned by 17.5% of respondents); high cost of innovation (16.5%); low demand (4.9%); lack of qualified personnel (3.5%); underdevelopment of cooperative ties (1.8%) [9]. The results of the survey show that the human factor as a problem area in innovation activity is not outlined, although it is partially reflected in the indicator "lack of qualified personnel". Some researchers consider low demand for innovations, especially technological, to be the key problem of innovation activity in Russia, they note that there exists an "excessive swing towards the purchase of finished equipment abroad to the detriment of the implementation of new domestic developments" [6, p. 22]. In our opinion, a broader approach to the analysis of factors affecting innovation activity is needed. In this regard, we addressed the Global Innovation Index 2019 Report (GII 2019), which contains data from the comparative analysis of innovation systems in 129 countries and ranking of these countries according to the level of innovative development. The GII 2019 ranking is based on indicators calculated as the average of two sub-indices: the Innovation Input and the Innovation Output. The first sub-index allows assessing of an innovation ecosystem in five pillars: Institutions, Human Capital and Research, Infrastructure, Market Sophistication, and Business Sophistication. The second sub-index captures factual evidence of innovation results: Knowledge and Technology Outputs, and Creative Outputs. In the overall GII 2019 Russia took the 46th position, retaining it at the level of 2018. However, the Innovation Input sub-index has improved from the 43rd position in 2018 to the 41st position in 2019. By the second sub-index Russia's position has fallen from the 56th in 2018 to the 59th in 2019 [18]. Among the factors contributing to the growth of innovation activity in Russia, human capital (enrollment in higher education, teacher-student ratio in secondary education, science and engineering graduates) should be emphasized. By this indicator Russia takes the 23rd position in the GII 2019 ranking. Indicators that negatively affect Russia's overall innovation performance include Institutions (74th position) and Infrastructure (62nd position). Despite the fact that Russia managed to improve its position in the GII ranking (49th position in 2014, 48th position in 2015, and 46th position in 2019), the overall dynamics is characterized by instability and a slowdown in the growth rate of innovation indicators as compared to developed and rapidly developing countries. In this regard, it makes sense to look at the Russian innovation system through the development patterns of two types

of technological capabilities: the design capability and the implementation capability [13]. The design capability is characterized, first of all, by the ability to create novel concept designs and assumes the presence of creativity and practice-oriented educational system; developed venture financing mechanism; large-scale entrepreneurial activity based on trial and error; effective training system; developed market of mergers and acquisitions, which stimulates new combinations. The implementation capability is understood as the ability of the system to implement an existing concept design using mainly codified knowledge and providing relevant staff training. Various types of national innovative systems, which are based on the design capability, share one common goal: to support creative imagination, innovative networks and accumulation of trial and error experience for further development of the design capability. In the long run, these three components form a synergistic effect as a result of positive feedback, provide continuous innovative development and serve as an effective mechanism for breaking the middle-income trap. The term "middle-income trap" was introduced to refer to the phenomenon of a slowdown in the economic growth of the countries that have reached an average income. The standard explanation for this phenomenon is based on the Lewis development model. And in the sociocultural approach to innovation, the middle-income trap is viewed as the inability of the innovation system to transform the implementation capability into the design capability [13]. For Russia, which according to the GII 2019, belongs to the group of countries with the level of GDP per capita above the average [8], it is essential not to limit itself to only the implementation capability, but also to increase the design capability systematically. For this, the development of human capital is strategically important. In this regard, it should be noted that planned processes are affected by contingencies, such as sociocultural factors of innovation activity, significance of the value-motivational component of innovation activity, and the ability to introduce innovations successfully in the conditions of market economy. Mass flow of innovation should be supported by relevant scientific, educational and sociocultural base [18]. Today, scientific community is coming to understanding that the key to successful innovation activity lies in the use of peculiarities of socio-cultural environment, as well as in integration of certain components of national culture into the mechanisms of innovation activity, which ensures the uniqueness of the innovation system of a society. But this problem also has a flip side. Some of already existing traditional components of culture can be a serious obstacle to productive innovation activity. Thus, the mindset that was formed in the Soviet times is a significant barrier to intensification of innovation activity in the Russian innovation system [10]. It is this circumstance that can explain that even in case when institutional and infrastructural conditions are provided for innovation activity, its level can remain rather low. In connection with the changes in sociocultural foundations of innovation activity, and the problems of innovative development of Russia's economy, it is necessary to pay attention to the concept of an "innovative person", more precisely, the competencies that are needed for innovative development. According to an expert survey among participants of the Russian innovation market, which was conducted in 2014-2015, the least developed competencies of the Russian innovative person are ability and willingness to take reasonable risks, creativity and enterprise, ability to work independently, willingness to work in a team and in a highly competitive environment. Moreover, according to the experts, these competencies are becoming scarce year by year (42% of the experts identified these competencies as the least developed in 2014, while in 2015 there were 51% of them). The experts consider knowledge of foreign languages to be a noticeable shift in terms of building up innovative potential of Russians. They claim that ability to critical thinking, as well as willingness to continue education and improve professional skills remain at the same level [15]. The analysis of innovation activity of the entities of Russia's economy, and in particular, the level, factors and conditions determining it, brings us to the conclusion that in current conditions a very significant role in effective functioning and development of Russian

innovation system is given to higher educational institutions, first of all, to universities. The priority mission of universities is, firstly, to become basic institutions for production and concentration of knowledge, ensuring its generation, update, dissemination and application in the process of educational and research activities. Secondly, academic environment of universities becomes a platform for development of innovative potential of future graduates. However, it should be emphasized that this requires quality transformations of universities, rethinking of the strategies they implement, and strengthening of innovative and entrepreneurial components in their activities.

3. ENTREPRENEURIAL UNIVERSITY

The formation of entrepreneurial universities in Russia, in our opinion, plays a crucial role in the process of transformation of the economic system towards the modern model, which is the knowledge economy. Despite the fact that the concept of the entrepreneurial university is widely used in scientific community, there is still no common definition of it. The concept of the entrepreneurial university was originally introduced in the paper of the American researcher B. Clark, who claimed that a university can fulfil an entrepreneurial function along with educational and research ones. The fulfilment of these functions gives a synergistic effect, strengthening the role of the university in local and national innovation systems [4]. Fundamental changes of universities across the world are also analyzed by J. Wissem. In his opinion, we witness the transformation of the university focused on the interests of science (university 2.0) into a third-generation model (university 3.0). This process becomes inevitable for several reasons: considerations on the quality of education as a result of the massive influx of students into universities since the 1960s; inability to manage universities in the traditional way due to increased number of students and strong subsequent dependence on the state; globalization, which has impact on universities and leads to competition for the best students, teachers, and the most attractive research contracts; increased role of interdisciplinary research and subsequent conflict with the traditional organization of universities based on faculties; increased cost of advanced research, etc. The goal of a third-generation university is to make profit on its know-how as such universities, along with their traditional research and educational activities, are believed to be the cradle of the new entrepreneurial activity [19]. In accordance with the increased role of entrepreneurial universities in the knowledge economy, a number of authors identify their basic institutional functions as being intermediaries and gatekeepers in local innovation systems [7]. Entrepreneurial strategies of universities are implemented in two main areas: entrepreneurial education, aimed at development of entrepreneurial spirit among students and graduates; and entrepreneurial activity, which consists in creation of university startups, spinoffs, intellectual property, implementation of joint scientific projects, etc. [17]. Entrepreneurial education is realized through various training formats, such as single courses and programs, as well as full-time bachelor and master programs. Entrepreneurial education, as foreign experience shows, should be incorporated into the coherent system of institutions, norms and actors which collectively form the entrepreneurial ecosystem of a university [14]. Some experts define the essence of the educational component of an entrepreneurial university by pointing at various formats of entrepreneurial courses, extracurricular activities developing business competencies and discussions for different audiences [11]. Russian scientific community defines the entrepreneurial university as a university that "systematically makes efforts to cope with constraints in three areas – knowledge generation, teaching and transformation of knowledge into practice – by initiating new activities, transforming internal environment and modifying interactions with external environment" [12, p. 55]. Since the mid-2000s, Russia has been implementing a series of measures to enhance the role of universities in national and regional innovation systems. Thus, firstly, federal and national research universities have been created on the basis of the existing universities, and, secondly, since

2013 the 5-100 project has been implemented. These measures are already producing positive results. The Times Higher Education World University Rankings 2020, which has 1300 universities across 92 countries on the list, includes 39 Russian universities. The top three Russian universities among them are: Moscow State University (189th position, which is 10 positions higher compared to the previous year; besides, it takes the 23rd position for the quality of education); Moscow Institute of Physics and Technology (201st-250th positions, the university is a participant in the 5-100 project); Higher School of Economics (251st-300th positions, the university is a participant in the 5-100 project). The top 500 universities include Moscow Engineering Physics Institute and Saint Petersburg National Research University of Information Technology, Mechanics and Optics (401st-500th positions). South Ural State University in Chelyabinsk has become a newcomer in this ranking, having entered the 1000+ category [21]. At present, Russian universities are testing various forms and schemes of educational, research and production integration within the framework of the entrepreneurial university model. However, evaluating the effectiveness of the changes, a number of authors note that these transformations are just at the initial stage and so far cover only Russia's leading universities located in Moscow and large cities. Today, the structure of such universities includes the research component, still, its development takes place mainly due to the creation of innovative infrastructure rather than changes in the training programs or involvement of students into research projects [1]. In early 2017, Novosibirsk State University of Economics and Management (NSUEM) adopted a new development strategy. Its main goal is to turn NSUEM into a leading university in the field of regional development based on the concept of the entrepreneurial university. The strategy states the following key characteristics of the entrepreneurial university: it proclaims the values of entrepreneurship, entrepreneurial way of thinking and entrepreneurial activity; it provides knowledge and develops skills conducive to development of entrepreneurial thinking; it forms the ecosystem of entrepreneurship inside and outside the university as it serves as the center of attraction for entrepreneurial issues; it fosters communication between business, education and science, contributing to the development of innovative entrepreneurship and ensuring transfer of knowledge and results of research activities into external environment; it makes corresponding internal changes in management and personnel policy; it facilitates the entrepreneurial component in educational, scientific, innovative and other types of activities. Such a model of university was chosen as the most advantageous for a developing regional university due to a number of factors: long-standing reputation of the university as an economic one (entrepreneurship is closely related to economy); reduction in budgetary financing and the need to find alternative funding; compliance with the requirements of the upcoming economic development in the conditions of VUCA (volatility, uncertainty, complexity, and ambiguity). The university's goal is seen in the development of such competencies among students of any educational program that are in demand in innovative economy and will also contribute to the development of innovative entrepreneurship in Novosibirsk and Siberia [16]. The concept of entrepreneurial education is based on the identification of over-professional competencies (soft skills) that are required in innovative systems. Most common of them are: integrated problem-solving skills, social and behavioral skills (teamwork), combination of skills that determine adaptive capacity (logical thinking and self-confidence), etc. [2]. Other professional skills, which are gaining high importance include ability to start business from scratch (bootstrapping), leadership, etc. [3]. In our opinion, a particular attention should be given to the typology that includes cognitive, social, and activity-oriented competencies [20]. If the number of participants is significant, entrepreneurial education provides the so-called "entrepreneurial funnel" that attracts entrepreneurs into the ecosystem, regardless of the effectiveness of their activities. The most successful participants get profit and invest in new enterprises, while those who are less successful retain their motivation and get involved in the innovation process in the next curve

of the business cycle [22]. Development of innovative culture in educational environment of the university through entrepreneurial education encourages students to overcome their fear of entrepreneurship and failure, which is essential for promotion of innovation activity. Studies on entrepreneurial education in Russia show that it corresponds neither to global trends in this area nor to the growing share of the entrepreneurial sector. Besides, it is characterized by very slow dynamics. The transition of Russian universities to the competency-based model of education, which started about ten years ago, is not supported by a comprehensive study of competencies in terms of their structure or mechanisms of their transformation. Moreover, there is deficit of approaches to development of such models of competencies that would accommodate both interests of all entities of the entrepreneurial ecosystem and regional sociocultural factors [20].

4. CONCLUSION

As the knowledge economy is developing, technological innovations and the general level of innovation activity become a determining factor for sustainable economic growth and global competitiveness of both national economy and its individual entities. The analysis of domestic and foreign comparative studies on the innovation activity of economic entities, data from the Global Innovation Index, as well as the authors' calculations presented in the article indicate that at present Russia is in many ways inferior to the leading countries in terms of innovation activity of economic entities and the effectiveness of innovation activities. Identifying reasons for the low level of innovation activity in the country, one should not only rely on economic factors, but also consider socio-cultural foundations of the national innovation system and the value-motivational component of innovation processes. An important condition for effective performance of innovative systems is the adequate level and coherent sociocultural characteristics of human capital. Mass flow of innovation should be based on relevant scientific, educational and sociocultural environment. A significant role in effective performance and development of the domestic innovation system is given to universities, which turn not only into the main institution for production and commercialization of knowledge, but also into the platform for development of innovative potential of future graduates. Russian universities seek for qualitative transformations and new development strategies which could strengthen innovative and entrepreneurial components in their performance. Currently, a number of Russian universities are testing various forms and schemes of educational, research and production integration, but these transformations are at the initial stage and so far cover a limited number of universities. In this regard, it is necessary to study the existing practices of entrepreneurial education, which reflect socio-cultural and regional specifics, and to disseminate successful versions of the entrepreneurial university model.

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CAREER STRATEGIES AND ETHICAL VALUES OF ATTORNEY'S: CURRENT TRENDS

Svetlana Ilynykh
Novosibirsk state University of Economics and Management, Russia
ili.sa@mail.ru

Arina Pelykh
Novosibirsk State University of Economics and Management, Russia
7546411@mail.ru

ABSTRACT

In the article authors justify the need to study the Russian legal community from the position of building their career strategies. Authors show that the main reason for the lack of knowledge of attorneys activities in this context is the closeness of this group. It's important to research attorney communities within the framework of the concept of professionalism. Russian attorneys don't obey the logic of the market or the logic of the bureaucracy. Interest in the work of attorneys in sociology is dictated by the fact that they are more than any other group between the choice of personal benefit and professional ethics or professional responsibility. The status of attorney imposes certain restrictions on the lawyer, as well as certain procedural advantages in comparison with a private lawyer. Traditionally, public opinion views attorneys as professionals in their field. From the point of view of professionalism, the attorneys community is extremely heterogeneous. The article considers several types of attorneys. The authors show that there are «idealists» at one pole and «individualists» at the other. There are several other types between them. If the group of «idealists» is important to have a high reputation capital in the professional community and a high status in the law enforcement system as a whole, then the group of «individualists» does not need to have a high reputation in the professional attorney's community. Based on empirical research, it's shown that Russian attorneys often make a choice in favor of professional responsibility, rather than in favor of their financial benefits. The attorneys ethical attitude to the client is always beneficial for the lawyer himself. Attorneys are guided by such non-economic reasons as professional satisfaction, which can be interpreted from the position of maximizing benefits. The article also presents the results of a qualitative study.

Keywords: *attorney, attorneys community, professional ethics, professional responsibility, financial benefit*

1. INTRODUCTION

All aspects of social life are regulated by formalized legal norms. To administer this order, a separate professional group of lawyers functions in the society, the study of which is quite a complex event for sociologists. The study of the attorneys community as representatives of a socio-professional group is practically not presented in the framework of sociology. There are several reasons for this. First, the study of attorneys in the sociological tradition is mainly carried out «from the outside». This approach is the opposite of traditional legal dogma, which focuses on legal doctrines and texts of laws. Jurisprudence operates with ideal constructions and logic of legal norms, assuming that these norms are implemented in the behavior of participants without distortions, and if there are distortions, it is either the result of unclear, contradictory wording, or poor control (Volkov 2017). In sociology, empirical analysis is based on observing the actual behavior of people who apply the law, as well as acting in defense of the accused. The researcher studies the activities of attorneys outside their professional environment.

Secondly, the main reason for the lack of knowledge of attorneys activities in sociology is that they are to a certain extent a closed professional group. Access to it for research is largely limited. This is determined by the privileged status of attorneys in the legal community. Primarily, the legal community is analyzed within the framework of legal sciences, which is quite natural. In addition, attorneys communities don't belong to either state authorities or law enforcement agencies. But, nevertheless, the features of the attorneys activity, as well as the portrait of a professional, including personal characteristics, are of great interest to sociology. The activities of representatives of the legal sphere are rarely studied by sociologists. An exception is the sociological study of Russian judges (Volkov Dmitrieva Pozdnyakov Titaev 2012). Lawyer communities, like any other legal communities, are studied within the framework of the concept of professionalism (Korzun Yakovlev 2014). Here, the main focus is not the logic of the market (as in business organizations), not the logic of the bureaucracy (as in government organizations, but the so-called third logic». This idea is held by E. Fridson (Freidson 2001). The purpose of legal communities is to find a balance between the tasks of the market and the bureaucracy. As A. P. Korzun and A. A. Yakovlev point out, in sociological knowledge, the activity of lawyers is interpreted in terms of a «contract» that is formed between society and the professional community. According to this «agreement», the society confers high status regalia, including a privileged position, and the professional community is obliged to observe professional ethics. This approach is presented in Evetts (Evetts 2003: 400). As suggested by M. Saks, the need for this «contract» is caused by the fact that both society and the professional community do not have the ability to fully control the quality of professional work (Saks 1995). From our point of view, the interest in the work of attorneys in sociology is also dictated by the fact that they, like no other group, have two ways of development when choosing a career strategy. The first is to remain a member of the bar chamber and continue your career growth within the bar community. The second is to refuse membership in the bar and choose the potential status of a judge, lawyer in the public sector, or commercial sector. Here you can also develop your own business. In other words, lawyers can choose the career strategy of a lawyer or lawyer. At the same time, it is interesting that in each of these strategies, the lawyer can be put in a situation of choosing personal gain or professional ethics, professional responsibility. The situation when attorney is faced with a dichotomous choice is presented in the work of A.V. Akopyan, dedicated to managing the process of forming the professional identity of attorneys. The author points out that the activity of attorneys is at the intersection of interests, rights and freedoms. To get their winnings, the client is often ready to abandon moral and ethical principles. Attorneys can associate with the client, protecting him. A. V. Akopyan points out that if attorney refuses ethical grounds, he has more opportunities to show true loyalty to the client's interests (Akopyan 2009:19). Verification of personal benefit or professional ethics in the second variant of career strategy development, when attorney leaves the bar and becomes a lawyer, doesn't have an empirical test in Russian practice. There is some information from foreign authors, according to which private lawyers and lawyers in commercial companies are likely to be closer to the logic of the market and will act in terms of maximizing benefits (Johnson 1981).

2. RESEARCH METHODOLOGY

The ethical principles of current attorneys were studied by the Institute for enterprise and market analysis of the higher school of Economics and the Institute for law enforcement at the European University in Saint Petersburg (Kazun 2006, 2014). The study was conducted from October to December 2014. A questionnaire survey was used as the main method. In a sample of 35 regions of Russia, 3,317 attorneys were interviewed. Russian attorneys as a professional community are certainly heterogeneous. Researchers have suggested that there is a correlation between ethical values and attitudes towards the need for a strong professional Association.

These studies have shown that members of the legal community with a higher level of ethical standards are more likely to share the idea of the need for a strong professional Association. A strong professional association can be a marker. For a attorney focused on personal profit, such an association, on the contrary, can become an obstacle, since it can generate additional signals about the quality of services (develop professional standards, create «black lists» of unscrupulous agents and low-quality universities that train lawyers, monitor compliance with ethics, etc.). Based on the cluster analysis, the Researchers divided attorneys into three groups, which received the following conventional names: «reputation-oriented», «owners of a skeptical view of the profession» and «benefit-oriented» (table 1).

Table 1: Description of lawyer clusters (%)

Statement of values	Focus on reputation	Skepticism	Focus on the benefits
"If my professional colleague regularly violates professional ethical standards, then I would prefer not to work with him"	92	99	33
"The legal profession in Russia is a model of honest, law-abiding and ethical professional behavior"	94	13	57
"The opinion of colleagues about their professional competence is of great importance for a lawyer"	83	64	32
"I'm ready to give up my chosen profession if I find a job with a higher salary, but not in my specialty"	10	20	63
"An honest lawyer will not be able to make a career working in state bodies"	22	47	18
"In criminal proceedings, the verdict is important, not the establishment of the truth "	39	50	43
" Russians who don't have a legal education often treat lawyers with distrust "	50	70	45
"A private lawyer should first think about their income, and only then about the client's benefit "	10	12	30
" A lawyer should treat all clients equally, regardless of their financial status, social status, education, etc."	99	70	63

We can see that representatives of the «reputation-oriented» cluster in 92% of cases will prefer to refuse to cooperate with an unethical colleague. 94% of these attorneyss believe that the lawyer acts as a model of professional and ethical behavior. Representatives of the same cluster are 99% of the time convinced that a lawyer should treat all clients equally, regardless of their financial situation. This category of lawyers strongly supports the idea of creating a strong professional Association. At the same time, attorneys of the «skeptical view of the profession» cluster also show a demand for collective action much more often than those who are focused on personal gain. For them, the association can also be an opportunity to correct the current situation and restore the prestige of the profession. In 64% of cases, representatives of this cluster believe that the opinion of colleagues about their professional competence is of great importance for a lawyer. They also believe that the population doesn't trust lawyers (70%), in criminal proceedings, the verdict is more important than the truth (50%), and an honest lawyer will not be able to make a career in state bodies (47%). Only 13% of this group of attorneys consider the legal profession to be a model of honest, law-abiding and ethical professional behavior. Here, as we can see, there is a combination of idealism and negativism. Thus, it can be argued that there is a certain «core» in the legal community that shares ethical values and imposes an increased demand for collective action, as well as the presence of a group of attorneys who can potentially join the work of such an association. Lawyers who are focused on personal gain and are ready to leave the profession if there is a more favorable opportunity are significantly less likely to take collective action. 64% of this cluster agreed with the statement «I am ready to give up my chosen profession if I find a job with a higher salary level,

but not in the specialty». For them, membership in the association can only be interesting in terms of obtaining additional status. A. Kahun, E. Khodzhayeva, and A. Yakovlev, presenting this study later, identified another cluster of Respondent attorneys, eventually obtaining four clusters (Kahun Khodzhayeva Yakovlev 2015: 53).

1) «Idealists». They are the most dedicated group of professionals to the profession, because they value a high reputation capital in the professional community and a high status in the law enforcement system as a whole. This is precisely the reason why «idealists» will not act as a defender for a person with a criminal reputation. The idealistic orientation also points to the fact that it is difficult for them to leave the profession in order to get a more profitable job.
2) «Pragmatists». For this group of lawyers, the professional community is less of a guide. It's indicative of their opinion that it's difficult to remain honest while working in the existing human rights system. This group of lawyers has a willingness to protect criminals. They tend to use «loopholes» in the laws, can focus on the official document, avoiding the search for the truth.
3) «Skeptics». A distinctive feature of this group of attorneys is their criticism of the state of the law enforcement system and the state of the legal community. This group of lawyers is characterized by a lack of readiness to protect people with a criminal reputation. It is significant that they also do not seek personal gain in the profession.
4) «Individualists». This group of attorneys doesn't need to have a high reputation in the professional legal community. This is evidenced by the opinion of 6% of respondents that they care about the opinion of colleagues. But the peculiarity of this group is that they do not criticize the human rights system.

Based on questions about professional ethics, the typology of lawyers received the following theoretical generalization (table 2).

Table 2: Typology of counsel in accordance with the research related to professional ethics

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

Thus, the following distribution was received in response to the question «Professional lawyer should first think about his income, and only then about the client's benefit»: «idealists» - 0%, «pragmatists» - 9%, «skeptics» - 0%, «individualists» - 5%. However, it seems to us that they are more focused on professionalism and professional responsibility. This is partly because they have a long career path to follow (table 3).

Table 3: Ethical attitudes and previous work experience

Came to the attorney bar …	Idealists	Pragmatists	Skeptics	Individualists
Right after graduation	29%	27%	21%	23%
From the court	37%	22%	25%	16%
After working in law enforcement	33%	28%	20%	19%
From the commercial sphere	31%	23%	23%	23%
After working in law enforcement and commercial	28%	31%	25%	17%

As we can see, the share of «pragmatists» is higher among lawyers who have experience both in law enforcement agencies and in a commercial company. In other cases, «idealists» are more often represented, although in the case of lawyers who worked before joining the bar in court, this group is especially large (37%). «Individualists» either don't have a lot of work experience, having come right after high school, or before that they work as lawyers in the commercial sphere. These figures clearly demonstrate that lawyers most often already had legal experience that allowed them to practice law.

3. RESEARCH FINDINGS

But not only this circumstance allows us to speak about the priority of professional responsibility in the activities of lawyers. It seems to us that the peculiarities of the Russian mentality, which is more or less focused on justice, are of no small importance. The results of qualitative research show that Russian attorneys do not always make a choice in favor of their own benefit, but in favor of professional responsibility. Here is a part of the expert interview conducted by the author in September 2019. The experts were 3 attorneys working in Novosibirsk. Requirements for experts: membership in the Bar chamber, experience as attorney – at least 5 years. When asked to give the most memorable examples from his law practice, one of the experts noted: «The sphere of activity of attorney today is much broader than formal powers. You often focus your clients on a negotiation strategy. This is not always profitable for attorney himself, even from a financial point of view. But, nevertheless, you justify that it is more correct to agree and find compromises than to focus on court decisions. This is the right decision even in the most strained relationships with contractors. In other words the lawyer acts as a mediator» (A., 5 years of experience as a lawyer). As we can see, the main focus is not financial gain, but the client's orientation on building lost positive relationships. This is also the protection of the client's interests, but from the point of view of ethical expediency. In this case, the attorneys 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 lawyer to the client is always beneficial for the lawyer himself. The work of E. Johnson (Johnson 1981) suggests that attorneys are guided by such non-economic motives as professional satisfaction. The latter, according to R.Dinovitzer, B. Garth (Dinovitzer Garth 2007) can be interpreted from the position of maximizing benefits. So, in the context of sociology, compliance with the professional ethics of attorney brings him professional satisfaction, which can be viewed in terms of maximizing non-economic benefits. Finally, let's look at the lawyer's activities from the perspective of social roles. Like any other individual, attorney is a simultaneous carrier and performer of many social roles. So, M. Wilkinson points out that as a lawyer as a professional figure, there is a combination of several roles - student, teacher and researcher (Wilkinson 2001:270). The specifics of the attorneys role is that, as we have already pointed out above, he must perform his professional roles in relation to the client, which may go against the moral and ethical component of his activities. In addition, moral norms and the law may contradict each other. All this allows us to say that as a carrier of different roles, the attorneys is more than other carriers of roles in a situation of conflict of roles, role tension. The choice of a particular role is left to the attorney.

4. CONCLUSION

Sum up. Evaluation of the attorneys activity in line with the sociological approach suggests that the legal community is quite closed. It is not uniform. The attorney is more often focused 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 the attorney to the client is always beneficial for the lawyer himself.

However, it is worth noting that there is a clear lack of knowledge of the legal community. So far, not only professional identification, but also value-normative issues remain outside the scope of sociological research.

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DEVELOPMENT OF A MODEL OF FOREIGN STUDENTS' STUDYING IN RUSSIAN UNIVERSITIES ADAPTATION LEVEL ESTIMATION

Ludmila Nikiforova
Novosibirsk State University of Economics and Management
Novosibirsk, Kamenskaya str. 56, 630090, Russia
l.e.nikiforova@nsuem.ru

Svetlana Petukhova
Novosibirsk State University of Economics and Management
Novosibirsk, Kamenskaya str. 56, 630090, Russia
s.v.petuhova@edu.nsuem.ru

ABSTRACT

The management model of cross-cultural interaction and foreign students adjustment to studying at a Russian university is explained in the following article. This model is based on cross-cultural management theory and intellectual management integration. This survey has identified the following problems of foreign students' adaptation: the language ones due to poor linguistic ability (both everyday speech and terminology); the ethnocultural problems related to a foreign student's adaptation to new cultural environment and the initial culture shock overcome; the climate adaptation difficulties which are particularly relevant for the students studying in northern regions, Siberian and Far Eastern universities. Considering the Russian mentality specifics and the peculiarities of educational process organization, the parties concerned, such as the departments responsible for educational, research and international activity, student groups, volunteers, are defined. Their interaction mechanism and efficiency indicators are explained. The generalization of various approaches to the adaptation level of individual estimation has enabled the authors to substantiate two main criteria: the sociopsychological adaptation level and the professional adaptation level. According to the level achived the matrix of 9 strategies is suggested. The individual adaptation and development plan for each foreign student could be drawn up on the basis of these strategies The results of matrix approach application are demonstrated by the example of 48 NSUEM students from China, Mali, Mongolia, Nigeria and other countries who had been studying for Master's programs in academic year2018-2019. The individual plans included the foreign students involvement in study groups, additional internships at Russian companies, as well as movement to other student groups or recommendations for changing a volunteer. The application of the complex of activities contributed to the development of the university intellectual capital.

Keywords: *Cross-cultural management, Intellectual capital, Foreign student, Foreign students' adaptation, University*

1. INTRODUCTION

There has been a dramatic increase in international economic relations, migration and headhuntingin the context of globalization. More and more companies are operating in a multicultutal environment. Because of those new ways of communication and business models are developed and the requirements to organizational culture are changed. A large number of sub-cultures interact in international business environment. These sub-cultures' allocation is based on different age, gender, professional, religious, national, individual and other characteristics of people (Templeman, Robinson, McKenna, 2016; Sarmiento, Perez, Bustos, Hidalgo, Solar, 2019). The President of the International Institute for Cross-Cultural and Linguistic Training R. Lewis notes that due to globalization people have not only to know but

also to understand each other; the modern business is essentially a challenge to those who pay little attention to cross-cultural aspects (Lewis, 2006). Russian universities need to integrate into the world's educational community and into research and technological development processes. Because of this, cross-cultural interaction issues are important to these universities.

2. RESEARCH METHODOLOGY

According to the data from the Organization of Economic Cooperation and Development (OECD), there were more than 226 thousand foreign students studying at Russian universities in 2017, which corresponds to 3 per cent of the total number of Russian universities students (OECD, 2017). The «Development of the export potential of the Russian education system» priority project for the period up to 2025 aims at increasing the number of foreign students to 710 thousand in 2025 (Priority project, 2017). However, only 20 per cent of the total number of foreign students have successfully graduated because of considerable difficulties in adapting to the new environment. Each university has its own approach to dealing with foreign students, with little regard for cross-cultural management and no adaptation processes monitoring. The main problems for foreign students in Russia are:

- Linguistic problems because of the low level of knowledge of the Russian language (both special terminology and everyday language) is the main obstacle for communication and learning;
- Ethno-cultural problems in adapting the foreign student to the new cultural environment and overcoming a cultural shock;
- Problems of climate adaptation if a student is studying at universities of the northern regions, Siberia and the Far East.

The object of the study is to develop modern tools for managing intercultural interaction among students at a university in the process of integrating the system of Russian higher education into the world's educational community. A. Areviev, L. Verevekin, E. Verchenko, T. Dubovitskaya, S. Karelov, T. Kishihuk, A. Klimov, A. Larin, I. Latenikov, T. Rakhimov, B. Stepanova, F. Sheregi, etc. studied the problems of foreign students' adaptation at Russian universities. The approaches to the assessment of the individual's level of adaptation are presented in the reasearches of foreign authors, such as R. Diamond, R. Lazarus, K. Rogers, C. Spielberg, S. Folkman, Y. Hanina and others, as well as Russian researchers T. Dubovitskaya, S. Kovaleva, V. Ryakhovskiy, etc. The problem of a foreign student's adaptation is considered in terms of cross-cultural management (Peng, Wu, 2019). The dichotomy of different cultures intersection is manifested in two different ways: on the one hand, there is a threat of destructive conflicts; on the other hand, cross-cultural interaction is a factor of mutual cultural and educational enrichment of an organization and its members. New ideas and knowledge are generated. In this regard, cross-cultural relations need to be explored through the intellectual capital of the organization, which is particularly relevant for universities. Intellectual capital is considered as «knowledge to be converted into value» and is identified with «…all non-monetary and intangible resources, participating in the organization value adding by itself or partialy controlled» (Nikiforova, 2011, p. 71). According to T. Stewart's theory of intellectual capital the following types of capital are allocated: human capital; organizational (structural) capital; consumer (market) capital (Stewart, 1997). An effective cross-cultural management system of an organization ensures the efficient use of its human capital. It is an element of structural capital (as a management subsystem) and an element of market capital, expressing the external dimension of cross-cultural management. The system of cross-cultural management ensures the sharing of activities with different cultures, based on the recognition and respect for cross-cultural differences, and the development of a corporative value system

which is perceived and recognized by all members of a multinational team. The role of cross-cultural management is illustrated in Figure 1.

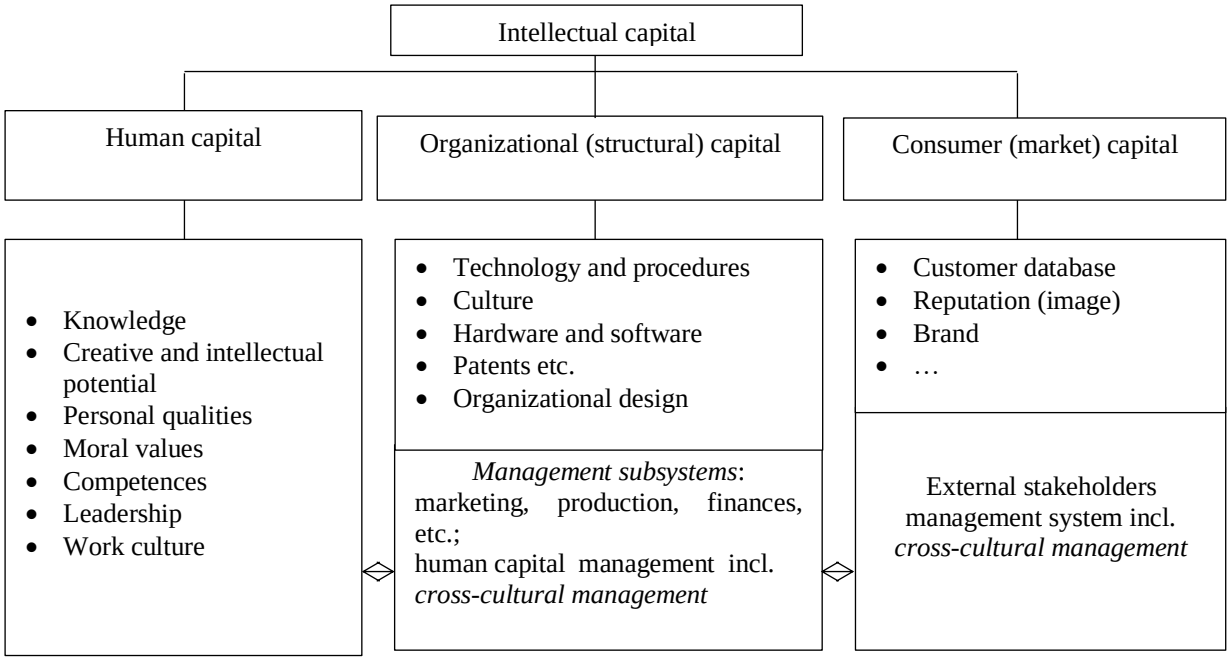

Figure 1: The role of cross-cultural management in the system of intellectual capital (Source: by the authors)

The conceptual framework of cross-cultural management system is demonstrated in Table 1. The model defines the main relationships between the parties concerned. Its application contributes to the reduction of students' adaptation period and the research and education process improvement. The cultural immersion of all participants and cooperation skills development provide the improvement of university intellectual capital.

Table following on the next page

The elements of management	Content
Aim	Establishment and development of effective cross-cultural management system of a university in order to improve all the participants' intellectual potential
Specifics of the environment	The regional specialization (location of a University) in the international division of labor and R&D; Concentration of intellectual capital on the campus.
Objectives	Attracting talented young people from other countries to the University. Establishment and development of the mechanism for interaction between the University departments and foreign students which is based on monitoring its effectiveness. Establishment and operation of flexible specialized departments for working with foreign students (language centers, project groups, etc.). Development of the volunteer activities in the research and educational process and social life for foreign students. Enabling foreign students to adapt to the specifics of the University functioning, urban environment and national culture
Management subject	Special university departments (international office, foreign students' support office, language center, etc.); dean's offices; heads of the departments
Management object	Foreign students, student groups with foreign students included; academic staff, the relevant groups' academic advisors, volunteers
Operation principles	Interaction between University departments, volunteers and academic staff. Stakeholders management. Transparency. Openness, communicativeness of foreign students' adaptation processes. Social responsiveness. Cross-cultural interaction effectiveness and efficiency. The cross-cultural management development at all levels of management of the University
Key processes	Infocommunicational support of enrollment campaigns. Academic staff career development programs' implementation to improve language proficiency and educator competences for working with foreign students and international students' groups. Foreign students' adaptation; adaptation processes monitoring. Language centers establishment. Supporting foreign students' research, educational and extracurricular processes. Organization and delivering of foreign cultural promotion activities at the University community
Methods and models	Model for identification of national business cultures suggested by G. Hofstade «Typology of cultural measurements». Testing. 360 degrees method. Expert method (survey, intercommunication, interviewing). Organizational and administrative methods, etc.
The main indices of effectiveness	The adaptation period for foreign students at the University. The academic staff's, volunteers', structural departments staff's level of foreign language knowledge. The level of foreign students' loyalty to the University. Percentage of foreign students graduates in the total number of foreign nationals enrolled to the University in the corresponding year. The level of graduates' loyalty to the Yniversity from the total number of foreign students. Percentage of foreign graduates employed in Russia/abroad (including the jobs that require the Russian language knowledge). Percentage of foreign enrollees from the total number of foreigners who applied for admission. Comprehensive assessment of the foreign student's satisfaction level (self-assessment, evaluation of academic staff, study group members, dean/specialized department). Others

Table 1: The model of cross-cultural management and foreign students adaptation (Source: by the authors)

Currently, various methods for assessing students' adaptation level are presented in methodological literature. The most well-known and widely used ones are:

- The methodology for socio-psychological adaptation diagnostic developed by K. Rogers and R. Diamond. Its application makes it possible to identify the symptoms of social disadaptation and assess the level of a person's (aged 14 or older) adaptation to new social conditions. Adaptation level is assessed according to a point scoring system. The estimation is based on integrative indicators resulting from a 101-statements survey (Rogers, Dymond, 1954, 1959).
- Coping behaviour assessment methodology developed by R. Lazarus and S. Falkman. It is meant for identifying human (aged 14 or older) response strategies in difficult circumstances. That is, the ways to overcome difficulties in different areas of mental activity (Folkman, Lazarus, 1984, 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, Gruen, 1986).
- The students' adaptation at the university assessment method proposed by T.D. Dubovitskaya. It is used to measure the students' level of social adaptation, as well as to identify the students who have difficulties in adapting within their group and study activities **(**Dubovitskaya, 2010).

Furthermore, it is worth mentioning the level of social interaction assessment method developed by V.F. Ryakhovskiy**(**Karelin, 2007).

The analysis of literature reveals that the researchers use the following criteria in studying students' adaptation at the university:

- Communication level (V.F. Ryakhovskiy's method for assessing the level of social interaction);
- Self-esteem level (S.V. Kovalev's methodology for assessing self-esteem) (Kovalev, 1991);
- Level of anxiety (T. D. Spielberg's and Y. L. Hanin's methodology of determining the level of anxiety) (Spielberger, Gorsuch, Lushene, Vagg, Jacobs, 1983);
- The level of students' professional adaptation (M. S. Yurkina's and A. A. Smirnov's express diagnostics methodology) (Yurkina, Smirnov, 2015).

Thus, considering the significance and impact of the Russian language proficiency, the foreign students' adaptation process must be viewed according to two aspects: socio-psychological and professional adaptation. In terms of generalization of local and foreign experience of cross-cultural management at universities, it was possible to identify the main stages of a foreign student's integration into the educational process and into the socio-cultural environment of a university:

1) Awareness (prospective foreign enrollees' examination of the information from brochures, the university's official website and the Internet);
2) Adaptational;
3) Post-adaplational, job-oriented.

Based on the conceptual model of cross-cultural management at the university in order to attract and successfully adapt foreign students, it is proposed to make a comprehensive assessment of foreign students' adaptation level according to the following criteria:

1) Socio-psychological adaptation;
2) Professional adaptation.

Due to the fact thet the period of foreign students' adaptation depends on the effectiveness of their interactions, teaching staff, study group and volunteers, the suggested methodology is

based on the «360 degrees» staff assessment method, which entails the assessment of the employee's performance by the immediate supervisor, subordinates, employee's colleagues and the employee him/herself. The method of assessing foreign students' adaptation level is performed by a foreign student him/herself, the study group supervisor (or the student's academic adviser, or a lecturer in a subject to be the largest proportion of the current semester scheduling or in a professional disciplines), the class leader, a volunteer. The integral estimate is calculated as an arithmetic mean of distinct estimates in terms of socio-psychological adaptation of a foreign student:

- The Russian language proficiency estimation (according to 10-point system based on the student's testing);
- The foreign student's self-esteem according to 10-point system based on the adapted K. Rogers' and R. Diamond's methodology;
- The group supervisor's assessment according to 10-point system;
- The group leader's assessment according to 10-point system;
- The volunteer's assessment according to 10-point system.

The interpretation of the results of foreign students' socio-psychological adaptation assessment is presented in Table 2.

Points	Level	Description
10 – 7,6	High	The student is reasonably comfortable in the group, demonstrates some initiative, his/her origin is of little importance to his classmates and teacheing staff. He/she has both Russian and foreign friends within the group and at the university. He/she often initiates a conversation and tells about his/her country's traditions and culture. He/she seeks help when necessary. He/she actively participates in extracurricular activities, competitions, foreign culture weeks, etc. He/she visits exhibitions, museums, cinemas and other leisure and culture sites.
5,1-7,5	Medium	The student takes an interest in certain topics. If he/she is sure of wording a question in Russian, he/she can seek help when having questions or challenges. He/she participates in extracurricular activities at the insistence of the supervisor or the group leader. He/she has one close friend in the group or university. However, he/she has difficulties in communication with others, as he/she is unsure about his/her ability to express thoughts in Russian.
5 and less points	Low	The student is reserved, incommunicative and preoccupied. He/she feels uncomfortable in the group because of the low level of the Russian language knowledge. He/she finds it difficult to formulate a request for help in the Russian language. He/she seeks help only when extremely necessary, or does not solve problems. The student does not show interest in Russian culture peculiarities and does not tell anyone about his/her country and its culture. His/her participation in extracurricular activities is passive (or he/she does not take part in these events at all)

Table 2: The interpretation of the results of adapted methods implementation for foreign students' socio-psychological adaptation assessment (Source: by the authors)

The integral assessment is calculated from the following distinct estimates in terms of professional adaptation:

- The foreign student's self-esteem according to 10-point system based on adapted M.S. Yurkina's and A.A. Smirnov's methodology;
- The group curator's assessment according to 10-point system;
- The group leader's assessment according to 10-point system;
- The volunteer's assessment according to 10-point system.

The interpretation of the results of foreign students' socio-professional adaptation assessment is presented in Table 3.

Points	Level	Description
10-7,6	High	The student understands the material taught and successfully fulfils tasks, actively participates in face-to-face trainings, as well as in research conferences and seminars. He/she seeks help when necessary, easily expresses his/her opinion, demonstrates ability at trainings
5,1-7,5	Medium	The student understands certain topics of the material taught and requires further consultation to complete the tasks. He/she makes mistakes in professional terminology. He/she rarely participates in research conferences. He/she seeks help when necessary.
5 and less points	Low	The student has difficulties in learning the material taught and doing tasks; making a presentation causes considerable strain for him/her because of low professional terminology knowledge. He/she can't ask lecturer a question. His/her answers to the questions are not relevant because he/she doesn't fully understand the question. The student needs further consultations on many subjects. His/her participation is passive (or he/she does not take part in research conferences at all)

Table 3: The interpretation of the results of adapted methods implementation for foreign students' professional adaptation assessment
(Source: by the authors)

The method for integrated assessment of a foreign student's adaptation suggests a complex approach to the adaptation assessment involving all stakeholders in the research and educational process (Fig. 2). As a result of the assessment, an adaptation strategy is chosen for each student according to the matrix which is presented in Figure 3.

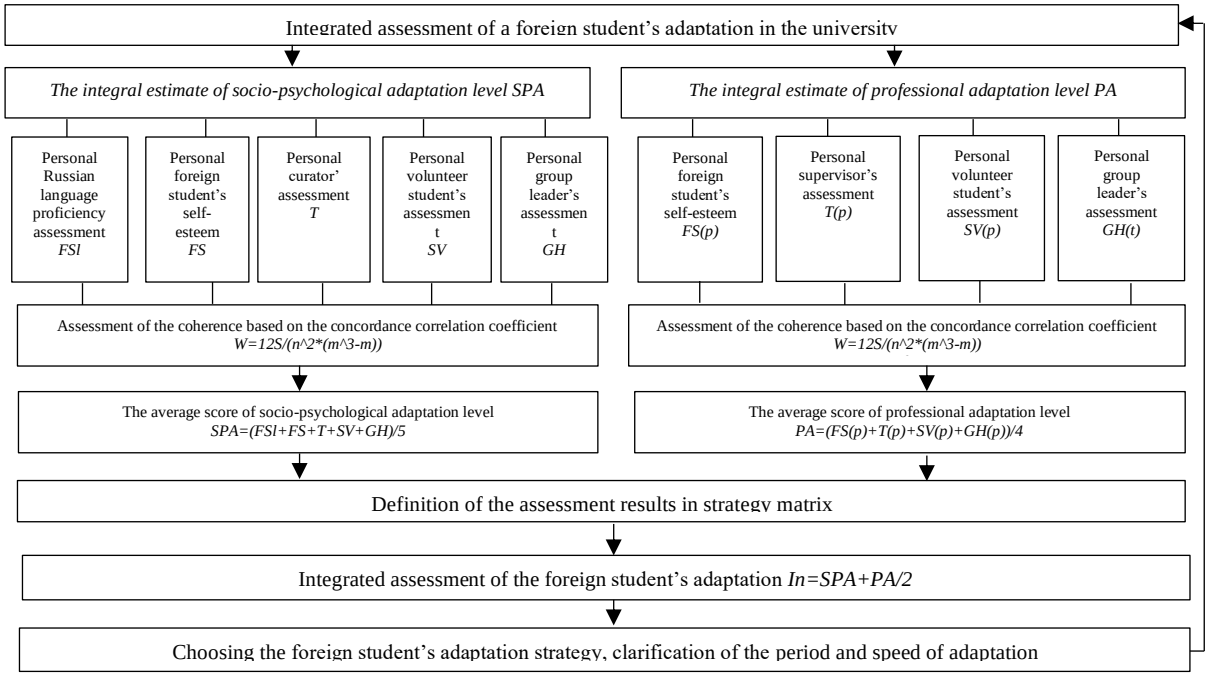

Figure 2: The capculation method for integrated assessment of the foreign student's adaptation at the university
(Source: by the authors)

Figure following on the next page

Professional adaptation level	Low	Medium	High
High	Social-psychological immersion strategy 3.1	Social-psychological adaptation strategy 3.2	Leadership strategy 3.3
Medium	Strategy of professional development and social-psychological adaptation 2.1	Complex adaptation strategy 2.2	Professional development strategy 2.3
Low	Crisis strategy 1.1	Social-psychological adaptation and professional immersion strategy 1.2	Professional immersion strategy 1.3

Social-psychological adaptation level

Figure 3: Choosing the foreign student's adaptation strategy matrix (Source: by the authors)

3. RESEARCH FINDINGS

The developed methodology of the foreign students adaptation level was tested at FSBEI HE "NSUEM" in September 2018 – February 2019. 48 foreign students studying at different departments were chosen for the survey (Fig. 4). The first stage of the study took place in September 2018 (the part of the result is introduced in Table 4, the second phase was conducted in February 2019 г. (Table 5).

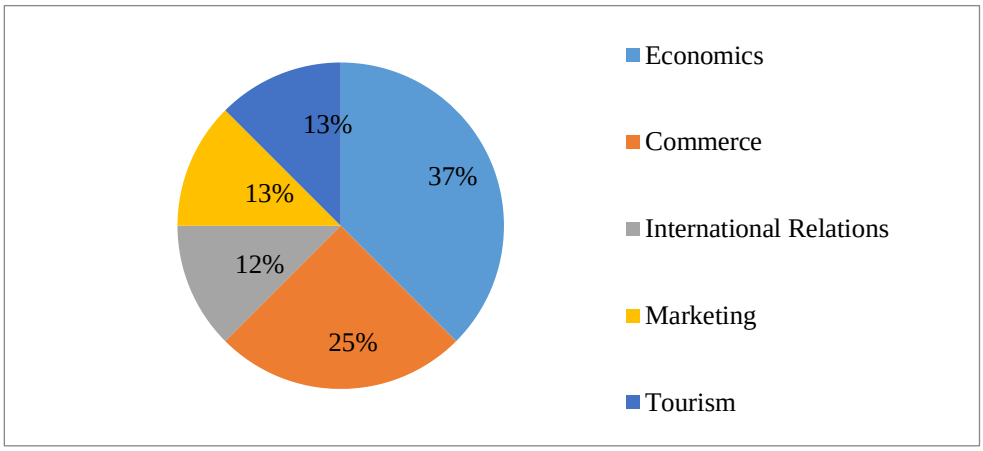

Figure 4: Foreign students' structure in terms of depatments at NSUEM (2018/2019 academic year), % (Source: by the authors)

Table following on the next page

Country	The number of students, people.	Integrated assessment	Including	
			Social-psychological adaptation level	Professional adaptation level
Djibouti	1st-year student A	5.02	Low	Medium
China	1st-year student B	4.55	Low	Low
	2nd-year student C	5.17	Medium	Low
Korea	2nd-year student D	5.82	Medium	Medium
Mali	2nd-year student E	6.16	Medium	Medium
Mongolia	1st-year student F	8.1	Medium	High
	2nd-year student G	8.5	High	High
Nigeria	2nd-year student H	6.44	Medium	Medium

Table 4: The results of foreign students studying at NSUEM adaptation level assessment conducted in 2018 (fragment)
(Source: by the authors)

Country	The number of students, people.	Integrated assessment	Including	
			Social-psychological adaptation level	Professional adaptation level
Djibouti	1st-year student A	5.52	Medium	Medium
China	1st-year student B	4.65	Low	Low
	2nd-year student C	4.87	Low	Low
Korea	2nd-year student D	5.82	Medium	Medium
Mali	2nd-year student E	6.34	Medium	Medium
Mongolia	1st-year student F	8.2	High	High
	2nd-year student G	9.13	High	High
Nigeria	2nd-year student H	6.55	Medium	Medium

Table 5: The results of foreign students studying at NSUEM adaptation level assessment conducted in February 2019 (fragment)
(Source: by the authors)

According to the results of foreign students' adaptation level assessment the following conclusions were made:

- There is a progress in 6 students' adaptation (1st-year student A from Djibouti, 1st-year student B from China, 2nd-year student E from Mali, 1st-year student F from Mongolia, 2nd-year student G from Mongolia, 2nd-year student H from Nigeria): the students actively participate in extracurricular activities, improving their everyday speech, which also has a beneficial effect on professional terminology learning. Accordingly, there are educational achievements;
- The 2nd-year student from China has shown regress because of the low level of the Russian language knowledge, the student's lack of social skills and no participation in student group's;
- No changes were observed in Korean student's D adaptation level.

According to the results, the following strategies and recommendations were developed (Table 6).

Table following on the next page

Country	Student	Strategy	Recommendations (as it should be)
Djibouti	1st-year student A	Complex adaptation strategy	Active participation in extracurricular activities organised at the university (foreign culture weeks, etc.) and involvement into graduate chair's R&D
China	1st-year student B	Crisis strategy	Change of the supervisor and volunteer, organization of extra classes at the university language center
	2nd-year student C	Crisis strategy	Change of the students' group enrolled for the same educational program (there are conditions for transferring the student to a new group with a lower academic achievement level, but being more homogenous); change of the supervisor and volunteer; involvement into extracurricular activities (sports events, etc.)
Korea	2nd-year student D	Complex adaptation strategy	Active participation in extracurricular activities at the university (the extracurricular activity «International relationships», etc.)
Mali	2nd-year student E	Complex adaptation strategy	Involvement into graduate chair's research events' organization; participation in conferences in foreign languages, organized at NSUEM and other universities.
Mongolia	1st-year student F	Leadership strategy	Active involvement into graduate chair's R&D, participation in research events and grant work
	2nd-year student G	Leadership strategy	Involvement into student self-government and retaining the responsibility of mentoring foreign students from Asian countries
Nigeria	2nd-year student H	Complex adaptation strategy	Organisation of internship with one of the leading partner organizations of the University; issuing a research publication based on the results of the internship

Table 6: Recommendations for NSUEM foreign student's adaptation level (Source: by the authors)

4.CONCLUSION

Thus, considering the complexity of acquiring educational programs offered at Russian universities by foreign students, the developed methodology application makes it possible to assess the level of adaptation of each foreign student over time and to make adjustments to individual adaptation strategies. This results not only in the development of foreign students' competences, but, in general, the university intellectual capital improvement, which creates a multinational environment. Moreover, the responsibility for implementing individual strategies is imposed on all international departments. In the conditions of quarantine measures implemented to prevent the spread of coronavirus infection and the closure of state borders, the suggested approach will provide the opportunity to keep the pool of foreign students by identifying their individual needs and organising communication links corresponding the needs and mentalities of different countries.

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INTERACTION BETWEEN REGIONAL DEVELOPMENT, INNNOVATION POLICY AND UNIVERSITY ECOSYSTEM

Tatiana Corejova
University of Zilina, Slovakia
Tatiana.corejova@fpedas.uniza.sk

Milan Garbier
University of Zilina, Slovakia
Milan.garbier@ziltep.sk

Maria Rostasova
University of Zilina, Slovakia
maria.rostasova@fpedas.uniza.sk

Alexandra Valicova
University of Zilina, Slovakia
Sasa.rovnanova@gmail.com

ABSTRACT

Regional innovation policy as a part of regional development is based traditionally on the triple helix concept that includes three main areas – public, entrepreneurial and academic. Regional innovation policy-making is thus based on defining the roles of individual actors in the ecosystem, which are determined by their own missions. Approaches to the formulation of policy itself and strategies are conditional on previous developments in the regions and macro regions of the world. The changes in the society in the Slovak Republic during the last 30 years have had impact on the needs and expectations that the regional policy makers must fulfil. The starting point in the 1990s was the activity of university members to overcome barriers in cooperation with local entities and to develop cooperation to formulated common regional innovation policy as well as ensure knowledge and technology transfer from university to regional institutions and viceversa. Two fundamental approaches were used to explore the interactions between regional development, innovation policy and the university ecosystem, knowledge biography and knowledge triangle. Barriers of the entire university ecosystem were identified and include insufficient support the acceptance of the risks associated with the process of innovative entrepreneurship in related to national culture, insufficient business skills, and still insufficient learning activities in the area of "technology-based entrepreneurship" as well as relatively short history of innovation business. Lack of motivation to innovate is the challenge for university and for region too.

Keywords: *regional development, innovation policy, university ecosystem*

1. INTRODUCTION

Individual regions differ in their starting conditions and attractiveness, which include many heterogeneous aspects, e.g. geographic, demographic, historical, cultural, etc. In general, regional policy represents the economic policy of the government aimed at increasing the economic performance of individual regions and promoting greater uniformity in the distribution of economic activities in the area, in the territory, i.e. to overcome interregional differences. The impact of regional culture and practices on regional or local economic development is mainly reflected in the functioning of business entities, firms, the creation of new entities, innovation, the acceleration of regional and local learning processes and transaction and coordination costs (Corejova, Rostasova and Rovnanova, 2018; RVIS+, 2015).

Within the regions, different types of formal and informal relationships, interactions and more or less formal clusters and networks are gradually being developed between actors, and a regional innovation ecosystem is being formed. The creation and further development of the regional innovation system includes both the socio-economic level and the technological level. Regional innovation policy-making is thus based on defining the roles of individual actors in the ecosystem, which are determined by their own missions. Approaches to the formulation of policy itself and strategies are conditional on previous developments in the regions and macro regions of the world. At the same time, each of the entities gradually forms its own ecosystem under the influence of exogenous influences supporting their mission. The performance, quality and impacts of different ecosystems are different and evoke questions such as: How is regional innovation policy developing? How did the university ecosystem evolve? What are their interrelationships? Is it possible to measure and evaluate the performance, quality and impact of the university innovation ecosystem? What indicators can be used? The paper deals with the presentation of the university innovation ecosystem in connection with the regional innovation strategy as a part of regional development policy and the proposal of indicators for comparison and internal evaluation of the university innovation ecosystem with identification of barriers in ecosystem development in conditions of technically oriented universities in Slovakia. In the future, regional development will be more perceived through knowledge, inclusion of groups, sustainability and efficiency than through economic growth indicators.

2. THEORETICAL FRAMEWORK

From a systemic point of view, a regional innovation system can also be defined as a system stimulating the innovation capabilities of companies in the region, with the aim of strengthening the region's economic growth and competitiveness (Isaksen, 2005). The regional innovation system is geographically delimited by the region's borders, the administrative division of the country, which is above the local level. Access to the system in question is not only a framework for studying economic and innovation performance, but is also used as a concrete policy-making tool to systematically improve learning processes in order to ensure regional competitiveness in practice. This in turn affects the functioning of the innovation system as a whole. In principle, procedures are known in terms of policy initiation and strategy, two approaches are simply referred to as bottom-up and top-down. Isaksen and Hauge (2002) define a regional innovation system as a concentration of interdependent entities operating in the same or related industrial sector, operating within a defined geographical area. Actors of the economic, political and institutional links in regional innovation system generate regional learning processes leading to the rapid dissemination of knowledge and practical experience (Rehak and Sipikal, 2012). The innovation process in a regional innovation system requires not only regional localized resources such as skilled workforce and research results, but also is shaped by institutionalized values and practices at regional level. The proximity of regional actors is essential for mutual learning, knowledge sharing and stimulating innovation in the region (Hudec, 2007). The regional innovation system can be summarized as follows:

- the existence of, and close links between, firms, universities, research institutes, intermediaries, financial institutions and other agencies;
- the existence of a local capital market;
- a certain degree of autonomous powers in the area of public expenditure;
- responsibility for the expansion of conventional infrastructure facilities;
- innovative atmosphere and educational orientation of companies and the whole population. (Doloreux and Parto 2005).

The bottom-up approach builds on the theory of regional innovation systems from a business perspective in terms of liberal market economies.

It is based on explaining the geographical distribution of innovation in space and the subsequent designing policies focused on stimulating the innovation capability of regional economies (Isaksen et al., 2005). When formulating policy and strategy, it sees the position of the public sector as implicit; the state is in the position of the founder of universities and is oriented on the cooperation between universities or R&D institutions and industry, or support for science-based industries (Gunasekara, 2006; Hewitt-Dundas, N. 2012). Of course, the access then contains at top-down elements. A typical representative of the top-down approach is the Triple Helix concept. The triple spiral model identifies three actors in regional innovation systems - university, industry and the state. The concept interprets the shift from the dominant pair - industry and state in an industrial society, to the growing triple relationship between university, industry and the state in today's knowledge society (Trippl, Sinozic and Smith, 2014). The aim of this approach is to create a new institutional and social environment for the production, transfer and application of knowledge and technology into practice. The Triple Helix model sees two basic perspectives: institutional and evolutionary. The institutional perspective examines the growing importance of individual links between innovation actors, a balanced organization of actors that facilitates the creation of a knowledge-based infrastructure. All three players of the Triple Helix model fulfil their own roles and at the same time take on the role of the other actors in developing a triple interface between universities, industry and the state. The balanced arrangement of the main three players in the Triple Helix model offers the most favourable environment for innovation. (Etzkowitz and Leydesdorff, 2000; Farinha and Fereira, 2012; Graham, 2014) The evolutionary perspective sees university, industry and the state as co-evolving subsets of social systems. There is interaction between them through networking. These interactions are part of two processes of communication and differentiation: functional (between science and market) and institutional (between the private and public spheres at university, industry and state levels). Internal differentiation within each institutional sphere creates new types of collaboration between the Triple Helix actors. (Andersen and Taylor, 2006). In the Triple Helix model, the university is considered to be a source of new knowledge and technology. While the state has the task of defining policies for the interaction of the main players in the model, industry is considered a place of production. The state and industry are involved in promoting academic development, and the university and other research institutions produce the knowledge needed to generate innovation (Clark, 1998; King, 2009). This model has promoted the marginal position of the university to an equal position with the state and industry (Etzkowitz, 2003). The infrastructure of scientific and research institutions in the region with internal and external networks of relations between public institutions and private partners is a critical component of the innovation system (OECD, 2010).

3. METHODOLOGY OF CASE STUDY

Methodology for examining regional dimension of knowledge economy includes different approaches, based on economics, geography or sociology (Andersen and Taylor, 2006). Two fundamental approaches were used to explore the interactions between regional development, innovation policy and the university ecosystem, knowledge biography and knowledge triangle. The knowledge biography is the tool for the understanding the changes, knowledge and innovation processes in enterprises including the time dimension. It can be applied to the identification of regional innovation system as well as the institutional innovation ecosystem. The next parts of contribution explain and describe the experiences with the application of knowledge biography to regional innovation policy and to the university innovation ecosystem in condition of Zilina self-governing region and the University of Zilina, Slovak Republic. Within the evaluation of knowledge biography was recommended to create maps of the knowledge process related to regional innovation policy (Dado et al. 2006, RVIS+, 2015) – milestones in the creation, processing, utilization and dissemination of knowledge in the

institution. It is created based on information included in knowledge biography of the institution. Horizontal division identifies time represented different stages of the development of Slovak economy. Vertical division identifies where was realized the process of creation, processing, utilization and dissemination of knowledge (internal or external). The knowledge triangle as a central concept on the European innovation, research and education policy landscape is at the core of the next generation of policies and programmes (2009/C302/03; Unger and Polt, 2017.) and is connected with many concepts including Triple Helix (Lappalainen, P. and Markkula, M. 2013; Etzkowitz &Leydesdorff, 2000; Miettinen, 2002; Lundvall, 2004; Bucek, Rehak and Tvrdon, 2010; Uhlin, 2000). It relates to the need for improving the impact of investments in the education, research and innovation as well as their impact on growth, competitiveness and sustainability (Rothwell and Gardiner, 2007, Greenhalgh and Rogers, 2010). The concept of knowledge triangle reflects the non-linear innovation processes and focuses on the feedback loop of research and innovations to the education.

4. RESEARCH RESULTS AND DISCUSSION

4.1. Regional development and innovation policy

The 1990s were marked by extensive changes in the country's economy as well as by the formation of a new regional structure within Slovakia. At the same time, there have been significant changes in funding for education and research, including major changes in the functioning of universities. The lack of resources and, on the other hand, the possibility of contacts with foreign universities led to the first changes in the formulation of the university mission towards contact with the environment in which it operates and thus to the first steps to change the university ecosystem in favour of open communication with the regional environment. Subsequently, in the first decade of the 21st century, within the framework of Slovakia's accession to the EU, steps are taken to systematically work on regional innovation policy and strategy in terms of the triple helix concept. The official and documented creation of the regional innovation system is linked to the formulation of the Zilina Region Framework Strategy for Innovation Development in 2006. This document very openly stated that this strategy is designed to help the region to optimize its innovation capacities and expand regional innovation capacity. The document stated that this is a "relatively free relationship, but already in many ways interdependent, with overlapping and interconnection of objectives and tasks". He also pointed out that “the regional innovation partnership between science, administration, industry and society as a whole is to enable the region of Zilina to create an environment conducive to regional innovation potential, foster cooperation between existing institutions and organizations and create a strategic development framework that will activate existing businesses, to introduce further innovations and to create a positive culture for new entrepreneurs. In 2014, following the previous document, the Regional Research and Innovation Strategy of the Zilina Region 2014+ (RVIS 2015) was prepared, which represents the basic development document of the Zilina Region for the area of business support, innovation and research and development for the next period - 2014-2020 in the context of the implementation of the EU 2020 agenda. Based on this document, in cooperation with other stakeholders, the proposed measures are gradually being implemented in the Zilina region in order to increase the smart specialization of regional industry and services, the growth of sustainable jobs driven by innovative business, accelerated by research institutions, clusters and networking in the Zilina region (see Figure 1). The above-mentioned innovation strategies for the Zilina Region represent a set of common rules and standards that strengthen the region's innovation capacity through joint learning in the region. The existence of such common rules facilitates interaction and mutual understanding in the knowledge sharing process. The region in question has the potential to be considered as one of the best geographical territories for a

knowledge-based innovation economy, due to the presence of important specific and regional resources capable of maintaining innovation capacity and competitiveness. In addition, proximity, personal contact and intensity of contacts between actors are essential prerequisites for the exchange of tacit knowledge, which play a key role in innovation processes.Ea solet feugait vis. Vel animal eligendi et. Lorem ipsum dolor sit amet, unum fabulas te pro, commune rationibus cum ex, maiestatis percipitur signiferumque in mel. Est brute congue tacimates ei, mel ex solet graeco. At has utinam iriure, primis quaestio consequat eum te. Bonorum rationibus duo ne, per ad molestie dissentiet. Ea solet feugait vis. Vel animal eligendi et. Lorem ipsum dolor sit amet, unum fabulas te pro, commune rationibus cum ex, maiestatis percipitur signiferumque in mel. Est brute congue tacimates ei, mel ex solet graeco. At has utinam iriure, primis quaestio consequat eum te. Bonorum rationibus duo ne, per ad molestie dissentiet. Ea solet feugait vis. Vel animal eligendi et. Lorem ipsum dolor sit amet, unum fabulas te pro, commune rationibus cum ex, maiestatis percipitur signiferumque in mel. Est brute congue tacimates ei, mel ex solet graeco. At has utinam iriure, primis quaestio consequat eum te. Bonorum rationibus duo ne, per ad molestie dissentiet.

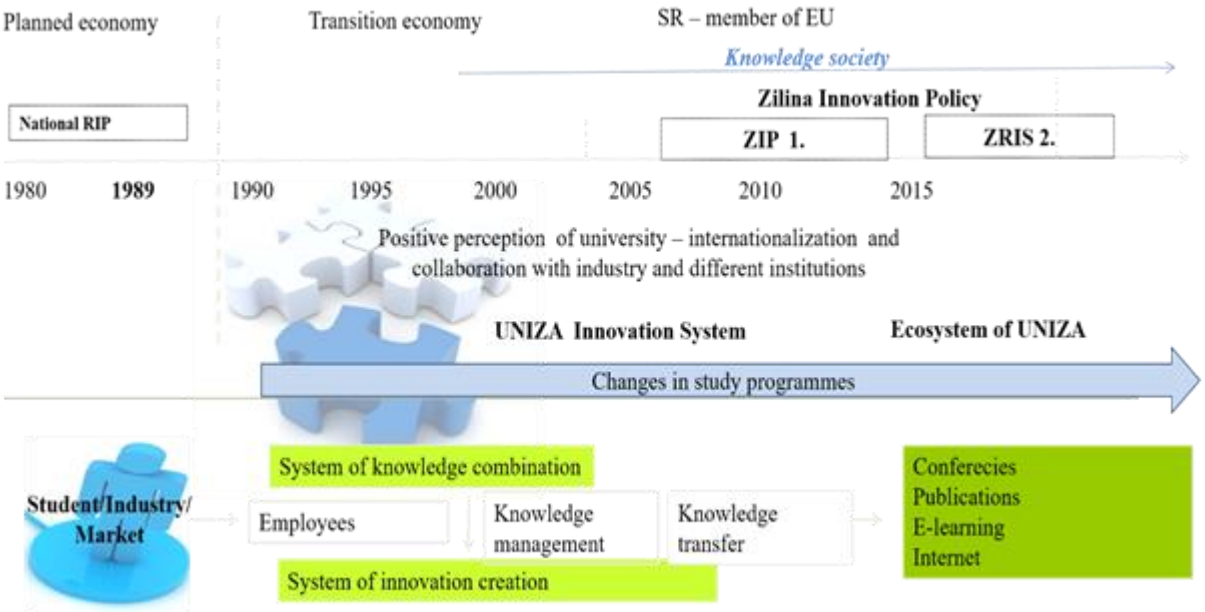

Figure 1: Time evolution of regional innovation policy and UNIZA ecosystem

4.2. University Ecosystem

A university innovation ecosystem can be characterized as a "university environment" leading to the generation of ideas and their implementation in the form of new products, services and processes on a global scale (King 2009). Universities perform a number of functions in regional innovation systems, contribute to the creation of high-tech firms, provide consultations to local entrepreneurs and institutions, inform, discuss and provide highly qualified and educated graduates to the labour markets, license new technologies, convey the latest scientific and technological news and attract researchers to the region, networking and stimulate social interaction and learning, thereby developing regional innovation capacities and promoting regional economic growth (Feldman and Kogler 2008; Salter and Martin, 2001; Lockett et al., 2005; Musselin 2007; Breznitz and Feldman, 2009). The approach to the formation of the university innovation ecosystem under the conditions of the University of Zilina (further UNIZA) was based on its own history in the field of relations with industry and industry, social practice and the focus of his educational and scientific research activities, knowledge of the 1990s and the university mission for the next period.

Gradually, the pressure on its development has intensified in the light of budgetary constraints, on the one hand, and on the other, the financial intensity of current research and development. Several mechanisms have been developed to translate knowledge and technology into practice, including regional practice (Etzkowitz 2000; Koschatzky, 2003; Geiger, 2004; Geiger and Sá 2008, Shane, 2004). The current UNIZA mechanisms consist of:

- Various institutional forms supporting knowledge transfer (USP university science park, RC research centre, technology park, co-working space, spin-offs and start-ups, etc.);
- Forms of support for knowledge transfer tied to the knowledge bearer, i. j. employee or student;
- Forms of support for the transfer of knowledge differentiated in time;
- Partnerships with other entities based on geographical or professional proximity (student's organizations, professional associations, etc.).

Commercialization of intellectual property in the form of licensing for new business start-ups is registered in Technology Transfer Offices (CTTs) located in academic institutions. (Kenney and Patton, 2009, p. 1410).

4.3. Indicators of university ecosystem

A process approach that maps system inputs, processes and outputs, and a set of indicators that relate to ecosystem performance and quality can be used to assess the university's innovation ecosystem. The indicators are related to:

- University capacity in material, financial and human capacity;
- access to entrepreneurship education, especially technology for students and employees;
- elaborated internal rules for knowledge transfer and property rights;
- activities of the innovation system outside the university, city or region, state, etc.;
- options for raising seed and venture capital for corporate finance;
- the range of knowledge-intensive and commercial-business services provided and offered by the university and its partners.

Performance indicators of UNIZA innovative ecosystem for the education reflect cost per student and study course as well as number of students per teacher and per study course, for the research number of publications weighted per some categories per teacher or researcher and for the transfer number of industry founded research contracts per employee or academic staff and number of spin-offs, start-ups and survival rate. Quality indicators of UNIZA innovative ecosystem are devoted to the main UNIZA areas:

- Education is associated with graduation rate, drop-out rate, employment rate and job satisfaction of graduates
- Research includes citation rate per publication or per academic staff, number of research contracts on competitive basis per academic staff, number of PhD students per professors and associate professors
- Transfer is associated with income from industry research contracts and license income per academic staff.

5. CONCLUSIONS

The issues of regional innovation policy, tasks and their fulfilment by individual subjects in the region, transfer of knowledge and technology, their creation and application in the regional scope and the possibilities of their research are still at the centre of both theory and practice. Knowledge processes, creation, dissemination and exploitation of knowledge in regions as well as in universities are not yet the content of statistics and are inherently unique.

Therefore, non-traditional methodological procedures based on qualitative research methodology were also chosen. Assessment model of the impact of UNIZA on the host city and region of Zilina includes several areas: education, research, transfer, partnership with the city, region and the community living in it, gateway to the world and for the world as well as the impact as important employer. Barriers of the entire university ecosystem were identified and include insufficient support the acceptance of the risks associated with the process of innovative entrepreneurship in related to national culture, insufficient business skills, and still insufficient learning activities in the area of "technology-based entrepreneurship" as well as relatively short history of innovation business. Lack of motivation to innovate is the challenge for university and for region too. Identified barriers in the university's internal and external environment and challenges require changes in its business model and legislative framework. Business model changes mean and require changes of governance, technology, organization etc. They are triggered in response to barriers, while also using new, especially digital technologies and models to improve performance (Corejova and Al Kassiri, 2015). Organizational changes related to people, processes, strategies, structures and dynamics of competition are where most challenges and opportunities lie (Madudova and Majercakova, 2017). Most of this value would be unlocked through business changes leading to faster innovation, higher productivity, greater process efficiency and improved customer experience. Organizational change requires a clear recognition of the need to transform, an understanding of what needs to change, and a plan to make the required changes. The future is related to the formulation and creation of new business models and platforms based on various technologies, processes, and large data processing. These affect changes in the development of sectors, their structure, vertical and horizontal links.

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EARNINGS MANAGEMENT AND IT´S EFFECT ON BEHAVIOR OF INVESTORS

Veronika Jurickova
University of Zilina, Slovakia
veronika.galgankova@fpedas.uniza.sk

Elena Gregova
University of Zilina, Slovakia
elena.gregova@fpedas.uniza.sk

ABSTRACT

Information about the current financial situation of the company and its development is important for many entities that come into contact with the company. The main users are certainly the management of the company, which use this source of information to improve the management process and process of strategic decision-making. The results of financial analysis are equally important for investors and shareholders. They are interested in how are the investors deciding. It means in which products or securities to invest and especially when to make the selected investment. The biggest mistake in investing is that most people puts his free money into products and assets that they don't understand. It is necessary for investors to go through the process of deciding about their investments and about the process of finding of considerable information. The main objective of the article is to examine the various types of investors and their investment strategies in choosing a company in which to invest their free funds. In addition to rational thinking, the investor's decision-making process is also influenced by his emotions, and it is also result of the character and personality. The article also examines earnings management at the theoretical level and also as a process through which companies manipulate their financial statements, trying to influence investors. It is significant for investor to check basic financial indicators when they are finding company for theirs investments. The contribution of the article is to summarize the basic distribution of investors, their investment strategies and to examine the impact of earnings management on investors' decisions.

Keywords: *Earnings management, Financial analysis, Investors, Investiment strategies*

1. INTRODUCTION

The word investing comes from the Latin verb 'investire' or 'investitura' and with the meaning of fabric or coverage. Investing is an activity aimed at temporarily depositing free funds with a view to valorising it and accepting the risk of loss or profit. Investors are then understood as an economic entity that carries out the activity of investing. Benjamin Graham distinguishes investment and speculation, whereby investment is an operation that is carried out on the basis of an analysis. Investment promises security and an adequate return. Speculation is then an operation that does not satisfy these conditions.Investing is not a one - off act. It is linked to the cycle of activities that follow cyclically and they are focused on continuous market monitoring and decision-making on the next step in the situation (Graham, 2003). Fabozz lists some phases of investing. At first setting investment objectives, than development of investment policy, selection of investment strategy, creation and tracking portfolio and performance measurement and evaluation (Fabozzi, 2009). According to Benjamin Graham, each investor should follow the rules and should make analysis of the company and the health of its core business before buying shares. The investor must consciously protect himself from significant losses and strive to seek "reasonable", not extraordinary performance (Graham, 2003). Chovancova understands investing as a decision-making process. investor should use tools of this proces to make money for himself. There is a direct relationship between expected return and risk.

Risk-free investment brings a low but stable and secure return. Each investor should make decisions in relation to risk and expected return. Investing is a cyclical process consisting of several activities. These activities are key vigilance, analyzing market developments and making decisions (Chovancova, Bacinsin, 2005). Earnings management is the active manipulation of accounting results. It is made to create an idea of company performance (Mulford, Comiskey, 2003). Earnings management is very controversial topic at this time. Profit of every company is very important source of information for investors and users of financial statements (Valaskova, Kliestik, Kovacova, 2019). Earnings management occurs when management uses different degrees financial reporting judgment and transaction structure to change those financial statements. It is because of the deception of shareholders as to the underlying economic performance of the company. The other reason is to influence the results of contracts that depend on the reported accounting data (Healy, Wahlen, 1998).

2. METHODOLOGY

The article is focused on the theoretical evaluation of individual types of investors and investment strategies. In this article the analytical method is used. There are also described the individual investment strategies that individual investors use to achieve the return on their investment. The analysis uses information from scientific articles, conference articles, books, as well as publications and articles from various economic journals. The contribution of the paper consists in a summary of theoretical aspects of investment, an examination of individual types of investors and investment strategies. The article examines how businesses seek to influence their future potential investors by adjusting their financial statements.

3. RESULTS

Investors can be characterized according to different aspects. Investors are important for every company. They bring finance and thus the company is not dependent on bank loans. The company avoids repayment of the loan and the possibility of loan default (Misankova, Spuchlakova, Frajtova-Michalikova, 2015). Each company should consider that the company's good reputation affects the quality of earnings and financial performance, and thus also affects investors (Huynh, 2019). The most common is the aspect of risk acceptance. Financial instruments carry different degrees of return on investment. Based on the level of risk accepted and the portfolio structure, we distinguish these types of investors:

- Non-risk investor: the word investing is synonymous with risk. From that point of view this type of investor is the "worst". Certainty is for him the most important. When there is high level of risk his investments do not enter and do not remain on the bank deposits market even at the cost of high returns. He does not realize how inflation works in combination with low interest rates. If he decides invest in other than bank deposits, he remains with bonds, instruments money market and cash holdings. Investigating and risk managemenet is important for this investor (Valaskova, Kramarova, Kollar, 2015).
- A conservative investor is a risk-averse type of investor. The profitability of bank deposits is not enough for him and he wants more. Therefore, he enters the financial market and invests primarily in quality bonds and money market instruments. For him it is recommended to invest for a longer horizon, for example more than 1 year. It is significant to make his portfolio diversified and also invest in life insurance, building savings and short term term deposits with banks. It is recommended to create reserves for the unexpected expenditures so that he does not have to sell the shares just as he gets into the temporary tangible emergency.
- A balanced investor is connected with less risk averse and he is psychologically capable deal with loss. His portfolio includes also shares in equity but increasingly he prefers bonds and also buys money market instruments.

Because of it, he takes more risks but also benefits from an even longer investment horizon, maybe 3 years. He should also have financial reserves to cover losses.

- The growth investor has a remaining portfolio of 50% shares. Equity funds are prefered more than stock titles of reputable companies. This increasing amount of shares is connected with higher risk of loss and profit. Its portfolio is associated with higher volatility, and because of it there is recommended an investment horizon of more than 5 years.
- An aggressive (dynamic) investor is willing to accept almost any degree of risk or for profit. Almost ¾ of its portfolio is made up of shares. The rest of the portfolio is made up of bonds and money market instruments. Investors have with this experience and therefore have no problem with relatively high short-term losses. The portfolio composition is highly volatile and therefore their horizon is the longest.
- A speculative investor is the most inclined to risk because he invests exclusively in equities. Investment horizon has more than 10 years. According to the characteristics of this type of investor he must be able to financial covering higher losses, he should have a reserve in the form of real estate, collections or precious metals, and only a rich market player can afford this (Chovancova, Bacinsin, 2005).

3.1. Strategies of investors

Investment strategies can be assessed according to various criteria and accordingly divided into different categories. Technical analysis is focused on the examination of past development trends. Its the ultimate goal is to predict possible future trends. It uses tools like historical price movements, trading volumes and others. Among other things, the image with which a company can attract customers is also important for the investor (Gavurova, Bacik, Fedorko, 2018). The success of the company is also influenced by the employees themselves (Meyers, Vagner, Janoskova, Grecu, Grecu, 2019).Graphs have an important role in the design process and decision-making. Strategies that use technical analysis indicators try to discover different trends, regularities that show when securities should be bought or sold. These trends can be revealed by examining changes in the supply and demand of the valuable paper (Fabozzi, 2009). The second type of strategies are fundamental strategies. According to proponents of these strategies, it is important to know where the company is heading and what its financial health is. And than investors can make the right decisions about their portfolio. The fundamental analysis realizes that the financial health of the company will affect the price of shares, while changing market stock prices trigger changes inside the business. Fundamental strategies focus on the company's profit and expected changes in it. Managers use special applications and programs to select the right actions. They select indicators which have the greatest impact on the ability to create business profits and use these applications to find the right businesses for the criteria. Managers analyze companies with the greatest potential in depth (Fabozzi, 2009). Passive strategies are divided into indexing and buy and hold. Both strategies are based on the theory of efficient markets. Oponents believe that the market will value assets objectively. A buy-and-hold strategy simply consists of investing in securities which the investor holds the investment horizon and sells the portfolio when he considers it appropriate. This style of investment is recommended for inexperienced investors. In the case of long-term regular investment, this strategy may decrease the impact of regular stock market fluctuations. The whole strategy is connected with right timing and in the length of the investment horizon. The downside is that during the expansion period buy and hold produces more average returns and therefore past profits may be absorbed. Another disadvantage is that it cannot fully exploit the power of capital distribution (Fabozzi, 2009).

If we look at time, we distinguish:

- Short-term strategy wich is usually strategy within one year. Relevant investment instruments are term deposits, savings accounts, cash funds. Less suitable tools are current accounts, whose real return (taking into account inflation). Within a time horizon of one to three years, the most appropriate reputed investments are in short-term bonds and bond funds, or also to guaranteed funds, structured bonds and structured deposits.
- Medium-term strategy is usually in the time horizon three to five years. This strategy more decides between higher possible returns and risks (for example shares, investment certificates, equity funds) and lower returns with greater confidence (for example medium-term bonds). Other possible instruments are pension funds, building savings and life insurance, which despite the low yield is more attractive because of state aid and tax relief.
- Long-term strategy is connected with five or more years. It is recommended to investment into stocks that give the opportunity to maximize the total return on investment. It includes so-called investment certificates and equity funds. The potential at risk, however hedge funds and special funds (real estate, derivatives, etc.). Less profitable and safer tools are long-term bonds (Kohout, 2013).

4. EARNINGS MANAGEMENT AND INVESTORS

Earnings management is a continual profit manipulation that aim is to achieve a predetermined goal. This goal can be set by management, or it can try to meet analysts' predictions. This may be the amount to be matched to some smooth, more sustainable flow of profits. Earnings management is one of the forms of creative accounting. It can be positively or negatively influenced by tax aggressiveness, institutional ownership and leverage (Susanto, Pirzada, Adrianne, 2019). Earnings management uses a large number of flexible accounting principles so that the reported profits reach a predetermined goal. The goal is also to maintain a long-term rate of profit growth that does not include sinks or steep peaks. These sinks or peaks are considered to be a normal course accompanying normal economic processes. Before companies come to the public, they use earnings management to raise the issue price (Sosnowski, 2018).
Motives for earnings management:

- avoid the stock price drop if the predicted profits are not met.
- Initial public offering (new securities).
- Maximizing management rewards based on profit-sharing.
- Compliance with credit agreements.
- Minimizing certain political costs (Goel, 2016).

4.1. Techiques of earnings management

This chapter briefly overviews and lists two techniques of earnings management. We choose these two techniques because we think that they can influence invetors to choose company for their future investment. Income smoothing is a form of earnings management where the main goal is to minimize the differences between peaks and slumps in the normal time series of profits (Trueman, Titman, 1988). Obviously, these efforts include attempts to reduce and withhold profits for good years and use them in the years of the weaker. Income smoothing is the possibility how profit development companies get rid of significant peaks and sinks (Hoang, Joseph, 2019). Businesses try to hold profits in good years and use them in worse years. It can be used by shareholders if investors are either "naive" and ignore management's ability to manipulate profits, or shareholders are educated and fully aware of the consequences of the strategy used. Some investors do not ignore management's ability to manipulate profits, they are just uninformed or they are not interested. Income smoothing is a tactic that is more common because it is stretchable from a period to a few years, while a big bath is a once-in-a-lifetime issue for a long time.

It is because it is based on the unusual and unrepeatable nature of some transactions (Baaj, Al-Zabari, Marshedi, 2018).

Figure 11: Effect of income smoothing

Source: Ozili, P. (2015). Income smoothing in the banking industry.

Big bath tactics are used when the company is in a loss. Management decides to "clean up" the accounts and therefore use the big bath for purposes of maximization of reported failure. The main idea is to show a greater loss in the current period, to increase profit in the next period. This is achieved by incorporating future costs into the normal place for the next period. Sometimes this tactic is used when new management enters. In this period, managment is going to make a huge loss so that they can make a profit and present themself in the following with improving economic results. According Overboom and Vergoossen (1997) big bath is technique when companies which suffer a bad year are taking more costs and losses into account in the bad year. These copmanies report a better result in the next year. The definition of big bath accounting by Fiechter and Meyer (2009) is that big bath accounting is the practice of reporting a bigger (accounting) loss. Some studies show that investors often look at the fact if earnings expectations were met. Investors 'punish' companies by lowering stock prices of the firm which reported a loss. Reporting an even bigger (accounting) loss had the effect that profits in future period were easier reported. For each investor, prediction is important. Whether there is a possibility and risk of bankruptcy within the business concerned (Kovacova, Kliestik, Valaskova, Durana, Juhaszova, 2019). A big bath can be applied if the firm believes that market opinion will not be affected, when profits fall, for example, by ten percent more than originally expected. Investors will not be surprised by the drop in profits by 30% much more than by 20%. It is important to distinguish these losses from losses incurred continuously over a longer period. Companies, which do not fulfill expectations, have the opportunity to write off unsuccessful investments or bad debts, or sell unwanted assets at a loss. Companies often use big baths to "clean up" their balance sheet by moving a large amount of costs during a single year. This is how companies miraculously revive the followingan accounting period when cost estimates are lower and higher. Profits are expected to appear in the future (Tenton, 2008). Both tactics are very different, at lest, because of the different numbers of them make. There are several reasons for income smoothing tactics. This can be associated with the size of the company and diverting current profits from predicted expectations. Stimuli can be divided into several categories. This may be due to a reduction in volatility company profits (stable levels of profits), increasing the value, dividends and share prices of a company, and last but not least, these are money-related aspects (increased management rewards, increase subsidies from the

state, reduce income tax). This results lead to change information contained in the financial statements. This means that, ultimately, the useage of these techniques of earnings management leads to influencing investors when they make decision about their future investments, whether or not to invest in a company or company securities.

5. CONCLUSION

Investing is the conscious activity of an investor who puts his temporarily free resources into financial assets. These financial assets shall be valued over a predetermined time horizon. The investor should be aware that, at the end of the time horizon, the expected investment outcome may be unfavorable and must accept a certain degree of risk by entering the market. In the first chapter the article contains theoretical background of the researched issue. It evaluates the notion of investment, investor and earning management. The next chapter summarizes the methodological procedures and literature used in writing the article. Subsequently, we described the different types of investors, based on the risks they take in creating their investment portfolio. Based on the division we choose, we divide investors into non-risk investor, conservative investor, balanced investor, growth investor, aggressive and speculative investor. Currently, investment strategies can be divided into several groups - strategies based on technical analysis, strategies based on fundamental analysis, passive strategies and buy-and-hold strategies. The choosing of the strategy then depends on several factors, such as how much the investor invests, what risks he will take, the investment horizon. In the next part of the article we focused on earnings management. Earnings management is a process of changing the financial statement with the purpose of either concealing real economic conditions or attaining private gains out of contractual outcomes which rely on accounting numbers. Two basic techniques of earnings management are income smoothing and big bath. The reason for choosing these techniques is that through them the company can influence investors. The main aim of income smoothing is to try to smooth the profit so that the profit does not decrease and, at best, has a growing character. In the case of the big bath, the company does not eliminate the loss in the company, but rather deepens it. In the future, the company can artificially increase its profits. Both techniques are used by businesses to influence investors. The investor thus choose the company from which he expects the highest profit, the highest return of his investment.

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INSTITUTIONALIZATION OF BUSINESS ACCOUNTING OF ELEMENTS OF SOCIAL CAPITAL

Victor Plotnikov
Novosibirsk State University of Economics and Management «NINH», Russian Federation
vcplotnikov@yandex.ru

Olesya Plotnikova
Novosibirsk State University of Economics and Management «NINH», Russian Federation
vcplotnikov@yandex.ru

ABSTRACT

The fundamental concepts of integrated reporting direct accountants and researchers in the field of accounting to develop and refine the traditional accounting methodology, since the state and transformation of capital are indeed fundamental problems of accounting and should be included in its subject. This problem concerns social capital, as well as the possibility of including its objects in assessing the value of a business. In the framework of this article, the authors set the task of explaining the significance of objects of social capital and the need for its reliable reflection in integrated reporting, with the prospect of developing a business accounting model for social activity. At the same time, the main focus of the study is on the use of a business model for accounting for social capital, which provides an alternative to the traditional model of financial accounting for social security. In this case, in accordance with the institutional theory, it is necessary to develop new accounting methods that provide a business accounting system for defined benefit pension schemes, which are an integral part of the organization's social capital stock. To achieve this goal, it is advisable to use the theory of economic agreements, which aims to modify the defined benefit pension schemes that ensure the formation of a stock of the cost of social capital: a pension program from the organization's resources, a pension program from the organization's resources and employee wages, as well as pension schemes with state funds. This model of business accounting for social capital fits organically into the fundamental concepts of integrated reporting and can be an integral part of an integrated report. Without information on social capital, it is difficult to achieve a balanced social security system in which commercial organizations, future pensioners and the state are involved.

Keywords: *integrated reporting concept, business accounting model, social capital, defined benefit pension schemes*

1. INTRODUCTION

In the fundamental concepts of integrated reporting (ISIR, 2014, p.2.15), the social capital of an organization is combined with reputation capital in the total value of the stock of social and reputation capital: «social and reputation capital - institutions and relations within and between communities, as well as between stakeholder groups and other groups, and the ability to share information to enhance individual and collective well-being». The concept of social reputational capital given in fundamental concepts defines various institutions and relations within the community». This is a general concept that is difficult to correlate with the concept of the organization's assets that define social capital. Therefore, the article highlights and substantiates social capital by the example of a separate element of an organization's economic asset, which has a social orientation in the organization's activities. At the same time, the main attention is paid to the problem of determining the company's ability in the field of social security of employees of the organization and the reflection of this possibility in the stock of the cost of social capital.

The simplest explanation of the concept of social capital of a company can be given by linking it to «types of functioning». The types of functioning are components of the state of the organization's assets, how it uses them and for what purposes in the process of creating value in the short, medium and long term, as well as the organization's ability to reflect alternative combinations of transforming financial capital and investor funds, including employees of the organization, to ensure the social well-being of a person within the capabilities of a particular organization. Certain types of functioning are basic, for example, social and medical support for employees of an organization, social and housing support, the creation of additional non-state pension funds of a company within a separate company or group of companies. These types of functioning can be designated in the form of social assets, that is, the social capital of the organization. Other elements of social capital are more difficult to quantify, but no less significant, for example, social integration, social climate, etc. At the same time, the organizations themselves are significantly different from each other in assessing the value of business and the possibility of transforming capital, more precisely, financial capital, which mainly ensures the formation of social capital assets. Here it's difficult to «get rid of the problem of evaluation when choosing the types of functioning included in the description and characterization of opportunities. It is necessary to concentrate on the basic interests and values, depending on which some defined types of functioning can be important, and others trivial and not significant» (Sen A., 1992).

2. INSTITUTIONALIZATION OF BUSINESS ACCOUNTING OF ELEMENTS OF SOCIAL CAPITAL

When solving the problem of recognition and evaluation of objects of social capital, it is necessary to answer two questions: what types of social activities are significant for the organization to distinguish them in the business accounting model as its separate objects and how to assess the stock of the value of objects of social capital? In addition, the identification of a set of significant objects of social activity with a positive value implies ranking. Such a ranking implies the classification of objects of social capital in order to distinguish from them objects that are subject to accurate and objective evaluation, and objects of social activity with a poorly defined assessment, but also requiring costs for the formation of their value. In fact, a consistent assessment method contains a class of «informational constraints: excluding the direct evaluation of the use of various types of information that are not in the assessment space» (The philosophy of economics. An Anthology, 2012, p. 329). The choice of a place and space for evaluating objects of social activity only allows you to determine the objects of social capital in terms of their usefulness and the possibility of financial support, i.e. use of financial capital. The identification of objects of a social nature implies the existence of certain criteria that depend on the purpose of the assessment. In such a situation, we propose to form a four-level model for assessing objects of social capital, based on two distinctions. The first distinction concerns the choice between the social security of the organization's employees and their social significance, for example, at the public level. The second distinction is manifested in the possibility of achieving social goals and the freedom of the entrepreneur in the implementation of this achievement. These two distinctions «give four different concepts of an individual's advantage:

1. «achievement of welfare»;
2. «agent achievement»;
3. «freedom in the implementation of welfare»;
4. «freedom in the implementation of agency goals» (The philosophy of economics. An Anthology, 2012, p. 333).

Here one cannot do without the institutional concept of principal-agent relations, or rather, its model of social relations within the framework of the organization designated as coordination (coordination) of actions ensuring the coherence of interests of owners and economic agents in the principal-agent model. In this «principal-agent» model, Holmxtrom B. and Milgrom P. (Holmxtrom B., Milgrom P., 1987, p. 303), as well as most researchers of institutional economics, see the problem of asymmetry of information between the principal and the agent. However, they do not provide answers to questions that are important for building a business accounting model in a common business model for creating value:

- «What is the state of the information available to owners and managers after the conclusion of the contract, and what role does the uncertainties of economic life play in this problem?
- What are the exact contract incentive systems between owners and managers ...?
- What is the time structure for concluding and executing such contracts?» (Furubotn, E., Richter R., 2005, p. 244).

It should be noted here that different business accounting models have different goals, for example, creating business accounting models in the formation of information support for creating corporate «pension programs» will differ from the business accounting model for the construction of social and cultural facilities, although both others should reflect the social orientation of the company's activities. In our study, we consider it appropriate to pay attention to the problem of corporate pension provision, which is an element of the organization's social capital, since «social and cultural value — adding value to the public realm by contributing to social capital, social cohesion, social relationships, social meaning and cultural identity, individual and community well-being» (Benington, 2009, p. 237; Katsikas, E., Rossi, FM, Orelli, RL, 2017, p.20). It should be noted that the social and cultural activities of an organization are a form of adding value, that is, a form of creating business value over the long term. This is the process of creating a stock of the value of social capital, intended for additional retirement benefits for workers in the future. This is not to say that this problem has not been considered previously in the field of accounting. So, some issues have been included in the scope of the International financial reporting standard (IAS) 19 «Employee Benefits». Nevertheless, this problem, in our opinion, is an object of study of social capital in the integrated reporting system and should be considered as an element of financial capital, which determines the possibility of forming a stock of the cost of social capital of the organization. When it comes to formalized programs or other formalized agreements (IFRS (IAS) 19, 2015), self-fulfilling agreements are meant, with formalized, i.e. monetary obligation between the organization and its employees, and not the actual use of financial capital with the aim of additional remuneration to the employee upon termination of his labor activity (with retirement). To analyze the content of formalized defined benefit pension schemes, we turn to the Conceptual Framework for the Presentation of Financial Statements (CFPFS, 2018), which determine the content of economic resources and obligations. «An economic resource is a right that has the potential to create economic benefits. <...> It is only necessary that this right already exists and that, at least in certain specific circumstances, this right could create economic benefits for the organization that exceed the benefits that are available to all other parties». This concept must be used in the business accounting of social capital in the formation of formalized defined benefit pension schemes. However, the main thing for business accounting is the following paragraph of CFPFS: «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». Consequently, defined benefit pension schemes can be reflected in the integrated statements as an entity's assets. In our study, we consider it necessary to pay attention to one more aspect set forth in IFRIC Explanation 14, namely, formalized programs. This aspect shows the position of a positive accounting theory in which a creative accounting system can be used.

The position of creative accounting can be explained from the perspective of agent theory, according to which «individuals behave rationally, seek to maximize and care, first of all, about their own interests. Firms act as a means of keeping under control «destructive opportunism» (otherwise - the desire for third-party, «new» earnings of individuals, especially those who perform the duties of agents)» (Mathews M.R., Perera M.B., 1999, p. 458). I'M IN. Sokolov defines this direction of accounting as «desk accounting, especially in its developed form, which involves accounting for estimates and obligations arising from contracts, and not just their implementation» (Sokolov YV, 2000, p. 88) and suggests highlighting: «use data not only for accounting for the use of contracts, but also for accounting for obligations arising from them;» (Sokolov Y.V., 2000, p. 88). We would combine these two areas of accounting in the theory of positive accounting. «Analyzing the position of the authors (G.V. Simon, O. Schmalenbach, F. Schmidt, R. Vots, J. Zimerman and others), we can conclude that the most understandable goal of a positive theory of accounting is to provide useful, predictable information to its users on the effectiveness of the company's functioning in the market» (Plotnikov VS, Plotnikova OV, 2014a). As part of our study, we are talking about the formalized value of the organization's pension programs with defined benefits in the future upon completion of work by citizens in specific organizations, expressed as economic resources and obligations of the organization, with the subsequent transformation of these economic resources and obligations into facts of economic life, etc. e. to the reserve of funds of financial capital, providing additional employee benefits in the future. This position can be taken as the working hypothesis of business accounting for social capital. In this situation, transaction costs in the investment process of social security play a significant role. The problem arising from the occurrence of transaction costs determined by the time lag between the formalized agreement of the pension program and its execution can be identified by the lack of reflection of transaction-specific investments in target assets that form the data on the stock of the cost of social capital. One of the main problems of monetization (formalization) of indicators of social (pension) security is the assessment of future domestic investments that are transformed from the financial capital of the organization to social capital. It should be borne in mind that: «The assessment is not scientific, no matter what some of its advocates say. Nor is it an objective search for systemic value, no matter how idealists desire it. The models used in the assessment may be quantitative, but the input data leave a lot of room for subjective judgments» (Damodaran A., 2014, p.16). In our study of assessing the cost of social capital, the input, reflected in the form of economic resources, is an attempt to formalize the future valuation of the funds needed to pay «pension benefits» upon termination of work by employees in the organization. The subjectivity of the assessment of such social assets is manifested in the fuzziness of their definition:

- the duration of the person's labor activity within the organization;
- the uncertainty of the amounts of defined benefits, since: «Defined benefit programs are post-employment benefits programs in an organization other than defined contribution programs».

In addition, it should be borne in mind that future cash flows when creating value over time are constantly formed and the employees of the organization participate in this process throughout their work in the organization, and, therefore, participate in the formation of profit, which is an element of financial capital. Therefore, in the structure of business accounting, the hypothesis of information uncertainty can be accepted when monetizing the indicators of defined benefit pension schemes. In the framework of defined benefit pension schemes, social assets represent the employee's specific right to an amount of cash fixed by agreement upon termination of employment, and obligations are the organization's obligation to pay the employee in the future, upon termination of employment, the amount of cash fixed in the agreement.

Undoubtedly, at the end of the employee's labor activity and the transformation of economic resources and liabilities into an element of the reserve of financial capital funds, it should be borne in mind that the cost of such funds should be adjusted for the amount of changed liabilities and this adjustment of the value of defined benefit pension programs should be reflected in other comprehensive income under «actuarial gains and losses» for defined benefit programs when they are not recognized in profit or loss. As an alternative to the existing and recommended IFRS system of accounting for expenses for defined benefit pension schemes for the business accounting model of social capital, we can propose a mechanism for accounting for financial instruments, namely stocks, for retirement benefits for employees in the future. As E. Black notes: «In the future, stocks will increasingly reflect pension problems» (Black E., 2009, p. 57). However, to develop such a model of business accounting for social capital, first of all, it is necessary to investigate the possibility of pension programs transforming into shares with subsequent payments on them upon retirement of employees. Such a model of business accounting of social capital will require the involvement of not only professional accountants, but also professional financiers, both working in organizations and participating in exchange transactions. Unfortunately, it should be noted that: «in most countries, the movement towards the development of a private pension system is very small or completely absent: only 25% of employees in European countries have some form of private pension provision» (Black E., 2009, p. 57). This fact of unwillingness of private capital and refusal of its participation in pension provision, most likely, depends on the lack of understanding by entrepreneurs of the mechanism of action of financial instruments. In fact, the problem of pension provision is not solved by issuing ordinary shares to the employee in the amount of accrued pension provision, but by issuing him a call option - a share agreement. The call option gives its holder the right to receive, after the expiration date, the date after which the fulfillment of the option terms is considered irreversible, a certain number of shares. At the same time, obligations arise for the organization to give the employee a certain amount of secured shares upon his retirement. To explain the mechanism of action of options in this situation, we turn to IAS 19 «Employee Benefits»: «Accounting for defined benefit programs is quite complicated because actuarial assumptions are required to estimate liabilities and expenses and there is a possibility of actuarial gains and losses. Moreover, liabilities are measured on a discounted basis, because they can be settled many years after the employees render the corresponding services» (IFRS (IAS) 19, 2015, p.55). It is in this case that the financier's professionalism is required, involving the services of a sociologist, which should take into account «the use of actuarial calculations, the method of the forecast unit for a reliable assessment of the total costs of the organization for payments due to employees for the services rendered by them in the current and previous periods» (IFRS (IAS) 19, 2015, p.57) to establish the percentage of deductions from the remuneration transferred to the employee. This complexity also discourages entrepreneurs from forming within the organization of a defined benefit pension scheme, and not only this one. The fact is that entrepreneurs are not aware of the fact that defined benefit pension schemes do not oblige them to transfer funds on the same day on accrued employee salaries or even create a reserve of funds within the organization in the reporting period. Contributions to defined benefit pension plans are monetary contributions that form the right to an economic resource, rather than a real supply of cash. Here it is advisable to use options as a mechanism confirming the right of its owner to receive in the future a certain number of shares upon retirement of an employee. «It is important to remember that the existence of any obligations does not mean at all that there is money to pay them off. And in fact, until the employee has retired, the pension obligation will not be fulfilled, which means that today is not a day required for these purposes» (Hendricksen E.S., 1997, p. 466). Therefore, no accounts payable to the organization does not arise. Defined benefit pension capitalization arrears occur when an employee has earned retirement benefits.

Consequently, accounts payable to an organization can arise before an employee only if this employee has the right, upon termination of labor activity, to receive the entire amount calculated according to the pension program throughout the entire period of labor activity in the organization. Only in this case, it is necessary to create cash reserves in the framework of financial capital. In other cases, defined benefit pension schemes should be considered as options (contracts) for shares with future payments, i.e. payments under a contract (option) upon termination of employment within the organization, but not in cash, but in shares giving its owner the right to receive cash. Ordinary shares issued to pay off the pension due to pay off the option debt of all or part of the financial liability should be considered as an element of the value of the stock of social capital, with the capitalization of the cost of the stock of financial capital. In other words, this financial transaction should be considered as the pension received by the employee, paid in ordinary shares, regarded as financial assets of financial capital, while the employee becomes the owner of ordinary shares at the end of labor activity and has the right to receive dividends from these shares or may sell them, or inherit, etc. Again, we want to draw the attention of the domestic entrepreneur to the fact that this is not about the simultaneous payment of money to the employee upon completion of the seniority, but about the issue of securities, the payment of which repays his financial obligations to the employee upon his retirement. Moreover, the amount of this remuneration can repay only part of the financial obligation and not relate to a change in the terms of the obligation, which remains outstanding. The main thing about the business model of accounting for social capital is that the remuneration paid on a defined benefit pension plan in ordinary shares should be recognized as an element of the stock value of social capital.

3. CONCLUSION

In conclusion, we would like to note that economic resources and obligations are objects of accounting and, accordingly, should be included in its subject: «obligations and law of obligations along with factors of economic life are elements of the subject of accounting and are determined by elementary moments of the financial and economic process, confirming or changing the financial condition of the organization in the structure of the balance sheet generalization» (Plotnikov VS, Plotnikova OV, 2013). At the same time, business accounting reflects a new direction in the development of accounting, as: «The principal distinguishing feature of business accounting should be the transfer of emphasis in the formation of information on future value creation processes over time» (Plotnikov V.S., Plotnikova O.V., 2014b). Therefore, in the business accounting of social capital in terms of defined benefit pension schemes, it is necessary to introduce the accounting of financial instruments (options) that allow settlements with employees upon completion of their employment in the organization in the future.

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ANALYSIS OF THE DIGITAL TRANSFORMATION INFLUENCE ON THE ECONOMIC GROWTH OF THE REGION

Vladimir Glinskiy
Novosibirsk State University of Economics and Management, Russian Federation
v.v.glinskij@nsuem.ru

Lyudmila Serga
Novosibirsk State University of Economics and Management, Russian Federation
l.k.serga@nsuem.ru

Sergey Tsurikov
Novosibirsk State University of Economics and Management, Russian Federation
s.v.tsurikov@nsuem.ru

Victor Plotnikov
Novosibirsk State University of Economics and Management, Russian Federation
v.s.plotnikov@nsuem.ru

ABSTRACT

We live in an era of digital transformation. Informatization of society has led to new realities, to a new paradigm of the state development, economy and society as a whole. Today, the main trend of Russian domestic policy is digitalization, accelerating the pace of technological change, opening up new opportunities for economic growth through digital transformations, including changes in the regions. However, the following problem remains unresolved – What is the digital economy and how to evaluate it? The authors offer their interpretation of the digital economy definition and the solution of its statistical evaluation problem. The study is devoted to the analysis of the impact of digital transformation on the socio-economic development of territories; attempts are made to solve the problem of assessing of digitalization contribution to the economy of the country and regions. An analysis of the advantages and disadvantages of various methods and techniques for assessing the unevenness of the digitalization process of the state, business and society has been performed. Well-known methods and indicators are not always effective, for example, the problem of the formation of the socio-economic indicators system, indicators of the digital transformation level at the municipal management level remains. To assess the digitalization level of business and households, we propose using integrated indicators calculated using 5 primary business indicators and 6 households indicators. A methodology for assessing of disproportions scale in the digital transformation of the Russian regions is proposed in the work. The authors performed a typology of the Russian Federation constituent entities according to the digitalization degree of business and households. Using the regression model, the dependence of the region economic development on the level of digital transformation and the territories disproportions degree is proved.

Keywords: *Disproportions in Digital Transformation, Digital Economy, Economic Growth, Region, Russian Federation*

1. INTRODUCTION

We live in the digital age. Digital technologies, digital data and new connections and relationships arising in the process of their use cause cardinal changes in society and the economy. A multiple increase in the volume of information, the global digitalization of society and the transformation of socio-economic phenomena associated with it have led to new

realities, to a new paradigm for the development of the state, economy and society as a whole (Glinskiy, Serga, 2011, p. 110). A new impetus for the development of the digital economy in Russia has become the "Digital economy of the Russian Federation" Program (Russian Federation Government Order, 2017), which has identified three priority areas: Markets and sectors of the economy, Platforms and technologies, Information ecosystem. In the process of solving the strategic task of the development of the digital economy, there are tactical tasks of assessing the level of digitalization of society and measuring the digital economy, analysis of the degree of influence of digital transformation on the economic growth and region development. However, the problem of the content of the definition "digital economy" and the problem of its assessment remain unresolved in the scientific community. The authors of the article offer their interpretation of the digital economy definition and the issues of its statistical accounting. Today, statisticians from different countries are quite actively and fruitfully addressing the issues of assessing the digitalization level of countries, territories, industries, society and population. This is solved by collecting information and analyzing certain aspects of the digitalization process, such as resources, technologies, and personnel (Competition in the digital age, 2018; Development of the digital economy, 2018; Digital Dividends, 2016; DECA, 2017; Digital Russia, 2017; Methodology, 2018; Social and economic impact, 2017; Value creation, 2019). However, the problem of measuring the scale of the digital economy has not yet been resolved, even approximately. All attempts to estimate the volume of the digital economy come down to assessing the resources and scope of the digitalization process. The problems of measuring the digital economy are in the center of attention of statisticians of all countries: they are discussed at meetings of international statistical organizations, they are on the agenda of national statistical services, and they are the subject of scientific research (Gokhberg, 2019; Khokhlov, 2017; Lovelock 2018). There are various approaches. For example, Tatarinov A.A. believes that the measurement system should be based on a system of national accounts (SNA) (Tatarinov, 2019, p. 7). SNA satellite accounts will be able to objectively measure the economic transactions that forming the digital economy because they are the tool for measuring fuzzy industries that do not have clear boundaries in the framework of the International Standard Industrial Classification (ISIC). Other approaches are simply aimed at measuring individual aspects of digitalization (Gokhberg, 2019).

2. DIGITAL ECONOMY AS AN OBJECT OF STATISTICAL ACCOUNTING

To solve the problems of accounting for the digital economy, it is very important to correctly identify it as an object of statistical accounting. The term digital economy is very young (it was first proposed in 1995 by the American scientist Nicholas Negroponte), today it is as popular as it is not defined. There is confusion in terms. Digital economy represent a set of concepts, such as the Internet economy, the electronic economy, the ICT sector, the digital sector, electronic business, the digitalization process, the digital society and the information society. So what is the digital economy and how to take it into account, measure it?

2.1. Definition of the digital economy

A critical analysis of modern publications on digitalization and informatization testifies that the digital economy is not digitalization itself, but it is digitalization result in the following areas:

- digital transformation of the economy, society, business and government;
- transition from analogue to digital production;
- digital production that is optimization of the workflow through hardware and software solutions (it is implies not only the replacement of production tools, but also the introduction of analytical systems that make production as cost-effective as possible).

At the same time, not any digitalization is a blessing, but only one that leads to additional profit growth. Analysis of economic entities functioning mechanism revealed that the "digital economy" action principle is the same as that of any economic activity (Figure 1). At the same time, resource consumption is growing while reducing personnel costs, and the growth rate of product manufacturing is higher than the growth of resource consumption.

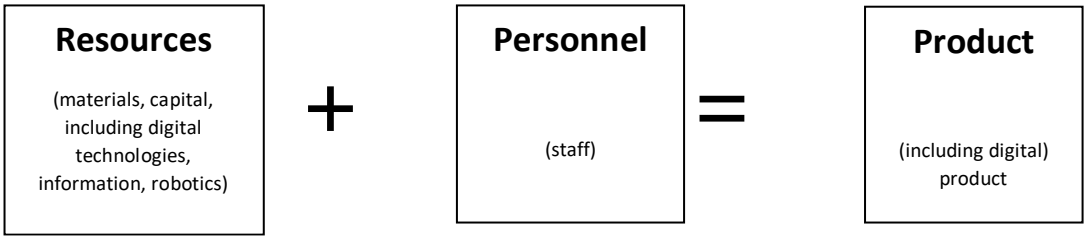

Figure 1: The operating principle of "Digital Economy"
(Source: Submitted by the authors)

Thus, the digital economy is not something new, but part of the general concept of "economy". If the traditional economy is the society economic activity, as well as the totality of the relations that take shape in the system of production, distribution, exchange and consumption, then the digital economy is an economic activity based on digital technologies and associated with electronic business and e-commerce, but also electronic goods and services that produced and sold by them. Payments for services and goods of the electronic economy are often carried out also by electronic money. This is the evolutionary development of a traditional economy. All terms and categories related to the traditional economy (an object of economic relations, an economic entity, a product, a service, an economic transaction, etc.) can be used in relation to the digital economy. So, the economy is one! An economy with any adjectives (green, innovative, resource-saving, efficient, competitive, new) is the same economy!

2.2. Problems of accounting and evaluation of the digital economy

However, the digital economy has its own specifics and, first of all, as an object of statistical accounting and analysis:

- lack of a clear and approved (or at least well-established) concept of the digital economy;
- artificially allocated statistical population uniting business entities, economic entities, and economic operations;
- lack of international standards and methodology in the field of statistical measurement of the digital economy;
- the relevance of monitoring this phenomenon is related to the need to evaluate the results of the implementation of the Russian Federation National Project "Digital Economy";
- the problem of reliability of the obtained statistical information from business entities;
- an open system with a global market, new connections and relationships (B2B, B2C, p2p, distributed production, consumption, etc.), new intangible products, new forms of activity (IoT), resulting in unobservability of certain operations (the possibility of going into the shadows);
- unstructured and unclear transformations and transactions in terms of accounting.

There are 9 main problems of accounting and analysis of the digital economy (Glinskiy, Serga, 2018, p. 47):

1. The complexity of the object of observation;
2. The problem of identification of subjects and objects of the digital economy;

3. The problem of identifying business transactions (production and distribution of products, financial and non-financial services, consumption, accumulation) that are forming the digital economy (Glinskiy, Serga, Zaykov, 2017);
4. The lack of a scorecard;
5. Lack of methods for evaluating the results of the digital economy;
6. The problem of coverage of all business entities operating in the digital economy segment;
7. The problem of the reliability of information at the level of types of economic activity and regions;
8. There is no single methodology for collecting, processing and analyzing statistical information on the digital economy;
9. Lack of flexible use of statistical information by all interested users.

The proposed lists of indicators, including indicators of the national project "Digital Economy of the Russian Federation", cannot be called a system, since these are indicators that characterize only certain aspects of the digitalization process in the country. The proposed lists of indicators, including indicators of the national project "Digital Economy of the Russian Federation", cannot be called a system, since these are not related indicators that characterize not the digital economy, but only certain aspects of the digitalization process in the country.
None of the reporting forms and none of the lists of indicators include efficiency indicators of digitalization and the digital economy. Business entities of not all types of economic activity and not all categories of business participate in the survey, due to the fact that there is a misunderstanding of the essence of the digital economy and its subjects. The digital economy, according to the authors, is not only an activity carried out within the framework of electronic communication channels, but also production based on computer technologies (additive production), the use of artificial intelligence, and robotics. As a result, we have a truncated, incomplete picture of the development of the digital economy in the country.

2.3. The possible ways of solving the observation problems of the digital economy

To get out of the existing situation, we offer possible solutions to the identified problems:

1. It is necessary to theoretically distinguish between the concepts of digitalization and the digital economy;
2. To solve the problem of identifying subjects and objects of the digital economy, it is possible to establish criteria for classifying business entities as the studied population, either by the share of high-tech products produced, digital services provided, or by the level of automation and digitalization of business processes;
3. To identify business transactions (production and distribution of products, financial and non-financial services, consumption, accumulation) that form the digital economy, define and establish clear criteria for classifying business (economic) operations as a digital economy (Glinskiy, Serga, Zaykov, 2017)
4. Develop a system of indicators characterizing all aspects of the digital economy, and not just digitalization processes, starting with resources, the number of organizations by type of economic activity, and moving on to the gross output of digital and high-tech products and services, and the amount of value added received in the digital economy and profit;
5. Develop a methodology for evaluating the results of the digital economy, for example, based on the formation of satellite accounts of the Digital Economy (like tourism and health accounts), which will determine the contribution of the digital economy to the country's economic growth;
6. In order to cover all business entities operating in the digital economy segment, apply, on a par with paper forms of reporting, electronic, the creation of a statistical platform, the use, for example, of the public services platform formed in Russia, subject to the mandatory

registration of all organizations, individual entrepreneurs, self-employed and home households for reporting and mandatory online surveys;
7. The solution to the problem of reliability and reliability of information at the level of types of economic activity and regions is possible by optimizing the processes of collecting and processing primary data (statistical reporting, information obtained through a statistical platform, using alternative sources of data - big data if possible);
8. Development and approval of a unified methodology for the collection, processing and research of the digital economy at the regional level and type of economic activity, in order to determine the contribution of the types of economic activity, the region to the digital economy of the country;
9. To enable flexible use of statistical information by all interested users, posting information on the websites of national statistical services, including on the Rosstat website in Russia.

3. ASSESSMENT OF THE INFLUENCE OF DIGITAL TRANSFORMATION ON THE ECONOMIC GROWTH OF TERRITORIES

Until the above statistical problems have been resolved, researchers are able to use only the characteristics of the digitalization level of the economy and society and determine on their basis the degree of influence of digital changes on the economy as a whole. The following is an analysis by the authors of the impact of digital transformation on the socio-economic development of the territories of the Russian Federation.

3.1. Scorecard and methodology for assessing indicators of the level of digitalization

Based on the statistics of the Higher School of Economics (Digital Economy Indicators, 2019), the authors identified two indicators characterizing the level of digitalization of households and the level of digitalization of business in 82 regions of the Russian Federation for 2018. To calculate the first indicator, 6 indicators of telecommunication infrastructure and Internet use in households and the population in the constituent entities of the Russian Federation were used:
1. Subscribers of fixed broadband Internet access per 100 people population (units);
2. Subscribers of mobile broadband Internet access per 100 people population (units);
3. The proportion of households with broadband Internet access, in the total number of households (percent);
4. The proportion of the population using the Internet in the total population aged 15-74 years (percent);
5. The proportion of the population using the Internet to order goods, services, in the total population aged 15-74 years (percent);
6. The proportion of the population using the Internet to receive state and municipal services in electronic form, in the population aged 15-72 years, who received state and municipal services (percent).

The following 5 indicators were used to calculate the indicator of the degree of business digitalization:
1. The proportion of organizations (in the total number of organizations) using broadband Internet (percent);
2. The proportion of organizations (in the total number of organizations) using cloud services (percent);
3. The proportion of organizations (in the total number of organizations) using RFID technology (percent);
4. The proportion of organizations (in the total number of organizations) using ERP-systems (percent);

5. The proportion of organizations engaged in electronic sales using special forms available on the website / extranet, EDI systems, in the total number of organizations (percent).

As a result, 2 source data matrices were generated for the Russian Federation: the first have with a dimension of 82 regions for 6 indicators, the second - 82 regions with 5 indicators, according to which regional digitalization indicators were determined. Indicators are integral characteristics. Indicators were calculated by the multivariate average method for several key digitalization indicators, normalized to the maximum value among the subjects of the Russian Federation. Indicators do not have units.

3.2. Typology of the Russian Federation constituent entities on the level of digitalization

The applied standardization technology allows determining the limits of variation of the indicators of the degree of digitalization in the range from 0 to 1 (Glinskiy, Serga, Khvan, 2016; Glinskiy V., Serga L., Khvan M., 2015; Glinskiy V., Serga L., Khvan M., Zaykov K., 2018). This makes it possible to divide the totality of regions into three equal groups for each indicator obtained:

- Low level [0 - 0.33];
- Middle level (0.33 - 0.67];
- High level (0.67 - 1].

According to the results of the calculation of indicators, it turned out that the degree of digitalization of both households and business in Russia is at an average and high level. A low level of business digitalization is observed only in the Republic of Dagestan. As a result, 9 groups obtained (Table 1) can be combined into 4 types of subjects:

1. Regions in which the business does not use the potential of digitalization of households. One region belongs to this type - the Republic of Dagestan;
2. Regions in which the business is not sufficiently exploiting the potential of digitalization of households. Most of the regions (50) belong to this type;
3. Regions in which the business makes good use of the digitalization potential of households, there are 26 in the Russian Federation;
4. Regions - drivers of the digitalization process for both households and businesses. These are 5 regions: Moscow, St. Petersburg, Moscow Region, the Republic of Tatarstan and Sverdlovsk Region.

Table following on the next page

Household Digitalization Indicator	**Business Digitalization Indicator**		
	Low	Middle	High
Low	0 Regions	50 Regions – Altai Territory, Amur Region, Arkhangelsk Region, Astrakhan Region, Belgorod Region, Bryansk Region, Volgograd Region, Vologda Region, Voronezh Region, Irkutsk Region, Kaliningrad Region, Kaluga Region, Kamchatka Region, Kostroma Region, Krasnodar Region, Krasnoyarsk Region, Kursk Region , Leningrad region, Lipetsk region, Magadan region, Murmansk region, Omsk region, Orenburg region, Nizhny Novgorod region, Novosibirsk region, Penza region, Primorsky Ai, Altai Republic, Republic of Bashkortostan, Republic of Buryatia, Republic of Karelia, Republic of Komi, Republic of Sakha (Yakutia), Republic of North Ossetia-Alania, Rostov Region, Ryazan Region, Samara Region, Saratov Region, Sakhalin Region, Smolensk Region, Stavropol Territory, Tambov Region, Tomsk Region, Tula Region, Tyumen Region, Udmurt Republic, Khabarovsk Territory, Chelyabinsk Region, Chuvash Republic, Yaroslavl Region	5 Regions – Moscow, St. Petersburg, Moscow region, Republic of Tatarstan, Sverdlovsk region
Middle	1 Region – Republic of Dagestan	25 Regions – Vladimir Region, Trans-Baikal Territory, Jewish Autonomous Region, Ivanovo Region, Kabardino-Balkarian Republic, Karachay-Cherkess Republic, Kemerovo Region, Kirov Region, Kurgan Region, Oryol Region, Novgorod Region, Perm Region, Pskov Region, Republic of Adygea, Republic of Kalmykia, Republic of Crimea, Republic of Mari El, Republic of Mordovia, Republic of Tuva, Republic of Khakassia, Sevastopol, Tver Oblast, Ulyanovsk Oblast, Chechen Republic, Chukotka Autonomous Okrug	1 Region – Republic of Ingushetia
High	0 Regions	0 Regions	0 Regions

Table 1: Typology of the Russian Federation subjects in 2018 by the level of household and business digitalization
(Source: Submitted by the authors)

3.3. Scorecard and methodology for assessing digitalization indicators

An assessment of the unevenness of the digitalization process of the business and society of the Russian Federation indicates that the variation in the results of the introduction of digital technologies in the territorial context in business is higher than for households (the coefficient of variation is respectively 17.3% and 11.1%). The imbalances in the digital transformation of the regions of the Russian Federation can be estimated using the quartile or decile coefficient of differentiation (Table 2). These coefficients indicate a slight regional differentiation of the process in question.

Index	**Household Digitalization**	**Business Digitalization**
The coefficient of variation, %	11.1	17.3
Quartile coefficient of differentiation	1.120	1.243
Decile coefficient of differentiation	1.302	1.520

Table 2: The indicators of variation and differentiation of the business and society digitalization level in the Russian Federation in 2018
(Source: Submitted by the authors)

3.4. Model of the dependence of regional development on the level of digitalization

Correlation analysis allowed us to establish an average relationship between the indicators of digitalization of households and businesses (r = 0.568), and between the average per capita level of gross regional product (GRP) (the average per capita level of gross regional product is an indicator of the level of economic development of the region) and the indicators of digitalization of the population (r = 0.479) and business (r = 0.283). Using the regression model, the dependence of the economic development of the regions (y) on the level and scale of the digital transformation of society and business is constructed and proved:

$$y = -1236430 + 2415234{,}8\, x_1 + 63858{,}8\, x_2$$

Here:
x_1 is the indicator of household digitalization,
x_2 is an indicator of business digitalization.

The multiple correlation coefficient is 0.480, the multiple regression equation is significant according to the F-criterion (F_{calc} = 11.8). The model indicates that the digitalization of households affects the level of regional economic development 37.8 times more than the digitalization of business (2415234.8 / 63858.8 = 37.8).

4. CONCLUSION

As conclusions, it can be noted that the digitalization of households and businesses in the regions of the Russian Federation is at an average and high level, with an overall low territorial unevenness in the introduction of digital technologies, it is higher in business than among households. In addition, enterprises and organizations use digital technologies to a lesser extent than the population (in 62.1% of the regions, the business does not sufficiently use the digital potential of households). There is an average correlation between the average per capita level of the gross regional product and the indicators of digitalization of the population and business; the regression model shows that the active introduction of digital technologies by households has a 37.8 times stronger effect on the level of regional economic development than digitalization of business.

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THE ART OF ACCOUNTING

Vladimir Kiz
Novosibirsk state university of economics and management, Russian Federation
v.v.kiz@edu.nsuem.ru

ABSTRACT

Against the background of ongoing disputes about the scientific component of accounting, this article explores the question of how related accounting and art are. The American Institute of Chartered Public Accountants defines accounting as the art of recording, classifying, taking stock, operations and events that are, at least in part, financial in nature and interpret their results. In the article we tried to prove that in this definition the word "art" was not used by chance. So, Werner Heisenberg, Nobel Prize winner in physics, argued about the unity of the ways of thinking inherent in science and art. Having created a unified field theory, Heisenberg at the end of his life published a series of articles on the unity of science, art and philosophy. Using the approaches given by the great physicist, the article compares the work of an accountant and the work of an artist. As a link between accounting and art, the fundamental role of symmetry and harmony in the very being of beauty as such is considered. Symmetry in accounting is expressed in the principle of double entry - in fact, the mirror image of the business transaction on the accounts, and experienced situations of transformation of chaos into an ordered symmetrical whole - the balance sheet, our senses note as being involved in beauty. Russian scientist and accounting researcher V.Ya. Sokolov in his writings he noted that various accounting schools reflect reality in the same way as various art schools: the Italian school reflects the real world like Rafael, the French one like Toulouse-Lautrec, the German one like Mondrian, the Anglo-American one like Picasso. The article substantiates the specified comparison of accounting schools and the work of individual artists. In conclusion, it is concluded that there is a unified field theory - the field of science and art.

Keywords: *accounting, accounting schools, art, harmony, science, symmetry*

1. INTRODUCTION

The ongoing discussion about whether accounting is a science, as a rule, dwells on the choice between craft and science. At the same time, the audit experience suggests that if you ask a practicing chief accountant with a long record of work, what accounting is to them, the concept of art will emerge as one of the most frequent answers. Why art? For practitioners, art is expressed in finding a middle ground between fulfilling the requirements of accounting standards, regulatory restrictions and the interests of the company's administration. However, it seems to us that accounting is more closely associated with art than even practicing specialists can imagine. Let's allow a small analogy with one of the most common types of art - painting. By using rules of the digital palette, and other laws of painting and[1], an artist captures on the canvas a certain situation, image, part of a real or fictional world. As a result, we get a certain snapshot at the time of creating the picture. Later, the picture is shown to viewers who appreciate the artist's creation and their creative intent, and understand the idea of the parts of reality depicted on canvas. What do we have in the case of accounting? The accountant, using established rules, makes a snapshot of the reality surrounding them by forming a balance sheet, and presents it for evaluation of viewers - users of the financial statements.

[1] In this respect, the Chinese laws of painting of Xie He are interesting: 1. Consonance of energies in the movement of life. 2. A solid foundation for brushing. 3. Correspondence to reality in the image of objects. 4. Following the categories of things in the distribution of colors. 5. The correct distribution of objects in the composition of the picture. 6. Full reproduction of images in copying a picture (http://kulturoznanie.ru/?work=6_law_zhivopisi).

Of course, the means of achieving the goal differ significantly in the case of the artist and in the case of the accountant. But how similar the mechanics are!

2. IS ACCOUNTING AN ART?

Let's try to understand what else combines accounting and art. Unfortunately, today there is no universal definition of art. The most general and neutral ones include the following: and arrogance is a special kind of human form-creating activity that creates figurative and symbolic structures that have aesthetic, cognitive and communication functions (2). We note here that financial statements are nothing more than a symbolic structure that has a cognitive and communication function. The evolutionary content of the content of art also captivates. The concept of “art” is a multidimensional semantic formation, fundamentally open to the inclusion of new semantic elements generated by the unceasingly lasting and transforming artistic and aesthetic experience of mankind, including the development of intercultural connections, communications, exchanges, technologies that provide and support creativity and translation into society of its products. Of interest is the definition of accounting used by AICPA (American Institute of Chartered Public Accountants): “Accounting is the art of recording, classifying, summarizing to a large extent and in terms of money, operations and events, which have, at least partially, financial nature and interpret their results." Why did the American institute put the word “art” in the first place, and not “technology” or “craft”? Accounting is considered an art, because it requires the use of skills and creativity. Where does it find its expression? Every day, the accountant has to answer the following questions: Should we use direct or accelerated depreciation of fixed assets? What is the period of time during which we must depreciate a fixed asset or depreciate an intangible asset? How should we calculate the allowance for doubtful debts? Should we consider our contingent liabilities, and if so, for what amount? Is the calculation formula for the percentage of completion of a construction project economically sound? What tax rate should we use to recognize deferred income taxes? Does the mind answer these questions guided by the science of accounting or the art of accounting? Accounting is an art, since accounting is conducted in a system that is embodied in the totality of assumptions or personal judgments. This is a practical subject that includes skills, knowledge and regular practice.

3. ACCOUNTING SCHOOLS

Let’s get back to the analogy with painting. The great Russian scientist and accounting researcher Vyacheslav Yaroslavovich Sokolov in his book (3) noted that various accounting schools reflect reality in the same way as various art schools do: the Italian school reflects the real world like Rafael did, the French one like Toulouse-Lautrec, the German one like Mondrian, and Anglo-American one like Picasso.

3.1. Italian school

What makes the schools so particular? According to one of the prominent representatives of the Italian school, Giuseppe Cherboni, accounting should first of all study a person, since the latter lives on the farm and for the farm, the farm is organically connected with a person who has an independent existence. From a legal point of view, the goal of accounting is to control the activities of persons participating in business activities. All these persons were divided into four groups: owner, administrator, agents and correspondents. Taking into account the rights and obligations, rather than the property itself, predetermined the approaches of the Italian school, therefore, the consideration of contractual obligations has become a strength of the Italian school. But at the same time, the emphasis is shifted to the bearers of rights and obligations themselves - people engaged in economic activities. This interpretation was also confirmed in the theory of law already at the turn of the 19th and 20th centuries, when property was defined

not as the right of absolute dominance over a thing, but as a relationship between the owner of a thing and other persons. Man is also a centerpiece in works of an outstanding Renaissance master. Raphael's art amazes us, above all, with its depth and humanism, completely deprived of external effects and any attempt to surprise the viewer. In his creations he, like no one, was able to combine the inimitable skill and mastery of drawing and painting with a clear and full-bodied worldview. The artist openly admits in his works a love for life, a worship for the beauty of man. His canvases are simple-hearted, and at times, might even seem naive in their openness, when the painter talks about the boundless appreciation for the joy of earthly being given to him, the feeling of the charm of nature. Raphael painted the dream of a perfect man: free and noble. His frescoes depict people of strong will and high dignity. Raphael's frescoes are populated by many characters. Often these are a kind of double portraits. The famous fresco "School of Athens" in the image of Euclid, bending over a drawing with a compass in his hand, captures the appearance of the architect Bramante. Plato resembles the appearance of Leonardo da Vinci. Among the host of Old Testament prophets, apostles and legendary saints there are historically reliable images of Savonarola, the artist Fra-Beato Angelico, the author of the paintings and many famous people. In these compositions, world history is surprisingly clearly interfaced with concrete evidence of the time; it, like a general outline, embraces and holds together individual events, episodes, figures, and scenes. There is a constant feeling of involvement in the instantaneous insights of the meaning of life "here and now" immeasurably to a wider flow of movement of the universal human mind. Raphael's works take the world in its many diverse manifestations to an almost perfect balance and harmony. The aesthetically transformed reality appears in his works as a result of the synthesis of a real motive taken from nature or people's lives with those ideal, sublime ideas about the world that were developed by the modern artist with a humanistic culture. At the right edge of the composition, Raphael painted his self-portrait next to the artist Sodom. Thus, he seemed to include painting in the number of free arts, the community of which reveals the variety of ways of knowing the truth. It is no accident that in the niches of the pylons of the temple of science Rafael portrayed Apollo, the patron of the arts, and Athena Pallada, the goddess of wisdom, the patroness of sciences. Thus, he affirmed the unity of the ways of knowing the essence of beauty and the laws of natural existence. These ideas will be picked up later by other researchers, in this paper we recall the arguments of Heisenberg, a Nobel Prize winner in physics.

3.2. French school

From the 17th to the 19th century, the French school of accounting gained influence. In the French school, there was a transition from the interpretation of an accountant-lawyer to an accountant-economist. Dumarchet, author of the coat of arms of accountants, on the subject of accounting, proclaimed the atoms of value. The scientist, likening accounting to the body, introduced a special section - the body on the logic of bookkeeping - the doctrine of the organization, goals and work of various departments of accounting. He developed his new integral form of bookkeeping. This form was of great importance and influence in the conditions of using card bookkeeping and in the design of a magazine-order form. In trade, the accounting procedure for goods was adopted according to the principles of potential valuation. The Italian school was considered a decisive factor in determining the size of profit installations issued by the owner. The French school identified the proceeds with profit. No income - no profit. The rights and obligations of accountable persons are not the subject of an accountant, this is the business of a legal adviser. However, the French school has expanded the scope of accounting to the boundaries of political economy. Accounting methods began to be used to account for the entire national economy, which was called macro-accounting. Representatives of the French school were convinced that, unlike the Italian school, they were taking into account not paper, nor information, nor relationships, but money, objects, and values

themselves. A talented psychologist, brilliant portrait painter Toulouse-Lautrec tried to show people how they are, without ideal images, in their daily work. He focuses his paintings on a wide variety of people. They were friends and acquaintances, circus performers, cabaret artists, jockeys, regulars of Parisian bars, prostitutes, just random ones. It didn't matter how long Toulouse-Lautrec had known the person he was writing - it took him a few moments to firmly capture in his memory a living image, emotional impression, dynamics of the moment, and then recreate them on paper or canvas. In his works, he did not pursue direct resemblance with the original, and sought to convey not so much the external as the deep inner essence of what he wanted to portray. Sometimes his portraits looked more like a cartoon, but his contemporaries were always amazed that after several years the model acquired almost complete resemblance to the picture - as if the artist knew how to see through time and accurately guess how a person would look in the future. His technique often came close to the poster genre, so Toulouse-Lautrec often ordered posters and advertising posters for theaters and cabarets. The ugliness in Lautrec's paintings is not a damning moralizing or a mockery, he managed to portray people, bringing out their ugliness and at the same time doing it with love for them: the fact that he does not hate his models is quite obvious. Of course, in many ways his views were formed by his trauma, which forced him to build a bridge between himself and the world in a special way. Moreover, his paintings indicate that creativity gave him the opportunity not only to overcome suffering, but also to find himself by saying a new word in art. The artist's paintings were truthful; however, the truth can be ugly. But even the French accounting school refused ideal images, calling for a reflect-to-life reflection of the situation.

3.3. German school

The first half of the 20th century is the dawn of a German school. The German school did not use other sciences as reference points, but looked for meaning in documents and registers that go into accounting. The accounting method was proclaimed an accounting procedure. Swiss researcher Cher I.F. laid the foundation for accounting algorithms. It was based on the main balance equation, from which the double entry rule is derived. Such an approach made automation of accounting possible and simplified the use of computers in the work of an accountant in the future. Sher put the balance equation at the heart of the accounting procedure, the study of accounting was carried out in a German school according to the scheme from balance to account. Thus, the German school is the only one of the four schools that used the method of deduction rather than induction. At a German school, it became apparent that double-entry may not need bookkeeping. She reached the limit of her capabilities, and now her flaws were recognized. Highlighting only the form, representatives of the German school considered accounting as an ideal structure. Ideal forms - rectangles, horizontal and vertical lines, we meet in the works of the Dutch artist Pete Mondrian. Most Mondrian is known for his works of the early 20-ies of the last century, where he simplified the forms to all horizontal and vertical lines. The artist filled the resulting rectangles with the basic colors of the palette. Pete presented his sense of peace in the form of opposites: vertical and horizontal, plus and minus, dynamics and statics, male and female. The asymmetric balance of his figures symbolizes the unity and mutual complement of universal forces. Using straight lines of rigid contours, he made the compositions asymmetric, reaching dynamic equilibrium. Thanks to the rejection of particulars and details, he hoped to achieve a clearer expression of the universal fundamental principles of creativity, trying to find what he called "pure plastic reality." With the help of carefully selected combinations, he hoped to depict the fundamental laws governing our universe, and in particular - the idea of "universal harmony" , the visualization of which he considered extremely important for the future humanity . Desiring to achieve " maximum objectivity " in the depiction of each subject and phenomenon, Mondrian approached painting more as a science than an art.

That is, in principle, he acted in exactly the same way as ancient or medieval thinkers, who, not in painting, though in music, also saw science, not art. Mondrian saw the main problem of plastic art as how to achieve the highest possible objectivity. The position that Mondrian formulated here, and which he brilliantly embodied in his paintings, dates back to Plato's doctrine of " ideas . " As a result of his own evolution as an artist, Mondrian set as his goal a visual interpretation of the general laws that underlie every phenomenon. These laws apply to the diversity of natural forms in the same way as some artistic theme to its variations. But are the spectators not deceiving themselves when considering this or that combination of figures and colors perfect? For example, on one of the paintings of Mondrian, a large red square is balanced by a small blue on the opposite side. Is there any special harmony in this? Using computer graphics, the experimenters swapped the squares - and the picture ceased to cause genuine interest in the audience. Mondrian's most recognizable paintings are color blocks separated by vertical and horizontal lines. The eyes of the participants in the experiment focused on certain parts of the paintings, which seemed to our brain the most expressive. But when the volunteers were offered upside down versions, they indifferently glanced at the canvas. Comprehension of the universal and, therefore, insight into the very essence of reality, was the task that Mondrian assigned to his art. He believed that expressing the essence of things provides a way for a pure description of reality. However, Mondrian did not consider his art as "art for art's sake". He believed that a pure image untainted with particulars has a great practical importance. By visualizing these ideas, painting will take on a new meaning: its function will now be to place the image of universal harmony in front of a person’s eyes, as a role model that people will follow in their life. So the German school created the image of ideal bookkeeping, describing it with mathematical models and cutting off all that is unnecessary that does not fit into formalized procedures.

3.4. Anglo-American School

However, the formalism of the German school did not suit all accountants. In the 20-30 years of the last century, the dawn of yet another school of accounting, the Anglo-American, began. Its main task was to make accounting an instrument of control. To achieve this, innovative ideas were put forward: natural meters are better than money; accounting for standard costs at responsibility centers; priority management accounting; the use of behaviorism in accounting practice. Accounting accounts lose their legal and economic content, act as "monitors", showing how actual indicators deviate from the normative. Accounting for responsibility centers echoes the legal approach of the Italian school, but the emphasis in the new school is on the standard cost system. Accountants in their work began to be guided by the “stimulus-response” scheme. A document is an incentive, and the accountant's reaction must be predetermined by this incentive. Accounting practice turns into a set of predefined options - decisions. The development of management accounting has sacrificed accuracy for the sake of efficiency. The ideal accuracy of accounting data has become irrelevant. The outstanding Spanish artist Pablo Picasso was also against accuracy. He used to say he depicted objects the way he imagined it and not the way he saw it. These words express the whole essence of cubism created by Picasso in collaboration with Georges Braque. It was Cubism that brought world fame to Picasso, which had a huge impact on the development of all art of the 20th century. If at the analytical stage of its development cubism itself was a radical innovation, then at the synthetic it became even more impudent. Since the Renaissance, European artists have written what they see. It never occurred to any of them to decompose the object into external elements and to combine them compositionally. Picasso and Braque went exactly that way, blowing up traditional views. Synthetic cubism allowed rebel artists to use brighter colors. Previously, they were constrained by the framework of analytical cubism, in which the key was form (rather than color). Now, in addition to the gray and brown tones that previously dominated, vibrant colors have been added

to the cubist palette. Characteristic of the Picasso art system was decomposition into parts of the human body. The movement in the space of the eyes, ears, mouth and nose allowed the artist to convey his feelings more sharply and adequately. Picasso is not too trusted theories, saying, that for hen we love a woman, we do not start measuring her limbs, m s love it with our senses. He sought to convey his emotions as vividly and directly as possible. The method of distorting a human figure has always worked to solve this particular problem. The influence of cubism on contemporary art is very great, and the Anglo-American school still dominates the accounting world. Accounting schools, like art, did not develop in isolation from each other. The methods of each of the schools penetrated each other, and the first violin was played by the school, which was based on a stronger economy. With the extinction of the economy, the accounting school also lost its position.

4. UNIFIED FIELD THEORY

After analyzing a single path of evolution of accounting schools and areas of art, we try to understand the reasons for this. We have already noted that Rafael, Apollo placing on his mural - patron of the arts next to Pallas Athene - the patroness of wisdom and science, assertion waiting for the unity of knowledge of ways the essence of the beautiful and the natural laws of life . Werner Heisenberg, a Nobel laureate in physics, argued for the unity of thought inherent in science and art. Having created a unified field theory, Heisenberg at the end of his life published a series of articles on the unity of science, art and philosophy. To the crucial moment in understanding art in its connection with science, as presented in the later works of Heisenberg , consists in the fundamental role of symmetry and harmony in the very existence of beauty. To explain the essence of the beauty of the s and what has caused the art, Heisenberg gives the example of a kaleidoscope, turning color chaos in the esthetic order of introduction in it a system of mirrors. Mirrors give the effect of symmetrization of chaotic diversity of colors and shapes. The number of mirror faces in a kaleidoscope determines, in mathematical language, the order of the symmetry that occurs. Heisenberg seeks to find elementary and experientially experienced situations of transformation of chaos into an ordered symmetrical whole, which our senses note as being involved in beauty. In this understanding, beauty in art is defined as the mathematical proportionality of the parts of the whole between themselves and them with the whole itself. Similar integer relations between intervals in an octave underlie musical harmony. Our ear is tuned to them. And if there are such ratios, the sounds corresponding to them will be perceived as music, and not as sound noise. Here the Pythagorean-Platonist foundation for the theory of art comes out with all the evidence that it cannot but connect science and art. As the pursuit of harmony and order stimulates the scientific thought, science always goes hand in hand with art. The chief accountant, creating the balance sheet, can create a beautiful work if he can withstand all the proportions, requirements and rules. Consider the question of the definition of beauty, or beauty, in connection with science at Heisenberg in more detail. He touches it in his report “The Importance of Beauty in Exact Science,” read at the Bavarian Academy of Fine Arts (1). Heisenberg gives two basic definitions of beauty known from antiquity. The first of them defines it as "the correct coordination of parts with each other and with the whole." This definition has clear Pythagorean-Platonic sources and directly connects the beautiful with the mathematical structure, with symmetry and harmony. Each th definition , ascending her to the dam, at all costs, without mentioning names of parts and the beauty of the eternal radiance of "the One", a transmission in the material phenomenon . Heisenberg mentions the ancient dictum of Pulchritudo splendor veritatis (beauty is the radiance of truth). The researcher, according to Heisenberg, learns the truth first of all from this radiance, from the glow emitted by it. In his report, the scientist emphasized that in art and science, as in action, it all comes down to purely perceiving objects and reckoning with their nature.

For example, he says that Niels Bohr also uses data classical and quantum theory as a painter with a brush and paints. This and similar places in his works can be regarded as his understanding of the proximity of these two areas of activity. And the basis for it is their attitude to the highest basic meanings, to which they open access for a person. Heisenberg believed that quantum mechanics significantly brought together humanitarian knowledge and the natural sciences. Indeed, if we want to talk about a quantum object in the language of everyday experience, then we will inevitably have to move on to parables and allegories, which characterizes the language of art and religion. As a link between accounting science and art, we can talk about the crucial role of symmetry and harmony in being beautiful as such. Symmetry in accounting is expressed in the principle of double entry - in fact, the mirror image of the business transaction on the accounts, and experienced situations of transformation of chaos into an ordered symmetrical whole - the balance sheet, our senses note as being involved in beauty.

5. CONCLUSION

Each practicing accountant periodically has an “insight”, when a complex business transaction must be decomposed into components, put into accounting entries, like Picasso, who breaks the human body into geometric shapes. Lined up by double-entry recording in strict accordance with established accounting rules, they will fall into the balance sheet - a multi-colored data table that has come down from Mondrian’s paintings. But as if the accountant did not want to embellish reality, he would have to reflect reality, as Toulouse-Lautrec did in his work. And admire the result and evaluate the performance of users will be - how grateful spectators, standing in the museum have paintings s Rafael. So, is accounting an art? Undoubtedly. But the more he will be an art, the more he will be a science. The unity of the ways of thinking in science and in art, which was discovered by the ancient Greeks, and which began to be confirmed after the discoveries of quantum physics, confirms our conclusion. At present, accounting, combining achievements of different schools of accounting, based on the following sciences: law, economics, general systems theory, psychology. The immediate task of accountants is to integrate these views and directions. However, in our view, the success of this operation will depend on how closely the researchers will be able to work with a unified theory of her field - the field of science and art.

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TRANSACTION COSTS OF ORGANIZING PUBLIC PROCUREMENT

Vladimir Melnikov
Novosibirsk State University of Economics and Management,
Novosibirsk State Technical University
Novosibirsk, Russia
vvm_ru@mail.ru

Galina Litvintseva
Novosibirsk State Technical University,
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
litvintseva-g@mail.ru

Vladimir Glinskiy
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
v.v.glinskij@nsuem.ru

Lyudmila Serga
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
l.k.serga@nsuem.ru

Olga Lukashenko
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
olgaluck@gmail.com

Andrey Makartsev
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
a.a.makarcev@nsuem.ru

ABSTRACT

The authors estimate the costs of organizing public procurement at the regional and municipal levels in the case of customers in the Novosibirsk region. Regulators do not always consider that a popular approach to costs assessment, which takes into account the duration of the regulated stage of procurement procedures with subsequent aggregation of micro-data for the macro-level, is correct. Therefore, the paper outlines two comparable insights into such assessment: a conventional procedural approach and a finance-based framework. The latter estimates costs as an element of financial flows directly related to organizing and executing procurement procedures (payroll costs on the staff directly involved in procurement operations, their retraining and workplace arrangements). The size of the costs is compared with the amount of saved public funds as an official indicator of budget effectiveness. A customer survey helped establish behavioural transaction costs that lead to additional time spent. It is proved that customers have in-house taboos and incur transaction costs of ideological developing, and transaction costs of opportunistic behaviour emerge. A quasi-market nature of procurement operations is confirmed. Some customers had to persuade suppliers to sell them products. In this context, the study findings demonstrate inexpediency of applying the criterion of public funds saving in the course of public procurement for assessing effectiveness of the contractual system. The concept of public contractual system in Russia must be reconsidered. The authors question the rationale of assessing behaviour of customers and suppliers in public procurement through the lens of the standards of the modern competition advocacy policy.

Keywords: *Government contractual system, Efficiency, Public procurement, Transaction costs*

1. INTRODUCTION: INSTITUTIONAL LIMITS FOR THE MARKET MECHANISM

According to the neoclassical economic theory, methods of analyzing organizations and financial markets presume a number of strong simplifications, compared to the reality, in terms of model prerequisites and characteristics of the conditions for studying economic processes. They can include stability and heterogeneity of agents' preferences and rational maximizing behaviour, complete, accessible information for decision-making, absence of exchange operations costs, clear-cut description of property rights, etc. The XX c., especially amidst criticism from the institutional and behavioural economic theories, brought in considerable adjustments in research progammes of financial and organizational studies. The costs of using market mechanisms, as defined by Ronald Coase (Coase, 2007), is coming to the fore of institutional structure studies. The key requirements to organizations, such as correct measurement of inputs efficiency and determining an appropriate remuneration, face the uncertainty problem (Knight, 1921, p. 347; Keynes, 1937, p. 213), information asymmetry (Arrow, 1963, p. 951, 965; Akerlof, 1970, p. 490), limited rationality (Simon, 1957; Selten, 1990, p. 651), unwillingness of economic entities to optimize (Alchian, 2007, pp. 34-36), satisfaction with the current position and, in a broader prospective, the issue of economic incentives (Cyert, March, 1963, p. 27), which directly influence development and observance of property rights and rules. Modern organizational studies in the mould of the new institutional economic theory corroborate the fact that an efficient incentives system is by no means always achieved through use of financial market mechanisms (Aoki, 1988). In view of Kenneth Arrow, although price system has numerous advantages, its capabilities are not limitless. Driving a wedge between sellers' and buyer's prices, transaction costs, will, in particular, systematically generate losses in public wellbeing (Arrow, 1988,). In this case, behavioural preconditions include limited rationality of the exchange operations participants and opportunism (Williamson, 1985). In the modern Russian management practice at both micro- and macro-levels, decisions on institutional changes are often made on the basis of targeted optimization of financial flows, which, as expected, will automatically facilitate growing labour productivity due to efficient resource allocation. At the same time, the scale of the actual transaction costs of activity and the extent of congruency between formal and informal institutions are not taken into account, which is necessary for economic justification of a particular reform vector.

2. APPROACHES TO COSTS ASSESSMENT OF CUSTOMER OPERATIONS

To understand correctly the scale of additional costs that a public customer incurs organizing a procurement procedure in line with the current law, let's take as a starting point for analysis a situation of complete trust and absence of opportunism at any of the three stages of possible unfair conduct or a conflict of interest in the course of funding public needs: between politicians, high-level bureaucrats and customers' top-executives; between customers and social groups whose interests they represents; and between customer's stuff and representatives of product suppliers. In this case direct contracting becomes the most efficient way of procurement – acquiring on an open market, perhaps with preliminary competitive negotiations. The costs incurred by a customer are quite low because there is no need to form mandatory special organizations units, observe tight deadlines and regulations of the staff work, or maintain a complex and rather specific documentary flow. Another situation takes place in an actual economic system characterized by a low level of mutual trust and significant opportunism. Under such conditions all economic agents involved – top bureaucrats (politicians and the regulator), customers as well as firms – potential suppliers – will push up the costs of operations related to supplies of products for public needs. Formal rules are being developed and approved such as a list of competitive methods of procurement with lengthy procedures and tight schedule, a list of requirements for contracts, standardization of the mechanisms for informing potential suppliers, procurement planning, reporting, the necessary level of electronic

support and so on. For participants of a public contractual system it means additional costs, in both monetary form and time losses, particularly, for developing and introducing regulatory acts, organizing a system of control (internal and external, financial and procedural), regular training and re-training of procurement specialists, organizing work places that meet all requirements set by e-formats, compensation for the work of additional hired staff. Also, the time actually spent for a standard statutory competitive procedure depends on staff qualification and skills. When it takes too much time, it leads to late spending of public funds, failure to satisfy social needs or blocking the work of government and municipal agencies. Let's consider approaches to assessment of costs incurred by customers. Development and analysis of the methods applied in this field attracted considerable attention in Russian (Melnikov, 2008. p. 102-110; Volchik, Nechaev 2015. p. 32-34; Yakovlev at al., 2016. p. 154-161; Balaeva et al., 2018. p. 63-68) and foreign economic literature (Lv et al., 2012; Nemec et al., 2016). So far, the procedural approach to cost assessment dominates. It is associated with a detailed description of the stages of operations carried out by the customer's staff in accord with the approved regulations that conform to the law. This approach is typical for researchers that adhere to the institutional paradigm: elements of transactions are identified with further assessment of transactional costs for each procedure or a stage of customer activity and their subsequent aggregation, and then revealing the trends that demonstrate an impact of particular institutions. To this purpose, formalized (questionnaire) surveys of customers are conducted. Based on the data obtained, scholars calculate general costs as well as costs broken down by the types of procedures, followed by aggregated indicators. Micro-processes are characterized by aggregating micro-data. The researchers' conclusions about a continuous growth of customers' costs based on such rather precise, predictable and transparent approach typically come up against incomprehension from the regulator and controllers: how can costs grow if the scope of financing has not changed? Due to a different view of the size of the administrative costs in procurement, in this study the authors have decided to employ and compare two approaches: the conventional procedural one and the financial approach. The latter enables to assess the visible (the baseline minimum) costs as a part of financial flows related to organizing and executing procurement procedures: direct costs for remuneration of the personnel directly involved in procurement operations (contractual managers or the contractual service staff) to subsequently compare them with the official figures on the achieved economic effect – the size of savings. The financial approach allows operating data on actual financial flows of customers. Although it can be taken as less accurate compared to the above-described procedural approach, the financial approach is the most corresponding to the understanding of costs by the regulators and participants of legal budgetary arrangements. The survey did not cover the costs of organizing work places and procurement activity – premises, furniture and office equipment. To get those estimates, work place arrangements were accounted at the average costs of the region, as well as the customers' costs for advancing qualification of the staff of contractual services on a regular based (with an assumption that they are trained in the same region where they work). Overall, this assessment can be taken as the minimum threshold value of the costs for customer's procurement. If transaction costs of building up a public contractual system from the customers' side commensurate with the savings obtained as the major macro-indicator characterizing the state of public procurement, it will indicate that goal-setting approaches, and in a broader sense, the performance principles of the public contractual system in the Russian Federation must be reviewed.

3. PROCUREMENT COSTS INCURRED BY CUSTOMERS IN THE NOVOSIBIRSK REGION

The study conducted at the beginning of 2019 is based on an anonymous online survey of 395 public customers at the regional level and 2424 customers at the municipal level in the

Novosibirsk region who were asked questions about their costs and saving in 2018. The respondents were asked several related blocks of questions to assess cash costs and the time spent on procurement procedures. Overall, 1267 properly filled in questionnaires were received (more than 45% of the general population), of which 1085 (86%) from customers in municipalities and 182 (14 %) from customers ate the regional level, that matches the population structure. We analyzed data from public customers at different levels (the region and municipalities) who were recipients of taxpayer funds or represented state-financed entities, government agencies and autonomous establishments in the Novosibirsk region, with the total annual volume of procurement exceeding 50% of the general figure for the region in 2018. The estimated results are presented in Table 1.

Table 1: Average specific procurement by public customers at the regional and municipal levels in the Novosibirsk region in 2018 (the financial approach), %

Item	**Average value**
The share of remuneration of the staff of contractual services or contractual managers of customers in the total annual procurement of an organization	1.7
The ratio of pay-roll costs in view of the actual work time of the personnel, directly or indirectly involved in procurement procedures, the costs of advancing qualifications and organizing works place to the savings	36.7
The ratio of the total costs for organizing procurement procedures by consumers to the total annual volume of procurement	2
The share of time (in a year) spent by representatives of organizations for interacting with regulators, including drafting documents, inspections, appeals, litigation, % from the total time spent *	10.9
The share of staff repalced in the contractual service during the period when No.44-FZ Federal Law has been into force**	26.7

Estimates are based on the customer survey data.

** - Estimated using data on the ratio of staff time in man-hours to the nominal working time fund, per each entity participating in the survey.*

*** – Estimated based on data about the number of resigned staff of contractual services compared to the current stuff number of contractual services of organizations.*

Therefore, the average pay-roll costs in procurement administration reached 1.7% from the total annual volume of procurement, while the costs taken into account by us – 2% from the volume of procurement in 2018. This aggregated figure typically is less for larger procurements and it increases significantly in assessment of the work of customers with small annual procurement and small maximum (initial) contact prices. This figure was close to the estimates made in different years for different groups of customers, when samples were based on a territorial principle (Yakovlev et al., 2016. p. 154-161), at the same time, it is predictably higher because federal customers did not take part in this survey. The key indicator is the ratio of direct financial expenditures to the savings obtained: it reached over 1/3 of the "saved" sum. And this is only part of the costs concerning the money needed to organize customers' operations. Looking at the efficiency of the system in general, the current costs from the side of suppliers, who take part in the procurement procedure (around 1.3 million registered firm – suppliers, of which around 300,000 are active) (Anchishkina, 2017. p. 54), and the administrative costs of the system at the level of the Russian Federation in general, its districts and municipalities, including internal and external audit technologies, procedural and financial control, the costs of developing and implementing new formal rules for customers. Let's add two important observations.

According to the survey findings, on average around 11% of the total work time of the customer's staff is spent for preparation and direct communications with representatives of regulators. An analysis of the questionnaire details shows that about one third of the personnel of contractual services were replaced in five years since No. 44-FZ Federal Law came into effect. Some customers have a completely new team in the dedicated departments. It leads to an assumption about a problem of adverse selection in contractual services, when on average experience of specialists is not built up and, subsequently, tightening control does not increase the quality of executing procurement procedures. Let's apply the procedural approach to assessing customer's costs on the basis of questionnaire details, and analyze the time spent for standard procurement procedures by customers in the Novosibirsk region (Table 2).

Table 2: Average costs of public procurement customers in the Novosibirsk region for procurement procedures in 2018

Method of procurement	**Average duration, man-hour**	**Costs of average-duration procurement, K RUB.**
Open tender	36.1	7.5
Electronic auction	22.8	4.8
Quotations request	15.6	3.3
Request for proposals	29.7	6.2
Procurement form a single supplier (up to 100,000 RUB)	7.5	1.6
Total (average weighted by procedures)	22.5	4.7

At the average weighted costs of a procurement procedure around 4700 RUB (more than 22 hours spent), the minimum spending for a company to acquire products varied from 1600 RUB (7.5 h) in a direct contract to up to 7500 (over 36 h) in open tenders. The time spent is slightly higher than the average figures obtained by researchers for the Russian Federation (*Balaeva et al.*, 2018. p. 70-72), but the costs are less due to the specifics of the sample and the object of observations. Table 3 gives estimates similar to the financial approach (items 2 and 3), but calculated on the basis of time spent for the procedures and the average pay-roll.

Table 3: Average specific indicators of procurement activity of customers in the Novosibirsk region in 2018 (the procedural approach), %

Item	**Average value**
Ratio of the costs of procurement procedures to savings, %	25,4
Ratio of the total costs of organizing procurement procedures to the total value of the contracts, %	1,6

Thus, using the example of the analyzed customer survey, one can state that the costs of procurement activity estimated on the basis of the most frequent procedural approach, relying on assessment of labour input by stages of procurement activity with further aggregation, can become less than what is estimated on the basis of the actual financial losses for administering the system. Let's specially consider some findings of the second part of the survey – how customers evaluate factors underlying behavioural transaction costs that emerge in the course of performing their functions. We looked at the factors contributing to additional time spent and at the customer attitude to the incentives employed in the contractual system to enhance performance.

1233 properly filled in questionnaires were selected with regard to the second block of questions, which constituted more than 43% of the general population. The sample structure matches the structure of the customer population: 1056 (86 %) of the respondents were customers at the municipal levels and 177 (14 %) – at the regional level. The observations confirm the fact of intra-organizational taboos, not related directly to the legislative norms but leading to additional costs for providing access to contracts for "insider" suppliers and restricting access for the "wrong" suppliers. The figures, most probably, will vary by regions, which can be associated with informal regional policies or establishing of clan network structures. The frequency of customers incurring the transaction costs of observing the taboos by various categories is from от 7.6% to 14.4%. We suggest taking it as the low threshold since the figure can increase if the questionnaire survey conditions change. Overall, the low indicator can be considered as a confirmation of the positive role of formal limitations, strictly regulating the permitted procurement technologies and preventing customers' top executives frrm creating their own systems of informal procurement rules. Around a quarter of the respondents (24.7%) confirm transaction costs of developing a competitive procurement ideology at the customer level. In spite of Nos. 94-FZ and 44-FZ Federal Laws being in effect in 2006 – 2020, procurement technologies still have a negative image among the staff of public agencies, which is related to excessively high losses of time for observing the norms and standards. The quail-market nature of transactions is also confirmed in 24.5 % of cases when customers are forced to urge suppliers to sell products. 38.1% respondents acknowledge the costs of pre-contractual opportunism, and 29.8% – post-contractual opportunism. Moreover, 8% cases concern transaction costs in the form of blackmailing.

4. TRANSACTION COSTS AND FACTORS OF EVOLUTION OF THE PUBLIC CONTRACTUAL SYSTEM

1) Even disregarding the facts, exposed by the regulators, of inefficient and unproductive use of public financial resources, one can see that the indicator of relative saving of public funds is not used correctly to assess the state of the public procurement system in Russia. The growing costs of procurement activities under Nos.94-FZ and 44-FZ Federal Laws have resulted in around 30% of the savings being absorbed in the costs of servicing the system only from the customer side (around 290,000 customers in the Russian Federation exercise procurement under the law on the contractual system). It accounts for around 2% of the overall contract value. As a result, the meaning of the saving indicator becomes absolutely insufficient to answer the question about the vector of evolution of the public contractual system in Russia, to what extent it is efficient and which goals it should help achieve.
2) Individual financial responsibility, complexity and labour-intensive procurement procedures as well as regular changing of technologies in the contractual system frustrate the staff of contractual services, create difficulties for customers trying to find and keep the appropriate specialists. The number of regular staff of contractual services is not transformed into quality with time, while the increasing requirements to the level of their professional skills do not become a guarantee that fines would not be imposed. The penalty avalanche is only rising due increasingly more complicated budgeting and the rules of planning and determining suppliers under No.44-FZ Federal Law as well as tightening sanctions for breaching them. It generates a serious problem of adverse selection. On average, 26.7% of the employees of the customers' contractual services resigned in 2014-2019, and in some cases the staff was fully replaced. Hiring trained staff by customers is prevented by the growing alternative costs in the form of increased salaries for the key personnel of suppliers. According to the 2016 data presented by the Strategic Developments Centre in the Atlas of the contractual system (2017), no more than 11 000 legal entities in Russia (3.7% of the total entities actively participating in the system) obtained 80%

financing on public contracts. To get access to public contracts, it is not enough to be a supplier understanding the nuances of manufacturing and supplying particular products. One should also understand better than competitors whether technical assignments and procurement technologies used by the customer are legally correct. That is why a lot of suppliers actively hire former customers' employees. It inevitably aggravates the problem of adverse selection for customers and obstructs the efforts to decrease violations of the contractual system.

3) Since interaction with regulators takes around 11% of the paid work time of the staff of customers' contractual services, it is necessary to develop common, economically justified approaches for all regions of Russia on public control (audit) at regional and municipal levels that would facilitate achieving the goals and objectives of the economic policy.

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FORECASTING OF THE HUMAN CAPITAL ACCUMULATION IMPACT ON THE LABOUR PRODUCTIVITY DYNAMICS IN THE RUSSIAN FEDERATION

Nail Gabdullin
Kazan Federal University
18 Kremlyovskaya street Kazan, 420008, Russian Federation
nail56@yandex.ru

Igor Kirshin
Kazan Federal University
18 Kremlyovskaya street Kazan, 420008, Russian Federation
kia1125@mail.ru

ABSTRACT

The article presents the forecasting model of the impact of the human capital accumulation on the labour productivity movements in the Russian Federation. Indicators of the components of the World Bank Human Capital Index were selected as parameters that determine the movements of the human capital accumulation. The target productivity indicator is expressed in terms of the fraction of the reference productivity of a worker who has successfully completed a full course of education and has absolute health. The model of forecasting of labour productivity in the Russian economy is built on the dataset and methods of "The Changing Wealth of Nations 2018: Building a Sustainable Future". The simulated model allows to evaluate the effectiveness of national policy in education and healthcare from the perspective of increasing the value and improving the quality of investments in human capital, as well as increasing the productivity of future generations of workers. This approach increases the importance of the accumulation of human capital for government bodies that are developing and implementing measures to improve the macroeconomic aggregates of the Russian Federation in the medium term. The model of the movements of human capital index in the Russian Federation is built in multiplicative and additive forms. The adult survival index and the Expected Learning-Adjusted Years of School, with constant values of other indicators of the human capital index at the rate of 2018, were determined by the authors as the model variables. The authors evaluated the elasticity coefficients of the human capital index of the Russian Federation by the indicator of the Expected Learning-Adjusted Years of School, and by the indicator of adult survival rate. It is proved that the greatest contribution in the current situation to the growth of labour productivity is made by factors of the state of health. The results of modelling the dependence of the human capital index of the Russian Federation on the indicators of adult survival rate and the *Expected Learning-Adjusted Years of School, with constant values of other indicators at the rate of 2018, were obtained.*

Keywords: *Adult survival rate, Forecasting, Human capital, Labour productivity*

1. INTRODUCTION

As a methodological approach to assessing the impact of the accumulation of human capital on the dynamic of labour productivity, we use the World Bank method of constructing the Human Capital Index (HCI). HCI reflects the relationship between investment in human capital components and labour productivity. The objectivity of measuring this connection is based on the use of unified indicators that allow comparing the individual components of human capital in different countries (Kraay, A.,2018). Through the application of this technique, it is possible to evaluate the effectiveness of national policies in the field of education and healthcare from the standpoint of increasing the productivity of the next generation of workers.

The HCI structure, which allows a quantitative assessment of the factors influencing the productivity of the next generation of workers, is presented in Figure 1. The contribution of education is assessed by the duration of schooling in the formal education system from the age of five to the age of 18. Taking into account pre-school education from five years of age, the duration of a full course of study is 14 years.

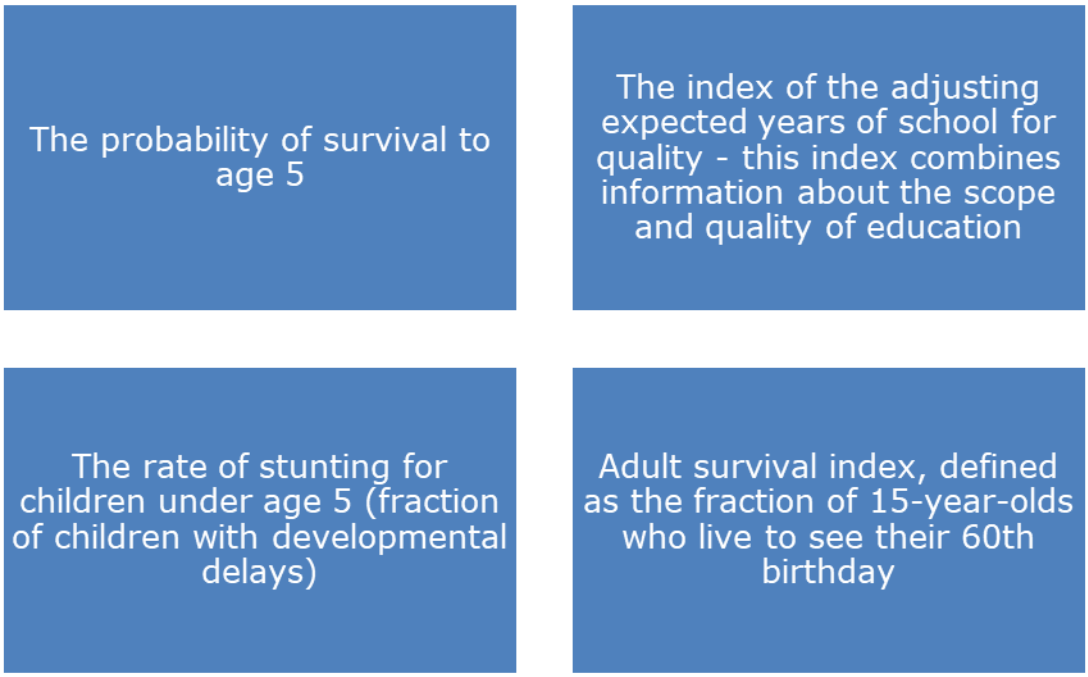

Figure 1: Human Capital Index Components

2. METHODS

The intercountry gap analysis of the levels of education of the population shows significant gaps in the national average of test results for international programs for assessing educational achievements of students. "A result of approximately 400 points corresponds to the minimum level of study under Programme for International Student Assessment (PISA)"(The changing nature of work , 2019).

The HCI health component forms two indirect indicators of the general health status in countries:

- the rate of stunting for children under age 5,
- adult survival index.

In the methodology developed by the World Bank, all components are integrated into a unified index, which gives a fairly complete picture of the amount of human capital in accordance with the methodology for determining the contribution of education and health to employee productivity by evaluating the return on education and health (Caselli, F., 2005)(Weil, D., 2007). In the proposed methodology, HCI components are first converted to indicators of their relative contribution to employee productivity and then multiplied. The reference indicator of labour productivity, taking into account the full course of formal education and absolute health, is equal to one. The applied methodology allows to reduce the influence of cross-country differences in the duration of schooling by adjusting the educational outcomes. If, for example, in accordance with the standard, all children under the age of 18 undergo a full 14-year course of study, then with a duration of 10 years, the labour productivity of a child who has reached the age of majority will be 32% lower than the reference 100% (4 years of not completed education multiplied by 8% per year).

However, it must be borne in mind that the calculated index does not take into account the socio-behavioural skills of a person. Assessing the impact of health on productivity is more complex and indirect. Researchers based on an analysis of empirical data have shown that an improvement in health, expressed in an increase in adult height by 1 cm, leads to an increase in productivity by 3.4%. According to the results of observations, it is proved that a reduction in short stature by 10.2 percentage points, resulting from an improvement in health status, increases employee productivity by 3.5%. At the same time, with an improvement in health status, survival rates increase. An increase in adult growth of 1.92 cm leads to an increase in adult survival by 10 percentage points. Consequently, an improvement in health status, which increases the adult survival index by 10 percentage points, provides an increase in an individual's labour productivity by 6.528% (by 1.92 × 3.4%). The dynamic pattern of labour productivity in the Russian Federation (RF) is presented in Figure 2.

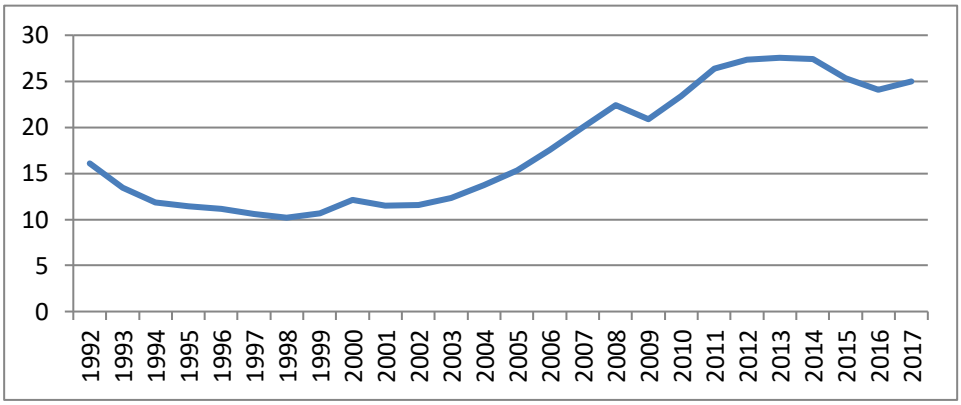

*Figure 2: Labour productivity movements in the Russian Federation (Output-side real GDP at chained PPPs (in mil. 2011US$) / Average annual hours worked by persons engaged*Number of persons engaged (in millions))(Penn World Table, 2015)*

According to the HCI methodology, the contribution of health status to productivity is determined as a percentage of the reference indicator of full health. In a country with short stature rate of 20%, poor health reduces productivity by (20 × 0.35)%, or 7%. If the country's adult survival is 80%, then poor health will reduce productivity by (20 × 0.65)%, or 13%. According to HCI, these two estimates add up to the magnitude of the impact of health status on labour productivity. The value of the "Contribution to Productivity" indicator shows the proportion of the reference future labour productivity of an adult child born in 2018. The contribution to the productivity of the health factor is calculated as the geometric mean of the percentage of children not affected by short stature and the survival rate of adults. HCI is calculated as the product of contributions to the performance of all three components: survival (A), schooling (B), and health (C). The contribution to the performance of individual HCI components is calculated using the following formulas:

$$A = \frac{1 - \text{under 5 mortality}}{1}$$

$B = e^{\varphi \cdot 0{,}08}$, where

$$\varphi = Expected\ duration\ of\ \ schooloing \cdot \frac{Unified\ test\ results}{625} - 14$$

$C = e^{\lambda}$, where

$$\lambda = \left[\gamma_{AMR} \cdot \begin{pmatrix} \text{Adult} \\ \text{survival} - 1 \\ \text{index} \end{pmatrix} + \gamma_{\text{Short stature}} \cdot \begin{pmatrix} \text{Proportion of} \\ \text{children not affected} - 1 \\ \text{by short stature} \end{pmatrix} \right] / 2,$$

where AMR - Adult Mortality Rate.

The number 0.08 means the return on each additional year of schooling. The increase in productivity due to the improvement in health, as measured by indirect indicators of adult survival and short stature, is reflected, respectively, by the parameters γ_{AMR} = 0,6582 и $\gamma_{\text{Short stature}}$ = 0,3468. The reference values of the indicator of survival of children and adults and the indicator of short stature, equal to 100% and 0% respectively, mean full health. The parameters of 14 years of schooling and a maximum test result of 625 points correspond to the standard indicator of full and high-quality school education. The HCI value is in the range (0, 1]. If it is predicted that a child born in the country today will be fully healthy and able to undergo a full high-quality education lasting 14 years until he/she reaches the age of 18, then the country's HCI will be equal to the maximum value of 1.

3. FINDINGS

Visualisation of the contribution to the education productivity in the formal education system from the age of 5 on all possible data on the expected duration of schooling and the test results is shown in Figure 3. The exponential dependence of the education contribution to productivity on the expected duration of schooling and test results is clearly visible. Visualisation of the contribution to health productivity on all possible data on the proportion of children under 5 years of age not affected by short stature and the survival rate of adults is shown in Figure 4. “The Expected Learning-Adjusted Years of School varies from about 3 years to almost 14 years” (Human Capital Development Project, 2018). The obtained test results are in the range from 300 to 625 points.

Figure following on the next page

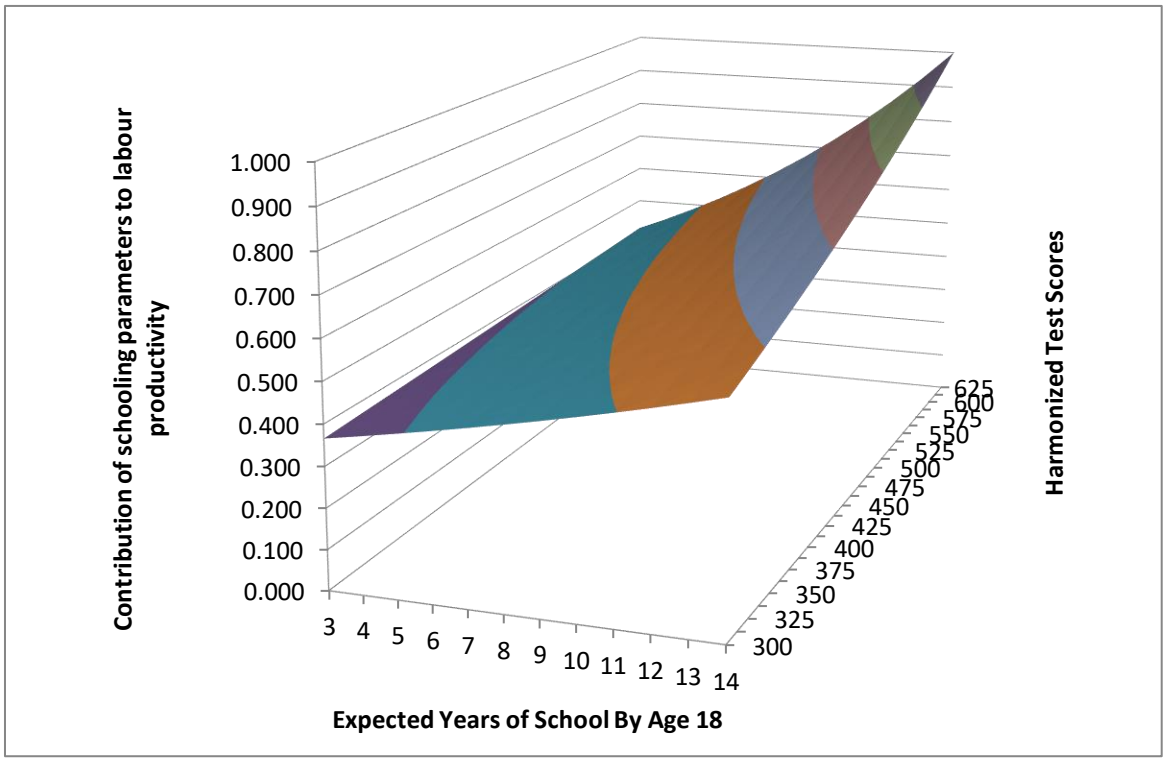

Figure 3: Contribution of schooling parameters to labour productivity

"Regarding health status, adult survival rates range from 60 to 95%, while fraction of children under 5 not stunted from about 60% to more than 95%"(Human Capital Development Project, 2018). The contribution of schooling to productivity on a given area of acceptable values varies from 0.366 to 1. The contribution of the state of health component to productivity is in the range of (0,818; 0,98).

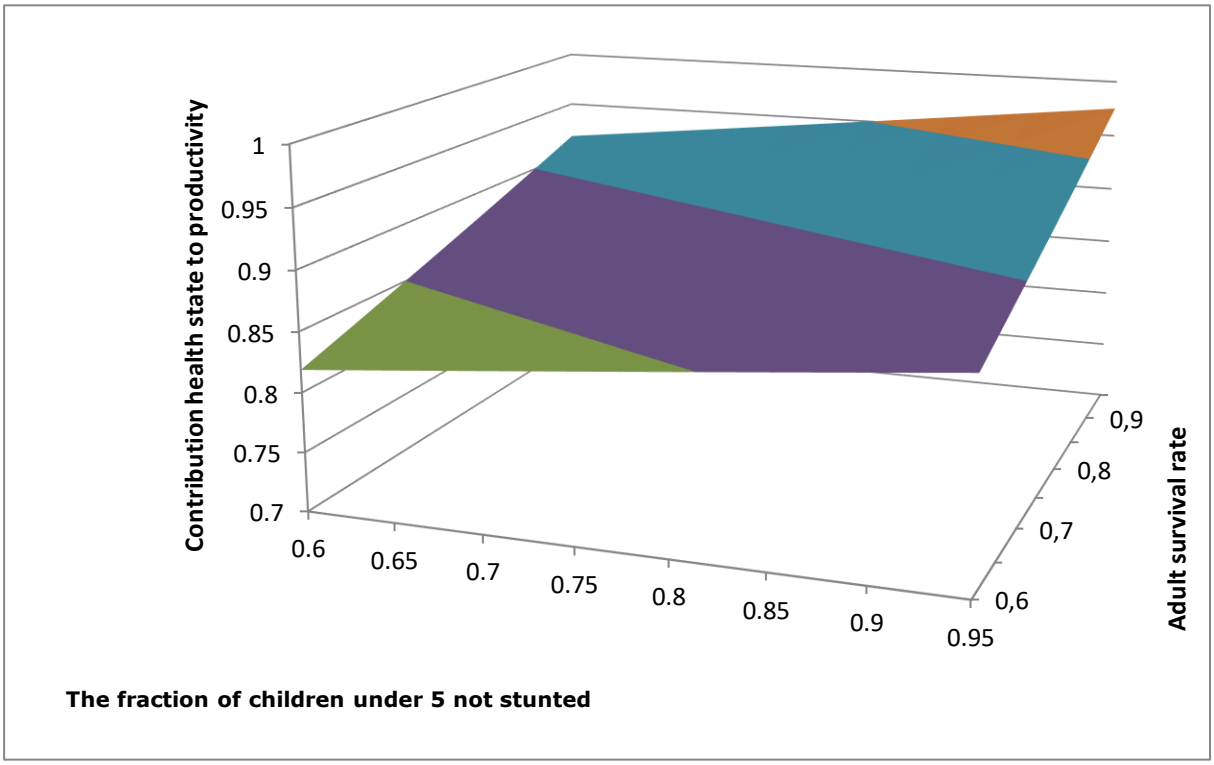

Figure 4: Contribution of the state of health component to labour productivity

In the HCI ranking, Russia takes 34th place out of 157 countries. The results of measuring the HCI components of Russia place the country in the top quartile of the rating for all HCI indicators, except for the adult survival rate, which is lower in Russia than in countries from the same income group and it is in the lower quartile (table 1).

Table 1: The values of the indicators of the HCI components of the Russian Federation for 2018

Indicator	Value
HCI	0,72855258
Probability of surviving to the age of five	0,992399991
Expected schooling duration	13,8330555
Test result	537,6397095
Duration of schooling, adjusted for quality	11,89951992
Adult survival	0,783964515

The value of the Russian HCI in 2018, equal to 0.7285 means that the future productivity of a child born in 2018 shall be 72.85% of the productivity that he / she could count on, having completed a full course of education and having good health. The forecast of labour productivity of future workers, based on an assessment of the health status of Russians in 2018, shows a decrease in productivity by 14.05% ((100% - 78.39%) × 0.65) compared with the reference indicator of 100 percent adult survival. According to the CWON methodology for measuring human capital, the consequences of lower adult survival rates mean that the value of Russian human capital, as measured by life-long income, is lower than it could be if the corresponding investments were aimed at increasing the life expectancy of the population. Let us make a forecast of the productivity growth of the future generation of workers (born in 2018). To do this, we apply the constructed model of the dependence of Russian HCI on the adult survival indicator (Fig. 5).

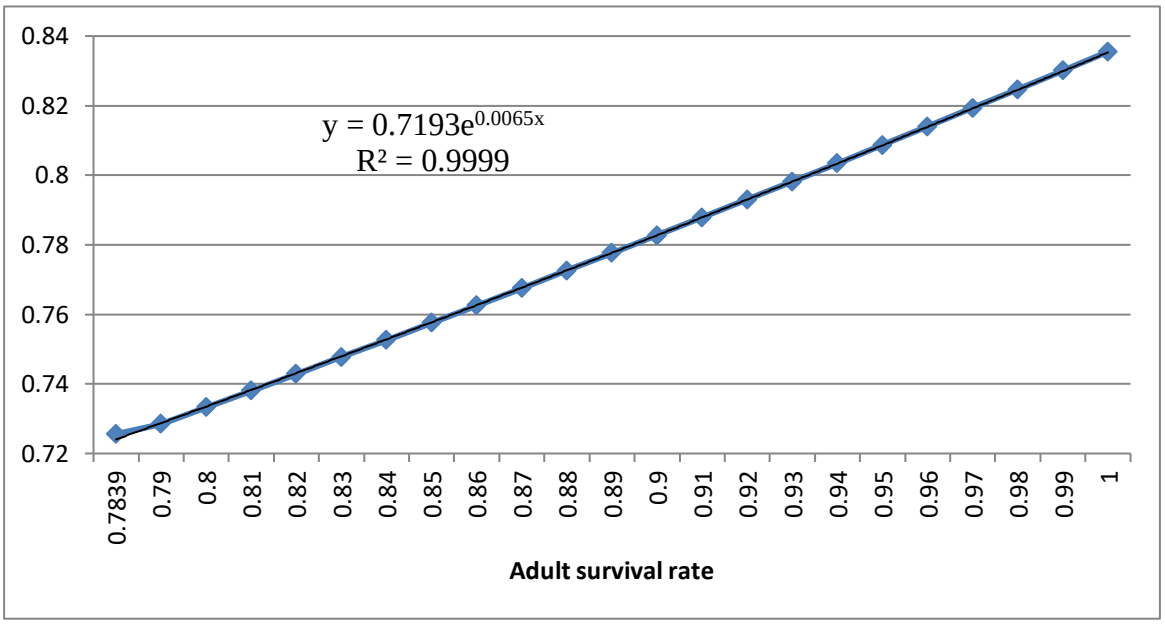

Figure 5: Predicted HCI of the Russian Federation depending on adult survival with given values of other HCI indicators at the level of 2018

Similarly, let us simulate the forecast of productivity growth for the future generation of workers (born in 2018) based on the use of the constructed dependence of the Russian HCI on the indicator of the second component - the duration of schooling, adjusted for quality, varying from the current value to the maximum value of 14 years (Fig. 6).

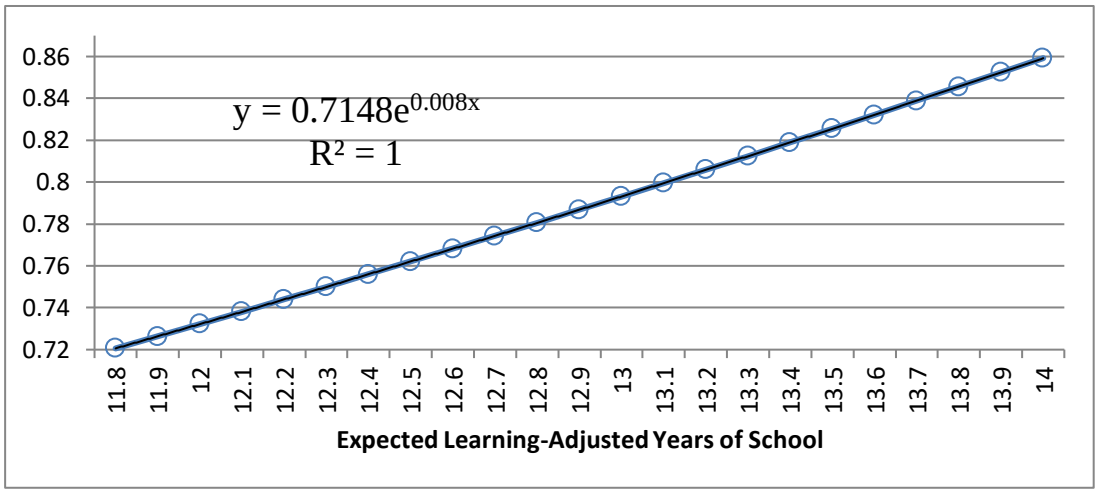

Figure 6: Predicted HCI of the Russian Federation depending on the Expected Learning-Adjusted Years of School with the given values of other HCI indicators at the level of 2018

As a result of modelling the dependence of the HCI of the Russian Federation on the indicator of adult survival and the duration of schooling, adjusted for quality, with the given values of other indicators at the level of 2018, an interval of possible HCI values of the Russian Federation is formed [0.72; 0.99] (Fig. 7).

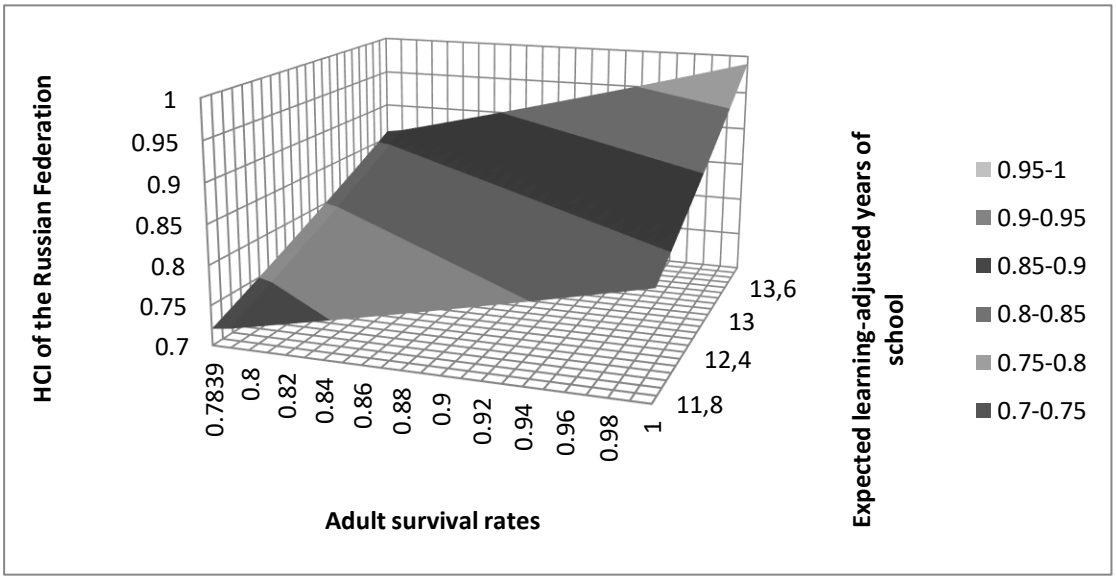

Figure 7: Modelling the dependence of the HCI of the Russian Federation on adult survival rates and expected learning-adjusted years of school with constant values of other indicators at the level of 2018

In the absence of data on the indicator "Fraction of children under 5 not stunted", the formula for calculating the HCI of the Russian Federation shall look like this:

$$HCI_{Rus} = 0{,}992 \cdot e^{[0{,}08(X_1 - 14)]} \cdot e^{[0{,}65(X_2 - 1)]} = 0{,}992 \cdot e^{[0{,}08 X_1 - 1.12]} \cdot e^{[0{,}65 X_2 - 0{,}65]}$$

$$HCI_{Rus} = 0{,}169 \cdot e^{[0{,}08\,X_1]} e^{[0{,}65\,X_2]}$$

where X1 - Expected Learning-Adjusted Years of School,
X2 - adult survival rate.

We shall use the technique of simulating the behaviour of a function of several variables by converting it to a logarithmic form, and then proceeding to a dynamic record based on the use of the total differential formula. The transition to the natural logarithm of the HCI (t) function, followed by differentiation with respect to the time factor t, transforms the record of the HCI estimation model into a dynamic form:

$$\frac{d \ln HCI(t)}{dt} = \frac{1}{HCI(t)} \cdot \frac{dHCI}{dt} = \frac{\dot{HCI}}{HCI} = G_{HCI}$$

where G_{HCI} is growth rate of HCI.

$$G_{HCI} = G_{A_t} + 0{,}08 G_{B_t} + 0{,}65 G_{C_t}$$

where G_{Zt} is growth rate of the variable Zt in the year t.

The parameter 0.08 is the coefficient of elasticity of HCI in terms of the Expected Learning-Adjusted Years of School , 0.65 is the coefficient of elasticity of HCI in terms of adult survival. For example, if the annual growth rate of the probability of surviving to the age of five is 1%; the growth rate of the Expected Learning-Adjusted Years of School is 0.5% and the growth rate of adult survival is 1.5%, then:

G_{HCI} = 0,01 + 0,08 · 0,005 + 0,65 · 0,015 = 0,02015 or 2,015%.

Thus, 98% of the growth in HCI was obtained due to an improvement in the health of the population and 2% due to an increase in the duration of schooling. Applying a modified model of the production function, which allows to determine the effect of changes in human capital on labour productivity in the long term, we have (Human Capital Development Project, 2018):

$$y = \frac{k\, p^{\frac{\alpha}{1-\alpha}}}{y} A^{\frac{1}{1-\alpha}} k_h$$

The model establishes a direct proportional dependence of the productivity (y) of the worker on the value of his basic human capital with constant total factor productivity (A) and a constant relationship between physical capital and output. From the formula it follows that in the long run the labour productivity of the worker increases at the same rate as his human capital. Therefore, in the long run, HCI, which determines the share of labour productivity of the next generation of workers, is directly proportional to its human capital. To assess the impact of adult survival on HCI, Iceland's adult survival rate of 0.9524 can be used as a reference.

For Russia, replacing the adult survival rate with this value in Iceland leads to an increase in domestic HCI by 11.68%. The obtained result proves the importance of improving the health development strategy aimed at improving adult health status and increasing life expectancy.

4. CONCLUSION

Russian HCI registers gaps in the current and potential levels of human capital. These gaps, due to the quality problem of domestic education and health care, adversely affect the productivity of workers and their contribution to national wealth. State authorities at both the federal and regional levels should provide incentives for investment in human capital, given the long-term nature of the return on them. When assessing the contribution of human capital to economic dynamics, it becomes relevant to create conditions for social mobility, which ensures that children from low-income families receive a higher level of education than their parents. The future economic and social effectiveness of investments in education will be the higher the earlier these investments are made. The accumulation of human capital, due to the increase in the level of health and education of the population, significantly affects the increase in labour productivity of future generations of workers, which is the fundamental competitive advantage of the national economy.

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THE INCREASING ROLE OF P2B QUASI-BANKING INSTITUTION OF IN THE DEVELOPMENT OF REGIONAL ECONOMIES

Yuriy Ezrokh
Novosibirsk State University of Economics and Management, Novosibirsk, Russia
ezroh@rambler.ru

ABSTRACT
The establishment of a P2B quasi-banking institution can give a significant impetus to the development of regional economies, which is due to underfunding of small and micro businesses; lack of liquid collateral for bank loans; high requirements for borrowers from banks; ultra-high interest rates for microfinance organizations. The purpose of the article is to find ways of strengthening the positive impact of the functioning of the P2B institution on the development of regional economies. Results and scientific novelty: the key problems of the development of P2B institution were identified (high interest rates, lack of investors, weak correlation between borrowers' credit ratings and defaults, insufficient use of opportunities to reduce credit risks of unsecured loans, crowdlending platforms not being responsible for credit scoring, risks of reviewing large loan online applications, inefficient handling of overdue debts, risks for inexperienced investors), and strategic approaches to overcoming them were formulated. Practical significance is that the results of the study can be used to improve the state regulation of national P2B institutions in order so that they positively affected the development of regional economies.
Keywords: *direct lending, P2B lending, lending to small companies, high-risk investments*

1. INTRODUCTION AND STATEMENT OF THE SCIENTIFIC AND PRACTICAL PROBLEM

Within the framework of the "share economy" concept, a new financial and credit institution – P2B or crowdlending – has been actively developing since the beginning of the XXI century. Its economic essence lies in the possibility of "direct" interaction between individuals owning available funds and potential borrowers. This interection is carried out remotely on specialized internet platforms (and with significant organizational participation of the latter). Theoretically, crowdlending has a number of undeniable advantages over other well-established methods of attracting loan financing. First, it allows companies or individuals to attract loans, in case their applications were rejected by classic debt market entities – banks, microfinance companies, etc. This is especially true for micro businesses that are interested in relatively small loans. Such clients, in fact, are of little interest to banks, since their financing is practically nonprofitable – the internal costs of analyzing the creditworthiness of potential borrowers, visiting the business venue, etc. are too high.[1] In addition, banks usually follow a conservative credit policy – they only interact with customers who have a good credit history, reliable collateral, etc. Second, the level of interest rates in P2B lending usually significantly lower than in the non-bank microfinance institutions. Third, investors can expect a much higher return on their investments compared to traditional deposits – in fact, investors and borrowers share the bank's interest margin (the income of the financial intermediary excluded from the transaction). At the same time, there is clearly a higher credit risk, which, however, is quite acceptable for a certain category of investors. The development of the regional economy largely depends on the situation of small and medium-sized enterprises, which account for 55% of GDP produced in

[1] Example. The bank issued a loan of €10,000 for 1 year. The interest margin for loans to small companies is usually 5-10 % per annum, i.e. the income will only be €275-500, which is comparable to the cost of reviewing the deal.

the OECD countries (in Russia it varies from 22 to 39 %)[2]. It should be noted that: a) the importance of a loan as a tool for business development is undoubtedly high; b) for many businesses obtaining a loan is associated with insurmountable difficulties, leading to their underfunding (for example, Russian banks approve less than half of loan applications from small and medium enterprises[3]); C) in micro businesses, experiencing major difficulties in attracting borrowed funds, there involved a significant number of people (e.g. in Russia, where the economically active population constitutes less than 80 million people, there are ≈4 million individual entrepreneurs registed; in addition, currently the institute of self-employment (i.e. micro-entrepreneurs without employees) is being actively promoted. Thus, the key scientific and practical task is to find ways of strengthening the positive impact of the P2B quasi-banking institution on the development of regional economies. Its solution will be implemented on the example of Russia, so the corresponding results may be relevant for a number of developing countries. Objectives of the study: a) the analysis of products on the regional financial markets; b) identification of issues of the P2B functioning; c) formulation of a complex of scientific and practical suggestions to overcome them so to enhance the role of P2B banking institution in the development of regional economies.

2. OVERVIEW OF THE INTERNATIONAL EXPERIENCE

Crowdlending is a small but one of the fastest growing segments of the financial market in many developed and developing countries. Thus, in Switzerland from 2017 to 2018, its volume (the amount of loans issued for the year) increased by 40 % up to 261.9 million Swiss francs, and the number of market participants exceeded 130 thousand[4]. The volume of the German crowdlending market in this period was slightly lower - €36 million (annual growth of 23 %)[5]. The corresponding transactions were made on one of 37 crowdlending internet platforms. The interest of investors is justified by fairly high (for Europe) interest rates – usually from 5 to 6.5 percent per annum; at the same time, the declared credit risks are low –the average level of bad debt is only 1.7 %[6]. The world's largest crowdlending market was formed in China, by the end of 2017, its volume exceeded €300 billion (an annual growth rate of 69.5%). In Russia for 9 months in 2019, the total volume of crowdinvesting was equal to 5.2 billion rubles (about €73 million), which is significantly lower than previous year's value – by 42 %. Nevertheless, crowdlending was almost the only segment that showed a small, but still positive dynamics (€58 million, +2.5 %)[7].

3. REVIEW OF RUSSIAN AND FOREIGN SCIENTIFIC WORKS

The Russian scientific literature covers issues related to the historical and economic features of crowdlending [Rukavishnikov, 2019], as well as the study of approaches to classifying its individual types [Sanin, 2015]. At the same time, researchers emphasize its potential of having a significant positive impact on the development of small enterprises [Suvorov, 2016], due to the presence of a number of advantages in relation to bank financing [Chaikina et al., 2019]. Until Federal law No. 259-FZ On Attracting Investment Using Investment Platforms was adopted in 2019, a significant part of publications reflected both comprehensive and fragmentary proposals for the formation of an institutional framework for crowdlending from

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both economic [Dvoretskaya, 2017] and legal perspectives [Proshin, 2019]. Some works focuse on the identification of problems of P2B lending development [Kotlyarov, 2017], but there are no suggestions how to overcome them. A significant part of the studies describe the accumulated foreing experience [Nedzvetskiy, 2017; Chebukhanova, 2019], but the authors do not justify the expediency of its use in developing countries. At the same time, most of the works, with rare exceptions [Budovich, 2019; Sokolov et al., 2017], are abstract and theoretical in nature. The works of foreign economists reflect various aspects of the organization and practical functioning of crowdlending, which are disclosed in major review articles [Bouncken et al, 2015; Moritz, Block, 2016]. However, similar to Russia, most of the works are theoretical in nature [Onnée, Renault, 2016]. Practical works are much less common. For example, they study the motivational aspects of crowdlending subjects [Gerber et al, 2016], and search for factors that affect the probability of collecting the necessary amount of funding (loan amount, loan term and overall credit rating [Moreno-Moreno, 2019]), etc. Thus, the issues related to the role of P2B quasi-banking institution in the development of regional economies remain practically unsolved in the modern scientific literature, which determines the relevance of this study.

4. RESEARCH RESULTS AND DISCUSSION

Currently, Russia has a relatively small number of crowdlending internet platforms that offer standardized financial products for potential borrowers and investors (table 1).

Platform	Year of Foundation	Loan details						Investments Min. ∑„ thousand rubles.	The declared results
		∑ , million rubles.	Term, months	Rate, % year.	Commission, %	Security*	Purpose**		
JetLend	2019	< 3	N/A	16-30	1-7	N/A	BD	30	Attracted 70 million rubles into 160 projects, 1.8 thousand investors
Penenza	2016	N/A	2-3	20-204	1***	N/A	BD	5	Attracted 26 billion into 90 thousand projects
StartTrack	2013	10-200	3-18	15-25	N/A	S/ S+Sec	BD	100	Attracted 3 billion rubles into 122 projects, 21 projects in operation, 12 thousand investors
Atom Invest	2018	0.3 – 5	3 – 12	24 – 30	from 3 %	S/ S+Sec	BD, CE	50	N/A
Gorod Deneg	2012	0.1 – 15	1 – 36	> 20	N/A	S	BD	50	Published applications for 4.2 billion rubles (52.5 thousand borrowers), 6.5 thousand investors
Karma	2014	3 – 30	3 – 24	10 – 23	N/A	S/ S+Sec	RB, CE, F	N/A	Invested 315 million rubles into 133 deals, 7 thousand investors
Modul Den'gi	2017	0.5 – 3	1 – 9	25 – 35	2	No	CE	Not established	Attracted 1.7 billion rubles, 1.7 thousand projects, 3 thousand investors
SberCredo	2019	0.1 – 0.8	1 – 6	40 – 47	2	No	BD	5****	N/A
Ozon Invest	2019	0.1 – 5	1 – 9	15 – 18	2	No	BD	10	N/A
Potok Digital	2016	0.1 – 5	¼ – 6	18 – 25	4	No	BD	10	8 billion rubles were invested into 10 thousand loans

Table 1: Some information about the conditions for attracting and placing funds on the largest crowdlending platforms in Russia (as of March 1, 2020)
(Sources: company official websites)
Notes: N/A – no data; as of March 1, 2020, official exchange rates: $1 = RUB 66.91, €1 = RUB 73,79.
** S – surety, Sec – Security, N – not obligatory. ** BD – business development, AP - application support, CE - contract execution, SF - state factoring, f - factoring. *** - a Commission of 0.1% is also charged to investors. **** - the maximum amount of investment per one company is 20 thousand rubles.)*

One of the advantages of crowdlending is that it is easy to apply for it. For example, to apply for a loan at Jetland the director/ entrepreneur is to submit his/her passport and a bank statement; the data is processed within a day, and if the decision is positive, the term for collecting funds does not exceed 5 working days[8]. At the same time, most crowdlending platforms report a high level of refusals to the applications to be the placed on the platforms: in Modulden'gi - 75 %, in the Gorod Deneg - 92 %, in Karma - 95-97 % , etc. This policy leads to a relatively small number of current applications, for example, Atom Invest had just two as of March 1, 2020. At the same time, crowdlending does not finance startups, but "ordinary" operating enterprises (table 2), and mainly for the purpose of increasing their working capital.

Platform	Basic declared requirements
StartTrack	Average monthly revenue is more than 7 million rubles.
Atom Invest	The company (private entrepreneur are not considered) has been operating for at least 6 months.; average monthly turnover: > 3.5 million rubles; debt/net profit ratio: < 3, and debt/revenue: < 0.6
Karma	The business has been operating for 2-4 years (depending on the programme), but it is not taken into account for collateral (residential / commercial real estate in cities with a population of more than 500 thousand people is accepted as collateral). Revenue: >15-20 million rubles per year.
Modul Den'gi	The borrower company was registered at least one year prior to the application, at least 5 executed contracts for the last 2 years and 4 current contracts, the CEO and founders have no criminal record of serious and economic crimes, the director of the borrower company / sole proprietor is older than 25 years.
SberCredo	Current account with Sberbank, business term: >9 months, the head of the LLC is its sole owner
Ozon Invest	Active partner of Ozon, business term: >20 months, non-zero turnover on current accounts, no tax outstanding debts

Table 2: Minimum requirements for borrowers from a number of the largest crowdlending platforms in Russia (as of March 1, 2020)

Financial products offered by crowdlending platforms are direct substitutes for bank express loans and loans from microfinance companies (MFCs). It should be emphasized that similar "express" loans are issued by banks without collateral, but at a high interest rate, for example, in Sberbank starting from 16 % (the amount from 0.1 to 5 million rubles)[9], in Raiffeisenbank – from 17.9 % (from 0.3 to 2 million rubles)[10]. Given the business practice of "understating" the advertised interest, in reality, bank customers can expect a rate of ≈20-24 % per annum. At the same time, the cost of loans is higher in MFCs – for example, the Vash investor company offers entrepreneurs loans secured by a car at a rate of 2.7-6.0% per month (the effective rate is up to 100% per annum)[11]. Thus, crowdlending products may be quite interesting for a significant number of companies that do not meet the strict requirements of banks. This makes it important to identify the key issues of the emerging quasi-banking crowdlending institution and find real ways of strengthening its positive impact on the development of regional economies.

- *Issue 1* - The relatively high level of interest rates on loans in the crowdlending market, especially given the commission charged for the organization of the transaction (from 1 to 7%); this has a disincentive effect on the number of creditworthy borrowers.
- *Solution* - The level of interest rates cannot be reduced by administrative measures. However, the gradual establishment of the crowdlending institution – the accumulation of platforms' experience in assessing the creditworthiness of potential borrowers[12], the transparency of the credit statistics – will increase investors' confidence and lead to a natural reduction of interest rates. Thus, state regulation of this industry should at the initial stage

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[12]About the ModulDen'gi service. Retrieved from https://vc.ru/finance/60325-odin-v-pole-ne-voin-kak-servis-moduldengi-nauchilsya-vozvrashchat-dolgi-po-kollektivnym-kreditam

be limited mainly to: a) countering the fraudsters on the market, including by promptly blocking their websites; b) limiting the risks of unqualified investors.

- *Issue 2* - Lack of investors on crowdlending platforms because of the possibility of the loss of savings due to non-transparent credit risk. First, it is difficult for investors to make decisions, because none of the crowdlending platforms provides information about: a) the indicators included in the scoring model used by it; b) the results of studying each parameter in relation to a specific transaction (for example, Peneza declares the analysis of 400 parameters). Second, there are no reliable statistics on the total volume of crowd loan defaults. So, JetLand declares a default of 0.69 %, and Karma claims 0% of defaults. Unfortunately, there are doubts about the reliability of such information, since the level of overdue debt in the portfolio of bank loans granted to small and medium-sized enterprises in Russia was 11.3 % as of January 1, 2020[13]. At the same time, ModulDen'gi provides more realistic data: 1,225 out of 1,679 loans were repaid on time, 244 were repaid in arrears, 117 were active non – overdue loans, and 136 were active overdue loans (in other words, most of the current portfolio is past due).
- *Solutions* - First, crowdlending platforms shall be obliged to disclose complete information about the analysis procedures performed (without the weight coefficients of the scoring model, which are a trade secret). It is also necessary to disclose data on the volume of disbursements, delays, effectiveness of judicial recovery procedures, write-offs, etc. on a periodic basis for all users. This contributes to the formation of a civilized market based on transparency, and not on the emotional speeches of various speakers, bloggers, etc.

- *Issue 3* - Credit ratings calculated by crowdlending platforms may have a weak correlation with the real number of defaults[14]. We can agree with the conclusions of Penenza experts that "the level of investment diversification plays a much greater role than the choice of loans and borrowers"[15].
- *Solution* - With the development of the market and the growing number of crowd-borrowers it is needed to set a limit for the maximum share of the capital investment of the unskilled investor in one loan application from a single client – first at 10 % and then gradually reduce the ratio to 1 %. In the case of borrowers' effective selection, this measure will effectively diversify credit risks. Innovations should be accompanied by positioning the potential income at the level of no more than 200-250 % of the value of risk-free rates on bank deposits[16].

- *Issue 4* - Insufficient use of opportunities to reduce credit risks of unsecured financing by crowdlending platforms. Thus, a significant part of loans have no collateral (except for penalties), and when considering applications, publicly available information is used.
- *Solution* - First, at the legislative level, it is necessary to oblige crowdlending platforms to require the guarantee from the borrowers. Otherwise, the risk of non-payment is very high, since LLC and JSC have limited liability and often minimal capital. Secondly, it is necessary to grant crowdlending platforms the right to withdraw funds without acceptance from the

[13]Materials Of The Bank Of Russia. Retrieved from http://www.cbr.ru/vfs/statistics/BankSector/Loans_to_corporations/01_21_Debt_sme_divisions_20200101.xlsx

[14] This problem is broader and concerns credit rating in general. A striking example is the mortgage crisis in the US in 2007 [Ezrokh, 2016].

[15] Penenza Materials. Retrieved from https://penenza.ru/blogs/articles/itogi-goda

[16] And this is what happens in reality – as noted by Yu. Popov, the co-owner of the Potok company, "according to the assessment of the website, investors [on average - Author's note] earned in 2018 12.8 % per annum, which is twice the deposit rate in the bank "taking into account defaults and interest income tax (materials of Business Peterburg website. Retrieved from https://www.dp.ru/a/2019/10/23/skinutsja_na_biznes__chto).

accounts of the borrower and guarantors in the event of a long delay in payments on the loan. Third, it is advisable to oblige potential borrowers to provide consent to obtain information about them from credit bureaus, servicing banks, etc. This should be done within the policy of creating the most open crowdlending market.

- *Issue 5* - The distant interaction with potential borrowers, which can lead to increased risks, especially when considering large transactions. At the same time, banks limit the size of their online loans – for example, Sberbank does not issue loans in the amount more than 5 million rubles, and Raiffeisenbank – more that 3 million rubles.
- *Solution* - Relatively small loan applications should be processed remotely (otherwise the cost of the transaction will be excessive), and those, which exceed €50-70 thousand, should be considered personally, for example, with the help of freelancers.

- *Issue 6* - No responsibility of crowdlending platforms for the results of credit scoring.
- *Solution* - On the one hand, internet platforms cannot be fully responsible for the default of individual borrowers (which is absolutely inevitable). On the other hand, they develop a scoring methodology, create software for its application, conduct a practical assessment, which results in: a) admission of a specific application to the site; b) assignment of a credit rating to the application. Based on this, investors make their decisions. Keeping the balance of interests, it seems fair to return the received income (commission taken earlier from the problem borrower) in favour of deceived investors (at least in relation to those clients who were given high ratings). This will increase market confidence, because investors will know that the crowdlending platform, to the maximum extent, is interested in the admission of high-quality applications.

- *Issue 7* - Inefficient handling of overdue debts. If there is a need for judicial actions, it is difficult to obtain a power of attorney from each creditor to represent their interests. This is almost impossible, given the potential number of them (100, 200 or more). In this case, only some sites buy back the overdue debt (with deferred payment, which is carried out only after the actual collection of funds) and begin judicial collection procedures on their behalf.
- *Solution* - Crowdlending platforms should be required to buy back the troubled assets and to involve accredited collection agencies after that. At the same time, at the expense of investors, it is initially necessary to form a trust fund (with each interest payment), which resources are be to spent on such recoveries.

- *Issue 8* - High credit risks for inexperienced investors with low level of financial literacy. On the one hand, in Russia from 2020, non-professional investors are not allowed to invest more than 600 thousand rubles (≈$10 thousand) in all crowdlending platforms. On the other hand, the level of financial literacy of a significant part of the population remains at a low level [Myasishcheva, Nasimova, 2017], which, given the high risk of investment, can lead to the loss of all their savings.
- *Solution* - Investment of the last money should be prohibited. Non-professional investors must provide a statement on their bank account, which has funds in the amount of at least the amount of their crowd investment.

5. CONCLUSION

Despite the fact that the crowdlending institution appeared more than 10 years ago, it is currently only at the stage of formation – in all countries, the volume of the corresponding market is very small (on a national scale). At the same time, it has a significant growth potential that can give impetus to the development of regional economies.

This is due to significant underfunding of small and micro businesses, their lack of liquid collateral for applying for bank loans, high bank requirements (and, in general, their lack of motivation to work with small loans, which at the same time carry serious credit risks), high interest rates in the microfinance market. In this regard, the paper highlights the key problems of developing a P2B quasi-banking institution and formulated strategic approaches to overcome them.

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A NOTE ON THE INDIVIDUAL INVESTMENT ACCOUNT INFLUENCE ON THE RUSSIAN CORPORATE DEBT AND EQUITY CAPITAL

Olga Belomyttseva
National Research Tomsk State University, Russia
Novosibirsk State University of Economics and Management, Russia
olbel2001@mail.ru

ABSTRACT
The article analyzes the significance of introducing individual investment accounts (IIAs) in Russia from the point of view of the state and corporations. The tax deduction provided to Russian individual investors by IIAs makes these accounts an instrument for implementing tax policy aimed at increasing corporate investment. Research hypotheses are that IIAs have a positive effect on the formation of debt and equity capital of Russian corporations. The main data are identified regarding the amount of funds in IIAs, the volume of investments in Russian stocks and corporate bonds. The regression equations on the corporate debt and equity capital depending on IIAs growth are revealed. As the results, quantitative data on the growth of debt and equity capital of Russian companies due to IIAs are given.
Keywords: *Corporate debt, Equity capital, Individual investment account, Investment tax deduction*

1. INTRODUCTION

Individual Investment Accounts (IIAs) were launched in the Russian Federation with the aim of forming an investment culture of the households and a layer of long-term investors. Such investments can bring greater returns for an individual investor due to tax incentives in comparison with the market returns. Obviously, investments by domestic investors are able to create some kind of airbag for the development of the country's stock market in case of high volatility. The assets of individual investors on IIAs are also called upon to have some effect on the financing of domestic corporations. For corporations, household funds provided in both debt and equity forms are potentially a cheaper source of financing than bank loans. Moreover, these additional resources have a multiplier effect, providing an increase in profits and tax payments. Thus, the tax deduction provided to investors makes an IIA a tool for implementing the tax policy aimed at increasing private investments and economic growth. Stimulation of such investments is not free for the state, in this case, the price or costs are the amount of tax deductions received by investors. Thus, the effectiveness of IIAs from the position of the state is ensured not only by the development of the investment culture, but also by the financing of corporations, which was provided by private investors. Five years after the IIA's practice, it is possible to draw conclusions and talk about the effectiveness of this tax benefit and its role in the development of financing for Russian corporations. If the specifics of the provision and dynamics of IIAs have been extensively studied, the role of the assets of individual investors in corporate debt and equity capital has not been studied in the literature. Based on the foregoing, the following research hypotheses are put forward in the article:

1. IIAs have a positive effect on the formation of debt of Russian corporations.
2. IIAs have a positive effect on the formation of equity capital of Russian corporations.

Structurally, the article is divided into 7 sections. The second section gives a brief description of the IIAs. A literary review with an emphasis on the work of foreign authors is presented in Part 3.

Part 4 contains statistics manually collected by the author. In Part 5, their analysis is carried out. The results of the study are described in Part 6. Directions for further research are stated in Part 7.

2. BRIEF DESCRIPTION OF IIAS

In 2015, a new type of tax deduction on personal income tax for individual investors - IIA, appeared in the Tax Code of the Russian Federation. IIA is an investment tax deduction that gives the right to reduce the tax base when making transactions with securities. Initially, the maximum limit on annual contributions to IIA was 400 thousand rubles, it was increased to 1 million rubles in June 2017. These funds can be used to purchase stocks, government and corporate bonds, units of investment funds and other instruments. The investor who opened the IIA is entitled to one of two types of personal income tax deductions:

- in the amount of money contributed on IIA by the taxpayer in the tax period (type A);
- in the amount of income received from operations recorded on IIA (type B).

A deduction of type A is granted annually, in the amount of 13% for the amount of the annual contribution of up to 400 thousand rubles (return up to 52 thousand rubles per year). The investor can expect to return no more than the amount of tax already paid and, accordingly, must have taxable income from another source of payment. The maximum amount of income deduction (type B) is not determined and, accordingly, can be infinitely large. The validity of the IIA should be at least 3 years, an investor can open such an account with a broker or an asset management company. The idea of introducing IIAs was borrowed from foreign experience. IIA's analogues are Individual Retirement Accounts (IRA) in the USA, Individual Saving Accounts (ISA) in the UK, Tax-Free Saving Account (TFSA) in Canada, Superannuation in Australia, Nippon Individual Savings Account (NISA) in Japan, Rajiv Gandhi Equity Savings Scheme (RGESS) in India, Korean Individual Saving Accounts (KISA) in South Korea. It should also be noted that in world practice such accounts are popular in developed countries, with a high percentage of investment active population. Among the developing countries, India pioneered in 2012 and South Korea in 2015, while India announced the suspension of RGESS in 2017. In a number of countries (USA, Australia), such accounts are tied to pensions, and in some cases (India) have restrictions on the structure of investments. Russian IIAs do not have a pension orientation or restrictions on instruments and are closest to the British ISA and Japanese NISA.

3. LITERATURE REVIEW

Most of the work of foreign economists is devoted to American IRA accounts, launched in 1974. Studies of Australian Superannuation, Canadian TFSA and British ISA are also described in the literature. For example, their comparative analysis was carried out by M. Donnelly and A. Young [1]. Most foreign authors, for example, H. Ryu and S. Keum [2], J.M. Poterba, S.F. Venti, and D.A. Wise [3], O.P. Attanasio and T. DeLeire [4] believe that investment accounts with tax benefits have significant macroeconomic effects. American IRA accounts have been widely studied precisely in terms of efficiency, or rather, the impact on the growth of investors' savings. However, research findings show opposing results. A positive effect is found by J.M. Poterba, S.F. Venti and D.A. Wise [3], O.P. Attanasio and T. DeLeire [4]. The latter, in particular, argue that a maximum of 9% of IRA investments represents a net increase in national savings. E.M. Engen, W.G. Gale and J.K. Scholz [5] study the same data and state that the effect is insignificant or absent. R.G. Hubbard and J.S. Skinner [6] adhere to an intermediate position. According to M. Feldstein [7], increasing the savings of the households through IRA increases the equity capital, the return on which gives an increase in corporate tax payments and can further reduce government debt.

The study of M. Feldstein is continued by G. Ruggeri and M. Fougere [8], arguing that such effects occur only in a closed economy. In this case, changes in domestic savings are automatically transformed into domestic investments and may affect corporate income and income tax. Further ideas of M. Feldstein, G. Ruggeri and M. Fougere were not developed. The work of F. Caliendo and W.C. Lewis [9] with an analysis of the negative long-term impact of IRA accounts on government debt makes an exception. A significant part of the work of foreign economists is devoted to retirement investment accounts, for example, the papers of Australian economists V. FitzGerald [10], G. Kingston [11], R. Weisser [12], and others. The pension specificity of accounts also explains the main profile of work - determining the effectiveness of replacing age pensions with investment accounts. In countries with retirement accounts, their investment profile is often relegated to the background and is practically not explored. However, according to G. Kingston, Superannuation accounts change the structure of household portfolios [11]. As for the Russian literature regarding the development of IIAs, descriptive studies dominate. An overview of investment instruments for individual investors is presented in the work of E.M. Popova and S.A. Rudenko [13]. The types of financial instruments that are most attractive for IIA types A or B are shown in O.S. Belomyttseva and L.S. Grinkevich [14], O.S. Tenetnik [15], N. Kuznetsova and L. Kazantsev [16] articles. D. Karpova and S. Panova analyze the relationship between sociodemographic characteristics and the individuals investment preferences for long-term investment on IIAs [17]. The insufficient study of the effectiveness of IIAs in Russian literature is probably due to the short period of existence of IIAs.

4. QUARTERLY IIA PERFORMANCE

In Russia, there is no single source of statistical information regarding IIAs. The data for Tables 1 to 3 were manually collected and processed by the author, based on data from the Bank of Russia and the Moscow Exchange. The indicator “Number of open IIAs” in Table 1 is not used by the author, since a significant part of open accounts are empty. Accordingly, only the total assets of the IIAs are relevant for the analysis. Note that the statistics of the Moscow Exchange regarding the structure of assets on the IIAs have significant differences with those of the Bank of Russia. The third and fourth columns were calculated by the author based on the data of the Moscow Exchange [18] for the following reasons:

- Moscow Exchange presents full five-year statistics;
- the data of the Bank of Russia contain a clause "according to surveys of the largest brokers and asset management companies", which is not absolutely reliable information.

The Moscow Exchange data on the structure of assets on the IIAs are presented on an annualized basis and were distributed by the author into quarters corresponding to the year.

Table following on the next page

Date	The total value of assets on the IIAs, million rubles	Corporate bonds component, million rubles	Stocks component, million rubles
31.03.15	850	204	467.5
30.06.15	1500	360	825
30.09.15	2350	564	1292.5
31.12.15	5100	1224	2805
31.03.16	6000	960	3600
30.06.16	8000	1280	4800
30.09.16	9000	1440	5400
31.12.16	20700	3312	12420
31.03.17	24777	3716.55	14122.89
30.06.17	28382	4257.3	16177.74
30.09.17	35933	5389.95	20481.81
31.12.17	51202	7680.3	29185.14
31.03.18	59753	11950.6	30474.03
30.06.18	72769	14553.8	37112.19
30.09.18	81024	16204.8	41322.24
31.12.18	98829	19765.8	50402.79
31.03.19	108576	26058.24	56459.52
30.06.19	120252	28860.48	62531.04
30.09.19	143857	34525.68	74805.64
31.12.19	197326	47358.24	102609.52

Table 1: The total value of assets on the IIAs, corporate bonds and stock component, 2015 - 2019, quarterly data
(Source: Bank of Russia [19, 20], Moscow Exchange [18] and author's calculation)

Table 2 is made up by the author based on data from the Bank of Russia. In this case, column 2 implies the volume of debt securities issued on the Russian market excluding bonds of the Bank of Russia, as well as bonds of government bodies and non-residents. The weight of IIA assets is calculated on the basis of corporate bond component (Table 1).

Date	Volume of corporate bonds issued in the domestic market, million rubles	Weight of IIA assets in the volume of corporate bonds issued in the domestic market, %
31.03.15	6 658 663	0.003
30.06.15	6 910 254	0.005
30.09.15	7 126 274	0.008
31.12.15	7 473 738	0.016
31.03.16	7 436 993	0.013
30.06.16	7 891 293	0.016
30.09.16	8 092 050	0.018
31.12.16	8 920 553	0.037
31.03.17	9 086 072	0.041
30.06.17	9 629 829	0.044
30.09.17	10 005 085	0.054
31.12.17	10 865 136	0.071
31.03.18	11 119 648	0.107
30.06.18	11 110 973	0.131
30.09.18	11 133 693	0.146
31.12.18	11 282 983	0.175
31.03.19	11 501 505	0.227
30.06.19	11 918 896	0.242
30.09.19	12 078 478	0.286
31.12.19	12 726 758	0.372

Table 2: Volumes of Russian corporations debt securities issued on the domestic market, weight of IIA assets, 2015 - 2019, quarterly data
(Source: Bank of Russia [21] and author's calculation)

Table 3 is based on the data of the Moscow Exchange and Table 1. Stocks are bought by investors on the exchange at a market price. Therefore, to determine the weight of IIAs in the equity capital of Russian corporations, taking into account the authorized capital is not advisable, and only the issuer's market value is important. So, quarterly data on their market capitalization were taken as data on the equity capital of Russian corporations.

Date	Total market capitalization of corporations, million rubles	Weight of IIA assets in the total market capitalization of corporations, %
31.03.15	27 054 575	0.002
30.06.15	27 262 898	0.003
30.09.15	27 934 938	0.005
31.12.15	28 646 537	0.010
31.03.16	28 783 293	0.013
30.06.16	31 693 914	0.015
30.09.16	33 662 428	0.016
31.12.16	37 216 585	0.033
31.03.17	34 917 552	0.040
30.06.17	32 742 019	0.049
30.09.17	35 738 587	0.057
31.12.17	35 895 751	0.081
31.03.18	38 650 716	0.079
30.06.18	38 900 809	0.095
30.09.18	42 382 278	0.097
31.12.18	39 715 922	0.127
31.03.19	41 327 237	0.137
30.06.19	45 039 397	0.139
30.09.19	44 730 262	0.167
31.12.19	48 369 603	0.211

Table 3: Capitalization volumes of Russian corporations, weight of IIA assets, 2015 - 2019, quarterly data
(Source: Moscow Exchange [22] and author's calculation)

5. DATA ANALYSIS

Based on the analysis of the data in tables 1-3, the author identified the following significant facts:

1. The growth in the amount of IIA assets, as well as corporate bonds and stocks components (Table 1), does not have a linear but a polynomial trend line, and can be described by regression equations. Based on the analysis of columns 2 - 4 of Table 1, the author obtained the following regression equations:

$$Y_{iia} = 624.8*X^2 — 4343.6*X + 9758.2 \quad (1),$$

Where:

Y_{iia} — is the total value of assets on the IIAs;

x — is the quarter number, which takes values from 1 to 20 during 2015 – 2019.

$$Y_{cb} = 187.1*X^2 — 1889.1*X + 4469.9 \quad (2),$$

Where:

Y_{cb} — is total cost of corporate bonds component on IIAs.

$$Y_s = 314.29*X^2 — 2044.7*X + 4517.8 \quad (3),$$

Where:
Y_s — is total cost of stocks component on IIAs.

2. In the fourth quarter of each year there are surges in investor activity. This fact is explained by the peculiarities of the Russian tax legislation. Currently, the investor has the right to present a tax deduction in case he invested last year, regardless of the month. Thus, citizens who invested in IIAs in January and December of the current year receive a deduction at the same time. December investments in this case are more profitable.
3. At present, the main financial instrument of IIAs is stocks, the weight of corporate bonds is gradually increasing. However, for the predominant type A deduction, bonds are theoretically more attractive. In the literature, this feature is noted by a number of authors, for example, O.S. Belomyttseva and L.S. Grinkevich [14]. The interest of Russian investors in Russian stocks could be explained by their belief that Russian stocks are underestimated, as well as by their previous investing experience.
4. The data in Table 2 (column 3) directly indicate a significant increase in the weight of IIA assets in the structure of the bond debt of Russian corporations. Note that this indicator is still small (0.372% at the end of 2019), however, its growth rate is faster than the growth rate of bond debt of Russian corporations. The increase in the weight of IIA assets in the structure of corporate bond debt of Russian corporations can also be described by the polynomial regression equation:

$$d_{iia/cb} = 0.0014*X^2 — 0.0123*X + 0.0315 \quad (4),$$

Where:
$d_{iia/cb}$ — is the weight of IIA assets in the corporate debt structure of Russian corporations (in percent).

5. Table 3 allows us to define the role of IIA assets in the structure of equity capital (market capitalization) of Russian corporations. Column 3 directly indicates a significant increase in the weight of IIA assets in the equity capital structure of Russian corporations. It should be noted that the weight of IIA assets in the equity capital structure is significantly lower than in the corporate debt structure. Corporate bond growth is also ahead of equity growth. The increase in the weight of IIA assets in the equity capital structure of Russian corporations can also be described by the polynomial regression equation:

$$d_{iia/mc} = 0.0005*X^2 — 0.0007*X + 0.0027 \quad (5),$$

Where:
$d_{iia/mc}$ — is the weight of IIA assets in the equity capital structure of Russian corporations (in percent).

6. RESULTS

At last, the authors came to the following results:

1. The regression equations 1 - 3 shown in the data analysis allow us to make a forecast regarding the amount of IIA assets, as well as corporate bonds component and stocks component. The forecast was made for the four quarters of 2020 and is shown in Table 4. Nevertheless, the current unstable situation with COVID-19 does not allow us to talk about the accuracy of the forecast. On the one hand, there is a panic among investors. On the other hand, cheaper assets attract investors to open new IIAs and buy stocks, which is noted in the current periodicals, for example, in the work of P. Smorodskaya [23].

Date	The total value of assets on the IIAs, million rubles	Corporate bonds component, million rubles	Stocks component, million rubles
31.03.20	194079	47310	100181
30.06.20	216602	53466	111651
30.09.20	240375	59997	123749
31.12.20	265397	66901	136476

Table 4: Forecasted value of assets on IIAs, 2020, quarterly data
(Source: author's calculation)

2. Furthermore, regression equations 4 and 5 make it possible to determine the forecast values of the weight of IIA assets in the corporate bond and equity of Russian corporations (Table 5). These weights are growing rapidly. Corporate bonds have a lower weight in the structure of IIA assets compared to stocks. However, corporate bonds have a greater impact on the structure of corporate debt capital in comparison with equity.

The global economic crisis caused by COVID-19 contributes to problems both in self-financing and in government support of corporations. In these conditions, assets of private investors, including those on IIAs, can provide powerful support to large businesses. Therefore, we do not exclude that the actual values of column 2 will significantly deviate in a positive direction from the forecast values.

Date	Weight of IIA assets in the volume of corporate bonds issued in the domestic market, %	Weight of IIA assets in the total market capitalization of corporations, %
31.03.20	0.391	0.209
30.06.20	0.439	0.229
30.09.20	0.489	0.251
31.12.20	0.543	0.274

Table 5: Forecasted weight of IIA assets in the structure of bond and equity capital of Russian corporations, 2020, quarterly data
(Source: author's calculation)

7. FUTURE RESEARCH

The increase in corporate debt and equity capital using IIAs is not very indicative in itself. In our opinion, the growth in the profit of these corporations and their tax burden due to investments by individual investors is of importance. Therefore, we believe we should continue the present study in the following directions:

- analyze the amount of actual IIA's tax deductions according to the data of the Federal Tax Service and their dynamics in order to determine the state's costs for the provision of this deduction;

- determine the industry structure for investors' investments in stocks and corporate bonds to identify investors' investment preferences;
- determine the size of the increase in profits of industries / specific corporations obtained with IIAs, and the corresponding increase in tax payments;
- analyze the role of IIA assets as one of the sources of financing national projects of a federal scale adopted in Russia in 2018.

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INFORMATION SUPPORT FOR MANAGERIAL DECISION MAKING BY FARMERS IN A TURBULENT ENVIRONMENT

Anna Aletdinova
Novosibirsk State Technical University
20, Karl Marx ave., Novosibirsk, 630073, Russia
aletdinova@corp.nstu.ru

Galina Kurcheeva
Novosibirsk State Technical University
20, Karl Marx ave., Novosibirsk, 630073, Russia
kurcheeva@yandex.ru

Georgy Klochkov
Novosibirsk State University of Economics and Management
52/1, Kamenskaya st., Novosibirsk, 630099, Russia
g.a.klochkov@edu.nsuem.ru

ABSTRACT

Following features characterize Russian agricultural organizations and farms: the level of ownership of digital competencies among workers is below average in the areas of economic activity; high demand in the labor market for workers with IT skills; frequent movement of workers in the area during the production process. The latter fact indicates the relevance of the use of mobile applications by workers of agricultural organizations and farmers. The aim of the study was to analyze the information support of Russian agricultural organizations and farms in a turbulent environment. The subject of research in the work are mobile applications. The object of the study was managerial decision-making in the agricultural sector. Mobile devices and smartphones have now become used not only for communication between subscribers, but also for collecting and analyzing data, automating business processes, monitoring the use of agricultural land and the purposeful use of vehicles. The authors analyzed the market of mobile applications for the Android and iOS operating systems. One can classify mobile applications by type of content, language, cost, scope. According to the type of content presented in the application, we distinguish the following groups: education, utilities, business, directories, finances, navigation, output, food and beverage. The total number of applications for agriculture in 2019 and 2020 is close to 100 units. The paper identifies the possibilities of supporting managerial decision-making by employees of agricultural organizations and farmers using mobile applications, in particular, for the following areas of application: information and educational, planning, sales and procurement and production process. Satisfaction with the quality of information support of Russian agricultural organizations and farms ranges from 2.0 to 4.8 points (with five being the maximum) depending on the application scope. The authors conducted a comparative analysis of information support in 2019 and 2020 and analyzed the demand for mobile applications, as well as assessed the adequate information provision for making managerial decisions by employees of agricultural organizations and farmers in a turbulent environment and the need for a quick response to its changes.

Keywords: *agricultural sector, information support, mobile applications, turbulent environment*

1. INTRODUCTION

The success of production and economic activity depends on the degree of adaptability of enterprises and farmers to the changing factors of the turbulent environment. Maneuverability

and flexibility in managing any enterprise face difficulties due to the inertia of the economy (imperfection of technology, moral and physical deterioration of buildings and equipment, traditional management systems), lack of information, or lack of its validity, which determines the complications in choosing a strategic direction of activity. It is necessary to recognize threats to one's existence in time, to increase resistance to "blows of fate", not to miss the opportunities that appear in order to maximize the benefits of these opportunities. The turbulent economic environment in which the economic activity takes place has the following characteristics:

- uncertainty and unpredictability [1, 2]
- mobility, dynamism, speed [3, 4]
- complexity [5-7]
- internal interconnection of elements [8]

In the current conditions of unstable economic environment, only those who can adapt quickly and most effectively to new requirements of the external environment will be able to win the competition. Enterprise flexibility is a response to fluctuations in the parameters of a turbulent economic environment. As noted by E. Bolisani, C. Bratianu, the knowledge allows one to plan and predict in such an environment [2]. A new stage of transformations in the Russian economy is associated not only with the creation of markets for goods, services, capital and labor, with the restructuring of production, but also with the formation of a special system for managing the digital economy that meets the requirements of efficiency in a turbulent environment. To make managerial decisions in a turbulent economic environment, farmers need effective tools. Many researchers propose their projects and put them into practice [9-12]. In addition, the proposed toolkit should correspond to the specifics of the activities of agricultural enterprises and farmers, among them are the following:

- land cultivation
- growing plants and animals
- frequent relocations of people, animals, manufactured products and technical equipment
- the need to regulate the water and temperature balance
- dependence on climatic conditions and geographical features of the territories
- effective and prompt diagnostics and repair of equipment and machinery
- very often in Russia, remoteness from large agglomerations

We consider mobile applications to be the most relevant toolkit for farmers who can support the rapid adoption of managerial decisions in a turbulent economic environment. The aim of the study was to analyze the availability and relevance of mobile applications for agricultural workers and farmers.

2. RELATED WORK AND METHODS

In 2019, the total number of active users accessing the Internet from mobile devices amounted to 3.986 billion [13]. According to the StatCounter service, users of mobile operating systems were distributed as follows: Android - 74.85%, iOS - 22.94%, KaiOS - 0.81% and others - 1.4%. We took as the basis for the analysis of mobile applications the most popular mobile operating systems Android and iOS.

2.1. Related work

At the beginning of 2019, the total number of mobile applications on the Google Play and App Store reached 4.4 million. The number of downloads is constantly increasing, mainly due to the growing markets of Asia and developing countries. In 2019, more than 204 billion downloads were made [14].

In 2019, the average user spent about three hours a day interacting with mobile applications, which is 10% more than a year earlier. By the type of content, the main groups of applications used are entertainment or multimedia, navigation, communication, reference and applied groups [15]. On Google Play and the App Store, the most popular app categories were [14]:

- Business
- Education
- Lifestyle
- Medicine
- Entertainment

With the growing number of mobile users and mobile applications, opportunities are expanding, primarily for solving business problems, namely, the business applications simplify solution of many work tasks. Mobile applications are convenient and fast. They load faster than sites, save user settings and do not require downloading all content in a browser. Applications have access to the native functions of devices (geolocation, camera, and voice recognition), integration with social networks and personalization of material. Under these conditions, the main conclusion that needs to be drawn is that any business needs to use the mobile market for further growth and expansion.

2.2. Methods

In our work, we used statistical methods of summary and grouping. The object of the study was mobile software for the Android and iOS operating systems, which assisted in making management decisions in agriculture. In addition, the authors conducted a survey of Russian agrarian users. The sample size was 24 respondents, of which eight were farmers. We used data for 2019-2020.

3. RESULTS

As results, we consider the analysis of mobile applications for managerial decision-making in agriculture in 2019-2020 on the Android and iOS platforms, as well as an inquiry of their users.

3.1. Analysis of offers of mobile applications for farmers

The development of information and communication technologies in Russia has enabled the agro-industrial complex to provide a powerful tool for networking. Mobile devices and smartphones began to be used not only for communication between subscribers, but also for data collection and analysis, automation of business processes, control of agricultural land use and targeted use of transport. An analysis of the mobile applications offered to Russian farmers for the Android and iOS operating systems allowed us to distinguish the following groups. These are electronic journals, educational resources, reference books and catalogs, agricultural production planning, placement of crops by fields, online product exchanges, participation in exhibitions, measurement and video recording of land plots, daily record of field observation, support for soil moisture measurement and irrigation control systems, navigation , guidelines for regulation, configuration, troubleshooting and selection (Table 1).

Table following on the next page

No.	Scope of application	Mobile Application Groups	Mobile Application Category
1	Educational and Informational	Electronic magazines Educational resources Directories Catalogs	Education Utilities Business Directories
2	Planning	Agricultural production planning Placing crops in the fields	Business
3	Organization of sales and purchases	Agricultural Commodity Exchange Participation in exhibitions	Business Finance Utilities
4	Production process	Measurement, video shooting of the land plots Field observation diary Support of soil moisture measurement and irrigation management system Navigation Agro calculator Guidelines for regulation, configuration, troubleshooting and selection Keeping farm statistics	Navigation Productivity Business Food and drink

Table 1: Support for management decisions in the agricultural sector using mobile applications

The total number of mobile applications in 2019 and 2020 is approaching 100 units; the main languages are Russian and English. Depending on the features of their use, these groups of mobile applications fall into areas of application: information and educational, planning, sales and procurement, production process (Table 1). The first group is most numerous in terms of the number of mobile applications. It presents a wide variety of electronic magazines (Agro-investor, Agribusiness South, Farmer, New Agriculture, etc.). They cover issues:

- solving the problems of management, crop production, animal husbandry, processing and storage of products, bioenergy
- advanced agricultural technologies
- experience of Russian and foreign farmers
- reviews of agricultural machinery, fertilizers, plant protection products
- legal issues
- The following directories and catalogs are available on the issues of:
- global land use in agriculture
- agricultural crop
- means of plant protection and pest control
- agricultural machinery
- livestock
- fertilizers
- purchase prices for agricultural products, herbicides, fungicides, insecticides, protectants, seeds, retardant, desiccant, adjuvants, pest and rodent pest control products, non-agricultural pest control products
- signs of nutrient deficiencies in agricultural plants

These applications give recommendations on the use of hydroponics, the production of shrimp, the creation of small businesses, etc. Assessment of user satisfaction with the quality of this group of applications ranges from 2.5 to 4.5 points at the maximum possible value of 5 points.

This group includes applications from the categories: Education, Utilities, Business, and Directories. The second group contains mobile applications from the Business category. There is a limited number of them for planning the activities of enterprises in the agricultural sector, offering the following features: business-planning, description of farm data, characteristics of technological maps, adding field snapshots, GIS functions, maintaining field history for any period of time (crop rotation and its changes, areas, crop yield dynamics, pests, etc.). User ratings for satisfaction with the quality of these applications are low (with rare exceptions), which indicates the need for further improvement of management decision support tools. Mobile applications of the third group relating to online exchanges of agricultural products, participation in exhibitions, collected in the group Organization of sales and purchases belong to the categories Business, Finance, Utilities. They allow one not only to find the best suppliers, sell agricultural products at a bargain price, but also to promote and monitor the market situation. Estimates of the quality of mobile applications by users range from three to 4.5 points. Mobile applications have found use in the agricultural production process. They came from the categories Navigation, Productivity, Business, Food and Drink. Whereas Poultry statistics application, quite unexpectedly, turned out to be from the "Food and Drinks" category. The fourth group we named "Production Process". These applications intended for using in greenhouses and plant production, and they often go as necessary components of new technologies. For example, irrigation control or agricultural machinery navigation. Customer satisfaction ratings for these applications are above average. If in 2019 their number was less than ten, then in 2020 there are already about 30 units, which indicates the beginning of the development of the market of mobile applications for agricultural production. In the remaining groups, the number of applications and their specifics did not change during this period. Analysis of the cost of using applications for agriculture showed the availability of free, paid and with built-in purchases. However, most of them are free. As practice shows, if the applications are paid, then they offer a wider range of services, do not contain advertising, a more complete selection of materials, audio, video recordings. A separate analysis of paid applications in 2020 showed that users rated them 1-2 points, which indicates their dissatisfaction with the quality of the tools. The authors analyzed the quality of mobile applications for managerial decision-making in agriculture based on user ratings (Table 2).

No.	Rating	Application examples
1	4.7-4.8	Handbook of plants and flowers (4.8) Application for the selection of sprayers (4.7) Field navigator - drawing parallel lines with a navigator application for agricultural machinery (4.7) Field monitoring (4.7) Farmer magazine (4.7)
2	4.4-4.5	Economic Settlement Service (4.5) Tractor Navigation (4.4) Agro-calculator (4.4)
3	4.0-4.2	Agrio - Smart Agriculture (4.2), diagnosis and treatment of plants affected by diseases and pests Farm Management Support (4.2) Hydroponic Agricultural System Handbook (4.1)

Table 2: Examples of tools for making managerial decisions in agriculture with high quality ratings

There were no ratings above 4.8, as well as 4.3 and 4.6, so we do not consider them in the table. Various applications of Internet exchanges have quality ratings in the range of 4.0-4.4.

Consequently, applications from all four groups have high quality according to users. These are handbooks, catalogs, magazines, navigation and monitoring, economic calculations and agro-calculators, support for farm management. Thus, the authors identified four groups of applications for making managerial decisions in agriculture: information and educational, for planning, for organizing sales and procurement, for the production process. The most popular and of high quality turned out to be free applications.

3.2. Analysis of the demand for mobile applications for farmers

We conducted an additional survey among agricultural workers and farmers. These 24 respondents used mobile apps or tried to use them. According to the demand among the respondents (answers to the question "What kind of mobile applications do you need to make managerial decisions"), directories and catalogs are leading (Figure 1).

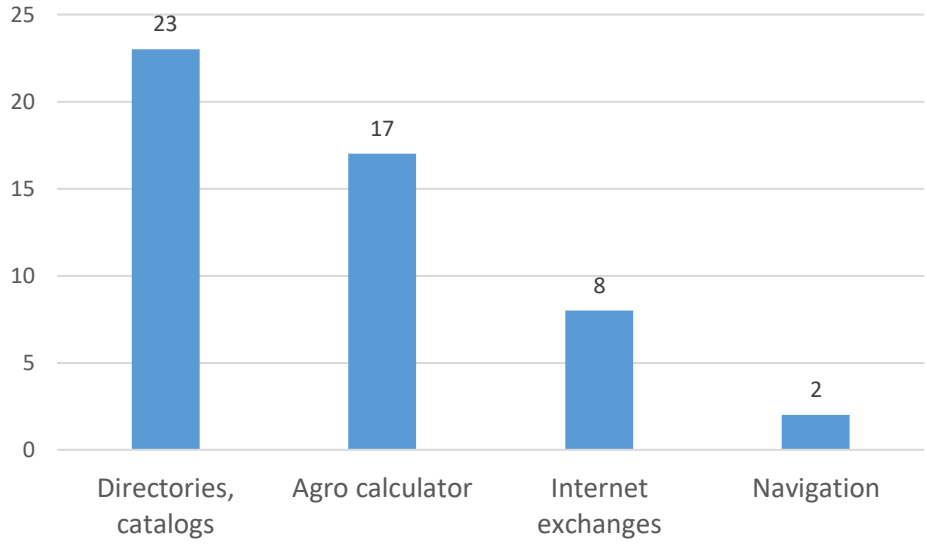

Figure 1: The needs of types of mobile applications for agriculture

Thus, the most popular was the selection of directories and catalogs (23 persons). In second place is an agro-calculator, it allows you to make calculations of the composition and volume of fertilizers to achieve the optimal ratio of nutrients; pesticides and drugs; seed; parameters and seeding coefficient, spraying; crop weight loss from drying out; seeding rate; potential income. Eight respondents highlighted Internet exchanges. They recommended using them for price monitoring. Two respondents noted the need for mobile applications to support the navigation system, they are necessary for operational management. We explain the low level of demand by the initial stage in the development of robotics and automation in agriculture.

4. CONCLUSIONS

Thus, the turbulent economic environment has the characteristics of mobility, dynamism and speed; uncertainty and unpredictability; difficulties; internal interconnection of elements. The specific features of agricultural activity also complicate the situation. This is the need for cultivating the land; growing plants and animals; frequent movements of people, animals, manufactured products, technical equipment; the need to regulate the water, temperature balance; dependence on climatic conditions and geographical features of the territories; the demand for operational diagnostics and repair of equipment and machinery; remoteness from large agglomerations. This allows us to call mobile applications the most convenient tool for agricultural workers and farmers, which is always at hand. Information support for managerial decision-making in agriculture is weaker than in high-tech industries.

We also believe that a lower level of ownership of information and communication technologies and a culture among agricultural workers and farmers affect the level of demand for mobile applications. At the same time, we have analyzed the available tools on the Android and iOS platforms, and we believe that they allow one to support the adoption of managerial decisions mainly for the operational management of agricultural production. Taking into account the specifics of agriculture, we divided mobile applications into applications: information and education, planning, sales and procurement, production process. Paid mobile applications for agriculture, according to users, turned out to be of poor quality: inconvenient, maladjusted and underdeveloped. A survey of agricultural workers and farmers showed that they see a need for directories, catalogs, agro-calculators, Internet exchanges, and navigation tools. We believe that with the digitalization of agriculture, the need for informational support for managerial decision-making in a turbulent economic environment will increase. Consequently, the quality of mobile applications will improve and new types will appear.

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MODERN TENDENCES IN TOURISM MANAGEMENT IN THE COASTAL RECREATIONAL TERRITORIES OF THE RUSSIAN FEDERATION

Anton Mosalev
Associate Professor at Financial University under the Government of the Russian Federation
49 LeningradskyProspekt,125993, Moscow, Russian Federation
AIMosalev@fa.ru

Alexandr Sanin
Doctoral student at Lomonosov Moscow State University
Leninskie Gory, 1, 119447, Moscow, Russian Federation
eather86@mail.ru

ABSTRACT
Currently, many types of tourism are typical for coastal recreational areas of the Russian Federation but the largest number of tourists is attracted by so-called bathing and beach recreation. It is typical of a smaller part of the coasts of the seas and inland water bodies of the Russian Federation due to low population density and climatic conditions for all other coasts. The most important issues in the management of tourism for the coastal recreational areas are the solution of conflicts between tourism andother types of human activity and the normalization of relations between independent and organized recreation. The most attractive for recreational economic activity is the Black sea coasts. The coast of the Azov and Baltic seas, some parts of the Caspian coast, and the coast of the Sea of Japan in the surroundings of Vladivostok are also quite popular. However, these regions are also popular for other types of human activity, which leads to conflicts for the same territorial resources. In such cases in the foreign countries, recreational activities are often considered a priority, due to their multiplicative effect on the economy of the region and the country as a whole, the importance of recreation for maintaining the health and working capacity of people. From the spring of 2020, another factor is added to the projected sharp growth in domestic tourism due to the indefinite closure of European borders due to the coronavirus epidemic. A significant part of recreants in coastal touristic territories, especially on the North Caucasus coast and in the Crimea, belong to the so-called unorganized or independent category. Unorganized tourism has both negative (uncontrolled impact on the environment etc) and positive sides (low cost of recreation, direct income for people who rent housing, etc.). Environmental management should ideally help to minimize the negative effects of unorganized tourism.
Keywords: *Coastal zone, tourism, and environmental management*

1. INTRODUCTION

The problem of tourism management in coastal touristic territories has been quite acute since the mid-20th century, when for the first time in the USSR and in the world, in addition to the long-existing organized tourism in the most attractive coastal recreational territories for tourists, independent tourism began to develop rapidly and independent planning of tourists ' trips became more and more widespread. The number of organized tourists has also increased. Other factors that increase the urgency of solving this problem are the increasing intensity of human activities in the coastal zone, in particular, the growth of cities and towns, the development of transport, in particular, port infrastructure, the construction of new and expanding existing plants and factories, the intensification of agricultural environmental management, in particular, the increase in the amount of fertilizers that enter the sea and pollute water. All of the above aggravates the geo-ecological situation, leads to radical transformations of coastal landscapes,

water, soil and air pollution. Such processes can also be observed in territories and waters far from the coast, but in the coastal zone, as a rule, the intensity of economic activity is greater as well as the severity of the problems listed above.

2. FEATURES OF NATURE MANAGEMENT OF COASTAL TOURIST REGIONS

2.1. Structure of nature management of coastal recreational territories

The physical-geographical and economic-geographical characteristics of coastal recreational territories in Russia have been sufficiently studied [2,3,12,13,14], and relatively much attention is paid in the literature to their recreational use[2,3,7,8,12,19,20]. The coastal territories where tourism is most developed in the Russian Federation include:

1) Black Sea coast of Caucasus.
2) Crimea, especially its southern coast.
3) East coast of the Sea of Azov.
4) The Baltic coast within the Kaliningrad and Leningrad regions.
5) The Caspian coast (Lagan and surrounding areas, the coast of Dagestan).
6) The Japan sea coast in the southern part of Primorye Region.
7) Coasts of rivers, lakes, reservoirs, especially within large cities and their suburbs, which are actively used for recreation (this is a small percentage of the coast of inland water objects)

There are several approaches to defining the "coastal area", the most important of which are geomorphological [2,14] and economic-geographical [1,2,3,6,8,11, 12,19,20]. There are following main types of human activity which are typical for coastal recreational areas.

1) Industrial
2) Residential
3) Agricultural
4) Transport
5) Recreational
6) Protection of nature
7) Special(military)

For many of them, the coastal zone is more attractive in comparison with other territories, in particular, for residential, recreational, in some cases - for industrial (if enterprises are supplied by sea with raw materials or export production by sea, for example, an oil refinery in Tuapse or shipbuilding factory) and transport (seaports, roads and railways often gravitate to the coasts due to physical and geographical conditions and the structure of settlement). Coastal areas with the most favorable climatic conditions - the Black, Azov and Baltic seas, some parts of the Caspian coast and the sea of Japan in the Vladivostok area, the coasts of large inland water bodies in Central Russia and the European South-are characterized by the greatest development of the tourism industry and the greatest intensity of other types of human activity. Different types of tourism are developed in these territories: sightseeing, rural, ethnic, extreme, event, business, health etc. However, the so-called bathing and beach recreation takes the first place in terms of the number of recreants, especially independent ones. Among all the conflicts of nature management that inevitably arise as a result of competition between different types of human activity for the same resources, a special place for recreational coastal territories is occupied by the relationship between organized and unorganized tourism. For different tourists, either the first or second method of tourism is optimal, and only in the 90s of the 20th century, due to an unprecedented drop in the standard of living, both organized and independent tourism on coastal, especially coastal recreational territories sharply weaken. Tourism is the leading type of nature management for coastal recreational areas.

A number of foreign authors note the priority order of tourism in the structure of nature management for such territories[12]. Currently, the following trends are typical for the management of natural resources.

2.2. Main trends in recreational human activity in coastal tourist territories

2.2.1. Implementation of foreign experience

Foreign experience is relevant for environmental management in coastal recreational areas. In particular, the development and implementation of the concept of integrated coastal zone management, and in the implementation and realizationof the principles of marine spatial planning (MPP). By 2004, about 120 countries had developed and used MPP in environmental management for their recreational and other coastal marine areas [11]. It has already been developed for some coastal areas of Russia, in particular, for the North Caucasus coast of the Black sea [19], for which it is particularly relevant due to the high recreational load on the region. The concept of environmental management should more or less complement marine spatial planning, which is more or less implemented in coastal tourist areas. The MPP is understood as a set of analytical, calculation and evaluation measures aimed at justifying the formation and development of certain types of economic activity and their combinations in a particular area (area) of the sea or ocean [9]. Other important components of foreign experience that are being implemented in one way or another in the management of natural resources in Russian coastal recreational areasare the systematic approach, prioritization of tourist nature management in comparison with others, and a cluster approach.

2.2.2. Clustering the economy of coastal regions

Currently, there is a distinct clustering of the economy of coastal tourist regions in the world as a whole, and in Russia in particular. Emerging or strengthening their positions as a result of the multiplier effect, enterprises are increasingly strengthening their connection with enterprises working in the tourism industry. However, the features of emerging tourist clusters also largely determine the natural features of the territory, as well as the features of recreational activities on it. In particular, the latter include the types of recreation that take place, the ratio between organized and unorganized recreation. Only on the territory of the Crimea according the Federal program "Socio-economic development of the Republic of Crimea and the Federal city of Sevastopol until 2020" it is planned to create 11 tourist clusters [20].

2.2.3. Adverse and dangerous natural processes

Ignoring or insufficiently taking into account adverse and dangerous natural processes makes it difficult to use the territory economically, and in some cases leads to significant material damage, and even to human losses. Examples include mudslides on the North Caucasus coast, abrasion processes on the coasts of the Baltic, Black, Azov and other seas, lake Onega and other inland reservoirs. This can also include earthquakes and tsunamis in the Far East, upsurge-down surge of water in the Gulf of Finland, the sea of Azov and in Caspian sea, slope processes, in particular, landslides on the coasts of the Black and Caspian seas, thermo abrasion processes on the Arctic coasts [18]. Measures tocounteract thedangerous processes are as follows:

1) Minimization (if possible) of economic use of coastal areas where dangerous processes are best revealed. These include the bottoms of beams, especially their estuaries facing the sea coast, areas of the coast with active abrasive processes, landslide slopes, etc.
2) Informing recreationists about the dangers associated with adverse and dangerous natural processes.
3) The effort for the most attractive areas of the coast with dangerous natural processes for economic activity: coastal protection, landslide measures, and so on

2.2.4. System approach

To improve the efficiency of environmental management, it is necessary to consider the coastal territory as a system. A systematic approach to physical and economic geography has been actively developed by many researchers[4,8,13,16,17], which facilitates the identification of links between various components of nature, as well as between nature and man. The coastal territory has a number of properties that are typical for all systems, in particular, some (but not all, since it belongs to open systems) of matter and energy flows are closed within it. A systematic approach to the study of coastal territories and management of natural resources on them allows to determine the spatial boundaries of the distribution of certain impacts on the system.

2.2.5. Ignoring informal (independent, unorganized) of tourists

In all touristic literature, as a rule, unorganized (independent) touristsare ignored or considered in passing. That is those tourists who independently, without buying a tour, plan and carry out a tourist trip, but in many cases acquire some elements of the tour, for example, hotel or hostel accommodation, if they did not choose private homes, or excursions[17]. However, for those coastal recreational areas where the largest number of tourists, in particular, the coast of the Crimea and the Kuban region, unorganized recreationists predominate (although in the Crimea their share decreased after the of the Crimea by Russia in 2014). Independentvisitorsmake up the majority of tourists on the coasts of inland water bodies, lakes, reservoirs and large rivers. It is assumed that in the future, unorganized tourism will at least retain its importance [17]. As a rule, these areshort trips from the nearest locality, often by private vehicle. Of course, in the vicinity of large cities, especially those with millions of people, there are hotels, resorts and recreation centers that make organized tourism possible, but many recreationists do not have the need or financial opportunity to use their services. For independent tourists the advantages of this method of recreation are as follows:

1) Freedom to plan routes and spend time. They can make your own decision about how to spend the entire day of rest: swim for a whole day in the sea, lie on the beach, visit places of interests, play sports, walk around the city, or just stay in an apartment or room in hotel or hostel, where the tourist is staying. They also organize their own meals, which helps to make them tastier, healthier and more diverse. They can visit several regions or cities in a sequence that is convenient for the tourist. Freedom to choose transport to come and go (train, car, bus, plane etc)
2) Saving money for recreational users, this method allows them to get more for less money. In addition, they are able to avoid paying for services that they do not need, such as taxis from the train station or breakfasts that they do not go to at the hotel.

At the same time, unorganized recreationists are an important source of income for many local residents, due to their purchase of services for accommodation, transportation, and excursions. However, this often refers to the "grey" economy. Both organized and independent tourists are needed to take into account the interests of all, not just recreational enterprises, but the problem of ensuring their safety and avoiding taxation of local residents who provide them with services remains unsolved. The resort fee introduced by a number of regions can make a certain contribution to the solution of this problem.

3. IMPACT OF THE CORONAVIRUS PANDEMIC ON TOURISM IN COASTAL RECREATIONAL AREAS

3.1. Impact of the pandemic on the main players in the tourism market

Currently, in the spring of 2020, tourism is also experiencing difficult times due to the coronavirus pandemic and its diverse consequences. Fortunately, physically, at least on April

1, 2020, potential touristsdo not become less. Nevertheless, it is worth focusing on the problems experienced by each of the participants in the tourism industry in whole and in coastal areas in particular.

3.1.1. Independent recreants

In a number of regions of the Russian Federation, there are prohibitionsmoving within cities and regions is forbidden, which makes recreation impossible. The deadline for lifting these restrictions is unknown, but they are likely to last at least a few weeks. Travel between regions is not currently prohibited (which stimulated a brief increase in the number of tourists in the Crimea and Krasnodar region at the end of March), but it leads to the risk of infection for the tourist and those in contact with them, public condemnation, and in some regions, quarantine measures on arrival. The possibility of a situation when, due to the fear of these factors, some time even after the normalization of the epidemiological situation, also quite high. There is the example of Abkhazia, where military operations had been finished till 1994, but tourism recovered only in the early 2000s. There is also the problem of reducing the income of many tourists and increasing uncertainty about the future due to the economic consequences of the epidemic.

3.1.2. Organized recreationists

Booking of accommodation facilities for recreation of organized tourists is suspended until June 1, which makes organized tourism impossible, therefore, to organize tourist trips before June 1, you need to switch to the category of independent tourists, or choose tours without accommodation. However, in Russia, such tours, unlike bus tours in Europe, are not popular, although they may well be developed using long-distance trains. Trains are comfortable, characterized by relatively affordable prices and routes that allow to combine overnight accommodation and travel of tourists. There is also the problem of reducing the income of many tourists and increasing uncertainty about the future due to the economic consequences of the epidemic, and the problem of public condemnation of tourism.

3.1.3. Recreators (organizers of recreation for organized tourists)

The prohibition on the operation of the accommodation facilities of tourism for them plays the most negative role. For those who provide related services (excursions, etc.), losses are also large due to a sharp decline in demand.

3.1.4. Local residents of tourist areas

On the one hand, many local residents from the end of March 2020 began to react negatively to visitors, considering them as a potential source of infection with coronovirus. However, by the summer period, especially in the case of a decline in the severity of the epidemic, we should expect a change in attitude, since tourists, especially independent, are an important source of income for many local residents (renting housing, organizing excursions, selling products, souvenirs and other goods, taxi services, etc.).

3.1.5. Small and medium-sized businesses of tourist territories that are not directly engaged in tourism

Widely known for the multiplier effect of the tourism industry: one job in tourism creates up to 10 jobs in other sectors of production of goods and services (Gulyaev, 2011). A sharp decline in the tourism industry will affect the income of cafes, canteens and restaurants, transport companies and some other organizations. The key for seaside recreational areas is the summer season, during which the most mass recreation takes place. At present, at the beginning of April 2020, it is difficult to make any forecasts about how it will pass this year, but several scenarios

can be identified, especially since this is the beginning of the entry of the tourism industry of the Russian Federation into the new economic relations that will develop in Russia.

3.2. Three forecasts of the situation on the tourist market for the summer season of 2020

3.2.1. Moderately optimistic

Improving the epidemiological situation in Europe, Russia and the world by the end of spring 2020, lifting prohibitions on trips by trains, buses, cars and plains abroad in may-June 2020. Partial restoration of tourist flow to foreign sea resorts (the Mediterranean, etc.). however, the fear of possible infection or deterioration of the situation, which may make it difficult to return to Russia or cause the need for isolation and quarantine after return, as well as a decrease in the level of income will not allow the external tourist flow to recover more than half. Other potential tourists will prefer domestic tourism, including on the sea coast, or refuse to travel far. However, the domestic tourist flow will grow slightly or not at all, as many residents of the Russian Federation will refuse to travel within the country due to fears that the virus will return, or the deterioration of their financial situation.

3.2.2. Intermediate

Improvement of the epidemiological situation in the world, Europe and Russia by May-July 2020, in some regions (for example, Africa, southern hemisphere countries)- later. Maintaining the prohibition on travel by land and flights abroad until the end of the summer (possibly with the exception of some countries, such as Belarus or the Transcaucasian countries). Reorientation to organized and independent domestic tourism. Despite the decline in income and concerns about the resumption of the epidemic, the number of tourists in seaside tourist areas is growing, mainly due to low-budget organized and independent recreants

3.2.3. Pessimistic

In the summer of 2020, the epidemiological situation in the Russian Federation will remain difficult, or will alternately improve and worsen. The borders will remain closed or foreign countries will not allow Russian tourists themselves because of fears of their spreading the virus. In such a situation, there is a high probability of extending the prohibition on tourist accommodation during part or even the entire summer season, as well as a strong decline in the level of income of people, which will practically destroyed organized tourism and greatly weaken the position of independent. The difficulties listed above will become more acute for both tourists and small and medium-sized businesses in coastal recreational areas and local residents (in the case of an optimistic and intermediate scenario, they will be avoided)

3.2.4. Some possible solutions in the current situation

An urgent task of environmental management is to mitigate the negative consequences for the tourism industry and recreational use of natural resources in the case of any of three scenarios. This requires maintaining both organized and independent recreation. Without organized recreation, the existing recreational infrastructure and tourism industry cannot function properly. Restrictions on unorganized recreation will lead to a sharp decrease in the income of a significant part of local residents (as can be seen in the example of the Crimea in 2014-2015, when there was a sharp increase in the share of organized recreants and a decrease in unorganized ones). With some degree of probability, you will need to comply with anti-epidemic measures: a prohibition of mass events, rapid testing and medical tests at the entrance to recreational areas, and immediate medical assistance for signs of illness. If the second, intermediate scenario is implemented, the number of tourists, especially unorganized ones, in Russian touristic territories may significantly increase, which exacerbates the issue of redistributing tourist flows that has been standing since the Soviet era.

Thus, in Crimea, the southern coast is "overloaded" with tourists, while on its other coasts, with some exceptions, the density of recreants is small. On the North Caucasus coast of the Black sea, especially its section between Sochi and Tuapse, the density of recreants is significant, while on the coast of the Caspian sea, which is similar in physical and geographical conditions, the number of tourists is relatively small. However, despite the possible aggravation of the problem of redistribution of tourist flows, a slight increase in them is favorable for Russian coastal tourist territories, as it will help to alleviate the socio-economic problems that exist there. These include seasonal employment of locals, the dependence of small and private businesses on the inflow of tourists, and the relatively weak level of development of industry and agriculture in many coastal, especially coastal territories. The coronavirus pandemic has exacerbated these problems. However, the closure of borders, which is highly likely to continue in the summer season of 2020 (or even if the borders are opened, tourists are still expected to travel abroad relatively little), causes a high probability of growth of domestic tourism in a favorable epidemiological situation, which in turn will provide a multiplier effect for the economy of coastal regions, in other words, will have a positive impact on the service sector, one way or another related to tourism (for example, transport). The multiplicative effect of tourism has been repeatedly noted in specialized literature (10, 15, 17)

4. CONCLUSION

Nature management in the coastal territories is characterized by insufficient consideration of adverse and dangerous natural processes, rather acute, especially for territories with a large population density and intensity of economic activity, conflicts of nature management, and ignoring of independent recreation. In 2020, there is an urgent need to take into account the situation that has developed since the beginning of the coronavirus pandemic, and especially its consequences, including economic and social ones. In April 2020, they are not clear, but very likely it will fall of income for many holidaymakers, as well as changing social relationships between them, moreover in any case it will affect the consumer habits of holidaymakers during the holidays. But the most important factors that will determine the size and structure of the tourist flow to the seaside recreational areas will be the epidemiological situation in summer and the degree of openness of the borders of Russia. In addition to considering the consequences of the pandemic among the most important tasks of environmental management in coastal areas should mention the necessity of taking into account adverse and dangerous natural processes, mitigation of existing conflicts between different types of human activities, the use of relevant international experience, in particular, marine spatial planning and concept development of coastal zone management. The solution of these tasks should contribute to the achievement of an important goal of environmental management: the harmonization of the interests of all groups of tourists, local residents, the state, the tourism industry and other small and medium-sized businesses.

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SPATIAL DEVELOPMENT OF SMALL BUSINESSES IN THE SAMARA REGION

Bessonov Igor Sergeyevich
Samara State University of Economics, Russia
igornews@rambler.ru

ABSTRACT

The development of small business is one of the priorities of the Russian economy. The current transition to the concept of spatial development requires an assessment of the economic space heterogeneity, taking into account municipal characteristics and the level of agglomeration development. The purpose of the study is to identify the spatial features of small enterprises development due to the economic space heterogeneity. The object of research is small enterprises of municipalities of the Samara region. The authors formalize the spatial potential of small enterprises using quantitative and qualitative characteristics of the activities of small enterprises of various organizational and legal forms. The heterogeneity of small enterprises distribution of five enlarged types of activity is considered, taking into account the agglomeration zones of influence of the Samara-Toglyatti agglomeration. The Theil index and the Williamson index are used as tools for assessing spatial inequality. Municipalities with an insufficient level of development of the considered types of activities are indicated based on the density of placement (per unit of population). The analysis of structural differences of small business across all types of economic activity using the Ryabtsev index has been carried out, which has proved the existence of significant differences at the municipal level. The hypothesis of centers of influence presence on the structure of small business by type of economic activity is considered and confirmed by calculating the Pearson correlation between the values of the Ryabtsev index of structural differences and distance. The city districts of Samara, Syzran and four single - industry cities- Toglyatti, Chapaevsk, Pokhvistnevo, and Oktyabrsk - were considered as possible centers of influence. The hypothesis significance about the correlation significance coefficient for Samara and Toglyatti is confirmed. Samara has a higher correlation level for straight line distance, and Toglyatti has a higher correlation level for road distance.
The results of the research can be used in the activities of regional and municipal authorities for the development of strategic documents for the spatial development of the Samara region.
Keywords: *Spatial potential, Small business, Individual entrepreneur, Economic policy, Single-industry city*

1. INTRODUCTION

The spatial orientation of small enterprises as a strategic resource of the regional and municipal economy stems from the Forecast of socio-economic development of the Russian Federation for the period up to 2030. Regional and municipal economic policies are recognized as a significant factor affecting small businesses: "Small or medium-sized enterprise development implies always a specific enterprise development on a certain territory"[11, p. 32]. Its target orientation and implementation efficiency directly affect the number of small businesses, the prevailing economic activities, innovation-oriented presence and capital-intensive market participants, and other important characteristics. Previously, we derived and justified the spatial potential of small enterprises definition. The spatial potential of small enterprises is the total realizable and potentially achievable level of realization of entrepreneurial abilities of residents of a local community, formalized as small enterprises activity regardless of their organizational and legal form, considered in the uneven distribution and taking into account the forms of territorial concentration, and based on human potential [2, p. 73]. Spatial differentiation of small business potential realization requires studying at the meso-level using municipal statistics.

This is due to the peculiarities of the approach: space consideration at the level that allows us to study local features and spatial structures (first, cluster associations, technoparks, territories of advanced socio-economic development), as well as to take into account the nature of development: depression or success.

2. METHODOLOGY FOR STUDYING SPATIAL DIFFERENTIATION

As the analysis of scientific literature shows, when studying the spatial differentiation of economic development, there is a variety of opinions and approaches used. For example, from the summary table of A.V. Lapin "Basic methods for assessing socio-economic differentiation of territories based on the materials of Russian and foreign studies" [5, p.25-26], it can be concluded that modern methods for assessing spatial differentiation are very diverse and cannot be the only correct direction of scientific research. The methods used are chosen largely based on the tasks set in the study and the information sources available for use. V. Yu. Maslikhina describes 3 groups of methods for estimating spatial inequality that characterize the scale, structure and dynamics, respectively [6, p. 3]. It is noted that domestic researchers use mostly simple methods that have several disadvantages that make them not completely objective (they do not meet the five axioms of measuring inequality).

2.1. Methods for estimating the unevenness of spatial distribution

We believe it is possible in the context of this study, given the available information at the municipal level to apply Williamson's variation coefficient (formula 1) [5, p. 22], taking into account the population's economic space is an important component of the spatial potential and known since 1965 as well as the first Theil index (formula 2) [5, p. 23], corresponding to the five axioms of inequality measurement [6, p. 4] and used since 1967. It is also interesting to calculate the small businesses density per 1 thousand inhabitants at the level of cities and districts. For the sake of fairness in evaluating the methodology used, it should be noted that there is a modern domestic critical view of the use of the Williamson's coefficient: "He did not bother to prove his idea", it is argued that the coefficient is used to roughly assess the inequality of the population, and not interregional inequality [3, p.45]. With hypothetical disadvantages, population-weighted indices are widely used in scientific research, and in this study, their use, in our opinion, is justified due to the significant differentiation of municipalities by population level, as well as due to the fact that the population acts as a carrier of entrepreneurial abilities that form the spatial potential of small enterprises. The Williamson's coefficient of variation is calculated using the formula 1:

$$V_w = \frac{\sqrt{\sum_{i=1}^{N}(x_i-\bar{x})^2\frac{P_i}{P}}}{\bar{x}} \qquad (1),$$

where x is the number of small businesses, P is the territory population, and N is the number of territories.

The first Theil index is calculated using the formula 2:

$$T_1 = \frac{1}{N}\sum_{i=1}^{N}(\frac{x_i}{\bar{x}} \times ln\frac{x_i}{\bar{x}}) \qquad (2),$$

where x is the number of small businesses and N is the number of territories.

2.2. Methods for assessing structural differences by type of economic activity

Consideration of differences in the territorial structure of small enterprises in the Volga Federal district regions by type of activity was carried out using the Ryabtsev index of structural differences calculated using the formula (3):

$$I_{R=}\sqrt{\frac{\sum_{i=1}^{n}(d_2-d_1)^2}{\sum_{i=1}^{n}(d_2+d_1)^2}} \quad (3),$$

where n is the number of units of the population, d_1 and d_2 are the specific weights of the two sets being compared [14, p. 71-72].

It has a number of advantages over the Szalai and Gatev structural differences indexes: the values do not depend on the number of gradations of the population structure, the denominator means the maximum amount of differences at the maximum values. The minimum values of the index correspond to the complete identity of the structures, the maximum corresponds to the complete opposite. Using the described index, paired comparisons of the structure of small enterprises by type of activity between regions were made. In this regard, the Pearson correlation between the structure parameters and the distances along the straight line and on the road is calculated (formula 4):

$$r=\frac{\sum(x-\bar{x})(y-\overline{y})}{\sqrt{\sum(x-\bar{x})^2\sum(y-\overline{y})^2}} \quad (4),$$

where x, y are the values of the compared sets [8].

Since the sample was less than 100 observations, an adjusted value was applied (formula 5) [4, p. 13]:

$$r` = r\left(1+\frac{1-r^2}{2(n-3)}\right) \quad (5).$$

To check the significance of the sample correlation coefficient, the Fisher's transform (formula 6) was used [4, p. 14]:

$$u = \frac{1}{2} ln \frac{1+r`}{1-r`} \quad (6).$$

The test essence is to calculate the empirical value of u and compare it with the boundaries of the critical area without accepting the hypothesis of the sample correlation coefficient significance. The boundaries of the zone of uncertainty, if we get to the right of which we accept the hypothesis of the sample correlation coefficient significance with a 95% probability, are determined by formulas 7 and 8

$$u_{0,05} = \frac{1,96}{\sqrt{n-3}} \quad (7),$$

$$u_{0,01} = \frac{2,576}{\sqrt{n-3}} \quad (8)$$

where n is the number of observations [4, p. 16].

2.3. Approach to considering the distribution of small enterprises priority activities by agglomeration zones

To consider the agglomeration zones allocated on the territory of the Samara region, it is proposed to use the developments of Yu. V. Pavlov and E. N. Koroleva [10]. They studied Samara-Togliatti agglomeration and the zones of its influence on municipal districts and urban districts. Samara region based on data on the population and distance between territories. Three zones are uneven: the zone of strong influence (core) consists of the city districts of Samara and Toglyatti – the most populated areas of the region, as well as the Volga and Stavropol municipal districts, the territory is located diagonally from North-West to South-East direction. The zone of average influence consists of 1-2 municipal districts adjacent to the core along the perimeter from the North, East and South (with the exception of the Neftegorsky district in the East), it consists of the urban districts of Syzran, Oktyabrsk, Kinel, Zhigulevsk, Novokuibyshevsk and eight municipal districts). The zone of weak influence, consisting of the urban districts of Pokhvistnevo, Otradny, Chapaevsk and seventeen municipal districts, is located mainly at a major distance from the core (with the municipalities in the West and southwest of the region exception). Based on data on real operating small enterprises obtained from the Register of small and medium-sized enterprises, it is possible to make a spatial analysis of the development of certain types of activities in the context of municipalities [13]. We have calculated the total data for individual businesses and legal entities to comply with a comprehensive approach that represents small business as a single institution, from the analysis of which it is unacceptable to exclude the activities of individual entrepreneurs [1]. This is especially important due to the low criteria for small business in Russia, which is noticeable in international comparisons [7].

3. SPATIAL ASPECTS OF THE DEVELOPMENT OF SMALL ENTERPRISES IN THE SAMARA REGION

3.1. Analysis of heterogeneity in the spatial distribution of small enterprises

The core of the agglomeration system of the Samara region has a number of small enterprises distribution from 2280 units in the Volzhsky district municipality up to 51,840 units in Samara city, the average density is 40.78 small businesses per 1000 residents (table 1). The zone of average influence is in the middle of the rating of average density of small enterprises-22.51 per 1000 inhabitants, the maximum and minimum values differ significantly (in the Elkhovsky district, the minimum number of small enterprises is 118 units, in Syzran-the maximum is 3667 units). Area of weak influence of the distribution of the number of small businesses from 185 units in Klyavlinskiy area to 1,194 units in Chapayevsk has an average density of small enterprises of 16.21 per 1,000 people, i.e. it has the lowest level of entrepreneurial capacity economic space.

Level of influence of Samara-Togliatti agglomeration system	Average density of small businesses per 1000 inhabitants	Maximum number of small businesses	Minimum number of small businesses	Williamson coefficient of variation for the number of small businesses	Theil index (first) of the number of small businesses
Zone of strong influence	40,78	51840	2280	1,16	0,52
Zone of average influence	22,51	3667	118	1,59	0,47
Zone of weak influence	16,21	1194	185	0,79	0,16

Table 1: Spatial distribution and differentiation of small enterprises of the Samara region (legal entities and individual entrepreneurs) by zones of influence of the agglomeration system "Samara-Toglyatti" as of 1.01.2019

The Williamson's coefficient (taking into account the population distribution) shows the greatest differentiation-1.59 - in the zone of average influence, the second place is the zone of strong influence (core), the most homogeneous zone is the zone of weak influence. These conclusions are somewhat contradicted by the analysis using the Theil index (which takes into account the small businesses distribution without a population): the greatest differentiation is marked in the zone of strong influence (the core of the agglomeration), and the average level of differentiation is marked in the zone of medium influence. For the selected five aggregated types of activity, the analysis of spatial differentiation of small enterprises without division into agglomeration zones was performed (table 2). The Theil Index is calculated by replacing the zero value with a certain small number (in this case, the value 0.001 is taken) [12, p. 263].

Type of activity	**Maximum number of small businesses**	**Minimum number of small businesses**	**Williamson coefficient of variation**	**Theil index (first)**
Crop production, animal husbandry and hunting	273	2	2,17	0,26
Research and development	290	0	14,84	2,62
Trading activities	18823	31	10,89	1,74
Production activities	2756	5	10,52	1,83
Information activities	1373	0	13,29	2,31

Table 2: Spatial development of small enterprises of priority types of activity (legal entities and individual entrepreneurs) in the Samara region as of 1.01.2019

The most differentiated enterprises in the region are those engaged in research and development, as well as information activities. In some municipalities, no small businesses of these types of activities are registered, with maximum values of 290 and 1,373 units. The ranking order according to the values of the Williamson coefficient and the Theil index is basically the same. The found significant differentiation of activities implies the need to identify areas of accelerated and lagging development. As an example, the enterprises of information activities distribution is considered in detail. They are represented in the "Register of small and medium-sized enterprises" by the activities "Development of computer software, consulting services in this area and other related services" and "Activities in the field of information technology" (table 3). The highest concentration is observed in the zone of strong agglomeration influence: 89.6% of the total regional number is located, the average density of 1.019 units per 1000 people of the population; in the average zone, the density index is 0.293, in the zone of weak influence - 0.126. Thus, there is a significant impact of agglomeration concentration of intellectual resources on information development small enterprises, despite the separation possibility of largely autonomous functioning of small enterprises of this type. Among the municipalities, the highest density is in Samara city – 1,187 units per 1000 population, 1,373 enterprises (59 % of the number in the region). In the zone of strong influence of Samara-Toglyatti agglomeration, three of the four municipalities (Toglyatti, Volzhsky and Stavropol districts) have a density below average. In the zone of average influence, there is a lower-than-average density level not only in a number of municipal districts, but also in the city of Oktyabrsk. No enterprises are registered in the Elkhovsky municipal district. In the zone of weak influence of agglomeration, there are no enterprises in Bolshechernigovsky and Koshkinsky districts, and there are no urban districts among 13 municipalities with a level below the average (Otradny, Pokhvistnevo, Chapaevsk).

Spatial characteristic	Level of influence of Samara-Togliatti agglomeration system		
	Zone of strong influence	**Zone of average influence**	**Zone of weak influence**
Number of small businesses in the zone	2084	173	69
Average density of small businesses per 1000 people	1,019	0,293	0,126
Municipalities with a density level below the zone average	Urban district of Togliatti. Volzhsky and Stavropol municipal districts.	Urban district of Oktyabrsk. Municipal districts Alekseyevsky, Bogatovsky, Bolsheglushitsky, Elkhovsky, Kinelsky, Krasnoarmeysky, Krasnoyarsky, Pestravsky.	Municipal districts Bezenchuksky, Bolshechernigovsky, Kamyshlinsky, Klyavlinsky, Koshkinsky, Neftegorsky, Pokhvistnevsky, Privolzhsky, Sergievsky, Syzransky, Khvorostyansky, Chelno-Vershinsky, Shigonsky.

Table 3: Spatial development of small enterprises (legal entities and individual entrepreneurs) of information activities in the Samara region as of 1.01 2019

3.2. Analysis of structural differences between small businesses by type of activity

Table 4 presents data on the analysis of structural differences in the types of activities of small enterprises between single-industry urban districts. For comparison, data from the regional center and the average city of Syzran, which is not a satellite of the regional center, are also taken. Calculations were made for all 29 types of activities presented in the materials of the Continuous monitoring of small and medium-sized businesses in 2015 in the context of municipalities, and data on aggregated subgroups were excluded to avoid double counting [9].

	Samara	Oktyabrsk	Pokhvistnevo	Syzran	Toglyatti	Chapaevsk
Samara		0,394	0,444	0,328	0,101	0,386
Oktyabrsk	Significant		0,132	0,102	0,334	0,106
Pokhvistnevo	Significant	Low		0,13	0,393	0,069
Syzran	Significant	Low	Low		0,269	0,078
Toglyatti	Low	Significant	Significant	Important		0,336
Chapaevsk	Significant	Low	Very low	Low	Significant	

Table 4: Characteristics of structural differences of small enterprises (legal entities and individual entrepreneurs) in urban districts of the Samara region using the Ryabtsev index by type of activity, 2015

The degree of differentiation of the structure of small enterprises by type of activity according to the Ryabtsev index varies from low to significant. We have considered the hypothesis of potential centers of influence presence, whose structure of small business activities has an impact on neighboring territories. Samara, Syzran, and the single-industry formations of Toglyatti, Chapaevsk, Pokhvistnevo, and Oktyabrsk are considered as potential centers of influence. For that, the pairwise comparison of the structure of activities with the other municipalities of the region using the Index Ryabtsev and calculated correlation values Ryabtsev index and distance from potential centers of influence to the municipal formations of the Samara region (table 5). The context of considering the economic space implies a complex influence that can be carried out through various modes of transport, as well as through information exchange.

City district	Correlation between structural differences and distance in a straight line		Accepting hypotheses about the correlation coefficient significance	Correlation between structural differences and distance along a road		Accepting hypotheses about the correlation coefficient significance
	Correlation level for the adjusted value of the Pearson coefficient	Feature on a scale of a linear correlation Chaddock		Correlation level for the adjusted value of the Pearson coefficient	Feature on a scale of a linear correlation Chaddock	
Samara	0,669	Moderate	Yes	0,602	Moderate	Yes
Toglyatti	0,645	Moderate	Yes	0,785	Strong	Yes
Chapaevsk	-0,088	Practically absent	No	-0,102	Practically absent	No
Syzran	0,101	Practically absent	No	0,363	Weak	No
Pokhvistnevo	0,284	Weak	No	0,331	Weak	No
Oktyabrsk	0,008	Practically absent	No	0,260	Weak	No

Table 5: Correlation value of the level of structural differences between small businesses (legal entities and individual entrepreneurs) in the Samara region's urban districts and the distance between them, 2015

In table 5 shows the characterization of the obtained linear correlation on a scale of Chaddock. The data was compared with the uncertainty zone for the number of observations equal to 37 (as many municipalities make up the Samara region) in the range of 0.336-0.442. We can confidently accept the hypothesis about the correlation coefficient significance for Samara and Toglyatti. For other cities, we reject this hypothesis, because only for Syzran (correlation with distance by road) the coefficient fell into the zone of doubt, the other values lie in the area of rejection of the hypothesis. The structure of small businesses in Samara has a moderate impact on similar structures in neighboring municipalities in spatial terms, the distance along a straight line is more important than the distance along highways. The structure of the city district of Togliatti has a strong influence on the activities of small businesses in the surrounding municipalities, communications are carried out mainly by road. The correlation method also assumes the potential influence of an unaccounted factor, such as, it is possible to have a complex impact on the structure of all types of enterprises by type of activity.

4. CONCLUSION

The spatial potential of small business in the Samara region is considered in a comprehensive approach without dividing it into the activities of individual entrepreneurs and legal entities. According to the analysis, it is implemented differentially depending on the heterogeneity of the economic space.

The paper considers the distribution within the zones of influence of the agglomeration system "Samara-Toglyatti" showed high concentration and high density of small enterprises in the area of strong influence, there is significant internal heterogeneity distribution (area to the city districts of Samara, Toglyatti and the Volzhsky and the Stavropol municipal areas). The analysis of the selected aggregated types of activities in a holistic view of the territory of the region showed uneven development and internal heterogeneity in municipalities. A detailed analysis of the small businesses distribution by type of activity, taking into account agglomeration zones, identifies municipalities with indicators of average density per 1000 people less than the average value for the zone. The level of structural differences between single-industry towns of the Samara region in 29 types of economic activity of small enterprises is calculated and characterized from low to significant. The structural differences correlation in the types of activities of single-industry towns and other municipalities of the Samara region and the distance along the straight line, as well as by road, was carried out. A strong spatial influence of the structure of activities of small enterprises in Toglyatti on the structure of surrounding small enterprises by road, as well as moderate direct communication was revealed. For Samara, the relationship in both cases is rated as moderate. Other comparisons showed less significant results and the hypothesis of their significance was not tested. This research develops a spatial approach to the potential and activities of small businesses consideration. It allows you to identify priority areas for the specific types of small businesses development and justifies the further development of Samara and Toglyatti as centers of structural influence for small businesses development. The obtained conclusions can be applied in the developed spatial development Strategy of the Samara region and in the adjustment of municipal socio-economic development Strategies.

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CREATION OF FUZZY KNOWLEDGE MODEL FOR WHEAT YIELD PREDICTION

Anna Pavlova
Novosibirsk State University of Economics and Management, Russia
annstab@mail.ru

ABSTRACT

Mathematical prediction models serve as the main component of a modern information system for managing complex dynamic processes and supporting decision-making. These models find wide practical application in fuel and energy, water management, agricultural technology, information and communication systems and other information systems. In conditions of uncertainty of input parameters of the system (parameters of the environment) related to incomplete initial data, inaccuracy and blurred boundaries of fuzzy variables, variability of weather conditions, prediction of wheat yield by methods of fuzzy logic is most relevant. The paper presents a fuzzy knowledge base for wheat yield prediction, based on a production model with fuzzy linguistic variables. With the help of the developed knowledge base, computational experiments were carried out to model wheat yield on the example of the field hospital of the Siberian Federal Scientific Center of Agrobiotechnologies (Russia) depending on the conditions of heat and moisture supply of wheat growing period.

Keywords: *geodatabase, land assessment, geographic information systems, crop yield prediction, wheat, prediction model, fuzzy set, product rules, fuzzy conclusion, knowledge base*

1. INTRODUCTION

Forecasting crop yields is necessary to address the food security of the state at macro and meso levels. Existing mathematical models of yield prediction widely use a correlation data analysis apparatus, which allows to establish a relationship between productivity and agrometeorological factors. However, under conditions of uncertainty and blurred boundary of input and output variables of the simulated system, such mathematical models have significant limitations [1-2]. To overcome the disadvantages, a cluster analysis apparatus is used to group the original data based on the degree of similarity to the analog year. The main difficulty consists in statistical processing of agrometeorological parameters of different years, which differ in terms of heat and moisture supply of growing periods of crops, identification of optimal agrometeorological parameters for the year-analogue (standard), further calculation of the proximity measure between the year-analogue and the specific year, as well as simulation of the degree of reduction or increase of yield value. The limitation of the method of determining the analogue year is the establishment of clear boundaries of agrometeorological parameters related to the heat and moisture supply of the growing period of the culture [3-4]. Due to inaccuracy, incomplete initial information, as well as variability of agroclimatic and agromeorological conditions of cultivation, it is necessary to involve modern methods of mining data based on mathematical apparatus of fuzzy logic and fuzzy sets, methods of teaching artificial neural networks and genetic algorithms, methods of machine learning. Among the advantages of using fuzzy set methods to solve the problem of prediction of yield in work are the following: good performance for poorly formalized tasks; Relative resistance of models to changes in external parameters; Efficient processing of incomplete information by "interference"; Possibility of describing nonlinear and hidden patterns between analysed data.
The aim of the work is to construct a fuzzy product knowledge base to predict wheat yield.

2. PROBLEM DEFINITION OF RESEARCHES

In our work, we will use the following symbols to build a mathematical model with fuzzy variables: $X = (x_1, x_2, x_3, \dots, x_n)$ – initial parameters of the external environment, which determines the value of wheat yield (forecast situation) and contains some solutions; $Y = (y_1, y_2, y_3, \dots, y_m)$ – output parameters of forecast situation; $K = (k_1, k_2, k_3, \dots, k_l)$ – parameters of estimates of decisions; $V = (v_1, v_2, v_3, \dots, v_j)$ – Uncertainty parameters in input and output parameters and their estimates.

The input variables given below correspond to the indistinct variables:
x_1 - precipitation of growing period from May to August, mm;
x_2 - precipitation May-June, mm;
x_3 - sum of active temperatures during the growing period, degrees Celsius;
x_4 - sum of active air temperatures for the period May-June, degrees Celsius;
x_5 - reserves of productive moisture in soil in layer 0-100 cm, mm;
x_6 - mobile nitrogen reserves in soil, mg/kg;
x_7 - hydrothermal coefficient G.T. Selyaninov;
x_8 is the humidification coefficient of N. N. Ivanov.

The prediction model is generally described as a tuple:

$$Mpred = < X, Y, V, K >,$$

which contains mathematical models of prediction problem situation and model of prediction values estimation:

Forecasting Problem Model:

$$M_Y < X, Y, P_{Y,X} >$$

Forecast Estimate Model:

$$M_K = < M_Y, K, P_{K,Y} >,$$

Where $P_{Y,X}$ – Uncertainty parameters of input and output values.

Production models are popular means of representing knowledge in modern information systems. Products are close to logical models, which allows them to be effectively used for logical output in monitoring, management and forecasting systems. Product models use If-To rules and clearly represent human knowledge and experience, classic logical calculations, and enable changes in product elements.

3. PRODUCT RULE MODEL ANALYSIS

Product-type models in prediction tasks can be of three types. The mathematical model of a simple product rule is written as [5-7]:

IF $x_1 = A_1$ И $x_2 = A_2$ AND … $x_n = A_n$ THEN $y = B$ [CF]. (1)

In models of this kind, input variables can take only clear values. At the same time, the absence of at least one of the values at the input makes it impossible to obtain the output result y, the value of which can determine the belonging of the object to a certain class. Different models of fuzzy production are used to remove these constraints, an example of which is the following model

IF $x_1 = \tilde{A}_1$ AND $x_2 = \tilde{A}_2$ AND … $x_n = \tilde{A}_n$ THEN $y = B$ [CF]. (2)

The inputs of this model can take both clear and fuzzy values. At the same time, it is also not possible to obtain an output result in the absence of at least one of the input values.
There are tasks in which decisions need to be taken into account The importance of the parameters included in the rules. In this task, the "diagnosis" is a specific technology, recomblown to application. Modified fuzzy is used to solve it the productional model governed [7-9]:

IF $x_1 = \tilde{A}_1(w_1)$ AND $x_2 = \tilde{A}_2(w_2)$ AND … $x_n = \tilde{A}_n(w_n)$ THEN $y = B$ [CF]. (3)

In addition to using weights for input variables that give a large Flexibility of this model, it has the same advantages as model (2). Except That, algorithm of logical output on model of rules (3) allows absence at input Values of one or more variables. At that it is possible to obtain output Result, but with less reliability. However, its suitability has been limited to a class of tasks in which a known distribution of input quantity values requires the selection of a clear solution from a variety of acceptable alternatives in a single cycle of operation of the inference machine. Results of researches. The development of a base of fuzzy product rules included the steps of:

- Determination of multiple environmental parameters affecting yield value $A = \{a_1, a_2, a_3, \dots, a_n\}$;
- Definition of term set of input and output variable of prediction system. For each variable according to was given a term set including three terms: low, medium, high factor value. For designation a term set we use designations of a look: very low value, average value, high value, high value.
- Design of possible combinations of input parameters characterising parameters of external medium and value of output parameter determining level of predicted yield of wheat. Initially, input linguistic variables were defined that affect the amount of wheat yield. Factors in work mean parameters of external environment of heat and moisture supply of wheat growing period, hydrothermal coefficient and humidification coefficient, reserves of productive moisture and mobile nitrogen in soil. For assessment of input and output variables look quantifiers are used: very low, low, average, high (tab. 1).

Table following on the next page

Variable name and units	Term set
precipitation of growing period from May to August	Very low, small, medium, large number
precipitation May-June	Very low, small, medium, large number
sum of active temperatures during the growing period	very low, low, average, high
sum of active air temperatures for the period May-June	very low, low, average, high
reserves of productive moisture in soil in layer 0-100 cm	very low, low, average, high
mobile nitrogen reserves in soil	very low, low, average, high
hydrothermal coefficient G.T. Selyaninov	very low, low, average, high
humidification coefficient of N. N. Ivanov	very low, low, average, high

Table 1: Input linguistic variables

The output linguistic variable - productivity of cultures is described by means of three terms: very low, low, average, high. The next step in building a fuzzy mathematical model involves generating a fuzzy rule base having a Multi Inputs Single Output [10-11]. According to this structure, multiple inputs and one output for fuzzy statements are used. Fuzzy rules establishing the relationship between input and output parameters are given by:

IF [($x_1 = a_1^{j1}$) and ($x_2 = a_2^{j1}$) and …and ($x_n = a_n^{j1}$)] (with a weight w_{j1})

and [($x_1 = a_1^{j2}$) and ($x_2 = a_2^{j2}$) and …and ($x_n = a_n^{j2}$)] (with a weight w_{j2})

and [($x_1 = a_1^{j3}$) and ($x_2 = a_2^{j3}$) and … and ($x_n = a_n^{jp_j}$)] (with a weight w_{jp_j})

and [($x_1 = a_1^{jk_j}$) and ($x_2 = a_2^{jk_j}$) and …and ($x_n = a_1^{jk_j}$)] (with a weight w_{jk_j})

Then $y_j = b_{j,0} + b_{j,1}x_1 + b_{j,2}x_2 + \cdots +$ for all $j = \overline{1 \dots m}$,

where $j = \overline{1 \dots m}$ rule number;

$a_i^{jp_j}$ – linguistic term, to which the variable in the line -juncture with number is evaluated
$p_j = \overline{1 \dots k_j}$ for j rulea;
k_j – number of conjunctions responding to conclusions y_j assumption of the use of linguistic term d_j;
w_{jp_j} – weight of statement determined by expert in the range[0,1];
y_j – expected value of productivity.

Given that the number of input variables is six, each described by four gradations of factor, the number of all combinations was $N = n^3 = 8^4 = 4096$ (Where n is the number of gradations of environmental factors affecting yield). Creating this knowledge base requires a lot of work and time. Therefore, in order to reduce the time and further increase the operation of the intelligent system of fuzzy logical output into the original fuzzy knowledge base, it is proposed to introduce weighting coefficients to each linguistic variable. Product rule models in fuzzy output systems are often represented as tables. This allows a formalized approach to the procedures of checking the correctness of the used rules and obtaining results, as well as the possibility of prompt updating of knowledge about the subject area, correction of fuzzy logical

rules and modification of the logical output taking into account the changing conditions of the forecast model. In a fuzzy knowledge base, product rules are presented in the form of an expert knowledge matrix (Table 2).

Rule number j	Line conjunction number p	x_1	…	x_i	…	x_n	w_{jp}	y_j
1	1	a_1^{11}	…	a_i^{11}		a_n^{11}	w_{11}	d_1
	⋮	⋮				⋮	⋮	
	p_1	$a_1^{1p_1}$	…	$a_i^{1p_1}$	…	$a_n^{1p_1}$	w_{1p_1}	
	k_1	$a_1^{1k_1}$	…	$a_i^{1k_1}$	…	$a_n^{1k_1}$	w_{1k_1}	
…	…	…	…	…	…	…	…	…
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
	1	a_1^{11}	…	a_i^{11}		a_n^{11}	w_{11}	
	⋮	⋮				⋮	⋮	
	p_1	$a_1^{1p_1}$	…	$a_i^{1p_1}$	…	$a_n^{1p_1}$	w_{1p_1}	
	k_1	$a_1^{1k_1}$	…	$a_i^{1k_1}$	…	$a_n^{1k_1}$	w_{1k_1}	

Table 2: Structure of the expert knowledge matrix

In the phasification step, continuous Gaussian belonging functions, S- and Z-shaped functions were used. The software implementation is done using the Matlab [12] software complex, as well as using science engineering libraries and the Python programming language.

4. CONCLUSION

The developed fuzzy production model will allow to further predict the yield of one of the leading crops (wheat) with blurred boundaries of input and output variables.

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DIGITALIZATION OF LAW BASED ON THE CHOICE OF A MODEL OF CORRUPTION SITUATIONS

Galina Kurcheeva
Novosibirsk State Technical University
20, Karl Marx ave., Novosibirsk, 630073, Russia
kurcheeva@yandex.ru

Georgy Klochkov
Novosibirsk State University of Economics and Management
52/1, Kamenskaya st., Novosibirsk, 630099, Russia
g.a.klochkov@edu.nsuem.ru

ABSTRACT

This article reveals the concept of corruption, considers conditions that do not allow this phenomenon to disappear. The authors proposed methods allowing reducing the level of corruption, including a mechanism for assessing the necessary and sufficient level of quality of life of certain categories of civil servants who occupy the top positions in the ranking of statistical agencies in terms of the number and volume of bribes received. The calculation technology includes two blocks, of which the first block allows you to get information about each category of civil servants, namely, whether the required level of quality of life and income level, calculated taking into account the composition of the family, are consistent or not. Moreover, already at the first stage, according to the results of assessments, we obtain the so-called "risk" group of categories of public servants. At the second stage, we assess the identified group from the position of personal and professional qualities, moral convictions, and the existing system of values. The main purpose of the presented study is to improve the methodology for identifying corruptogenic factors, the use of artificial intelligence to analyze and evaluate the possibilities of hiring, promotion and checking for professional compliance with the work status.

Keywords: *corruption, corruption reduction, "digital" law, risk groups*

1. INTRODUCTION

Numerous studies of Russian and foreign scientists are devoted to the problem of reducing corruption. The causes and conditions of corruption as a phenomenon, types of corruption are considered. On substantiate the possibility of extirpating this phenomenon is and propose ways to reduce corruption. To this end, mathematical models are developed that allow obtaining various assessments of corruption activity depending on the changing factors of the external and internal environment, the existing system of values of society and individual personality characteristics. It is worth considering that, despite the influence on the person's behavior of his mentality, family traditions, cultural values, corruption takes place, primarily in those areas of activity where economic conditions do not provide the necessary standard of living. In connection with the versatility of the areas of corruption research, we will consider this issue only from the perspective of economic conditions of life that contribute to corruption for public sector employees who are not involved in entrepreneurial activity. This segment of corruption is one of the most identified, manifested in the form of bribes in cash and is the most stable, according to the authors. Moreover, society is quite liberal about this phenomenon, since there is a clear imbalance in employee incomes, minimum subsistence level, the necessary personal disposable income and aggregate household income.

2. RELATED WORK AND METHODS

The aim of the study is to develop a methodology for assessing the impact of economic factors on the level of corruption activity. The implementation of this aim leads to the formulation of the following tasks:

- to study the existing methods for assessing the impact of economic conditions on the level of corruption;
- to develop a way to assess the required level of household income;
- to ensure the collection of online information on household income and expenses by type of activity of its members (those having a high level of corruption according to statistics);
- to develop a methodology for assessing economic factors affecting the reduction of corruption.

2.1. Related work

According to statistic data, violations of anti-corruption laws are one of the larger groups of offenses. The statistics of the RF Prosecutor General's Office for 2018 [30], detected 27,143 corruption-related crimes in Russia, which is 1.9% more than for the same period in 2017. The Prosecutor General's Office explained such an increase by detectability, tightening legislation and anti-corruption propaganda. Statistics also showed that in 2018, employees of internal affairs bodies fell most often under suspicion of corruption crimes: 790 employees were answerable for such offences, 502 cases were among local government officials, 495 persons of military personnel and 483 officials of state institutions and enterprises [1]. The All-Russian Center for the Study of Public Opinion (VTsIOM) carried out a study on the level of corruption in society. The most corrupt in the ranking of areas and institutions, according to respondents, were medicine (23%), the traffic police (GIBDD) and the police taking the second place (16% each), as well as housing and communal services (16%), followed by the judicial system and the prosecutor's office (14%). Nevertheless, in general, Russians have noted a decrease in the level of corruption affection in these areas for the last two years [2]. The volume and results of corruption require that relevant state institutions and organizations shall conduct a continuous and profound analysis of its causes in order to neutralize it and develop measures to overcome this phenomenon. The problem of corruption is discussed not only by Russian, but also by foreign researchers [3, 4, 5, 6, 7]. Currently, there are various definitions of the term "corruption" (Table 1).

Table following on the next page

Author	Definition
S.I. Ozhegov	Subornation by bribes, venality of public officers and political figures [8].
V.V. Luneev	Socio-legal or criminological phenomenon, covering a set of socially dangerous acts, both criminalized and (for various reasons) not criminalized in our country, but recognized as criminal in world practice [9].
P.A. Cheboksarov	The set of negative phenomena occurring in society and the state, primarily expressing in the neglect by individual officials of moral standards and in their commitment of acts of profit-motivated or personal interest directed against state power, the interests of public service and service in local governments [10].
A.V .Kuzmin	Bribery in all branches of authorities and administration (state, municipal, private), as well as official malfeasance committed out of mercenary motives [11].
Ya.I. Kuzminov	The phenomenon when officials deliberately neglect their duties or act contrary to these duties for the sake of a certain material reward [12].
E.A. Rusetskiy	A social phenomenon characterized by the subornation of state and other employees and, on this basis, the mercenary use by them in the personal or narrow-group, corporate interests of official powers, their authority and capabilities [13].
V. Tanzi	Deliberate non-compliance with official authority aimed at gaining benefit from this behavior for oneself or others [14].
Federal Law "On Counteracting Corruption"	Abuse of official position, giving a bribe, receiving a bribe, abuse of authority, commercial subornation or other illegal use by an individual of his official position contrary to the legitimate interests of society and the state in order to obtain benefits in the form of money, valuables, other property or pecuniary services, other property rights for yourself or for third parties, or the illegal provision of such benefits to a specified person by other individuals; and also the commitment of these acts on behalf of or in the interests of a legal entity [15].
UN Background Paper on International Anti-Corruption	Abuse of state power for personal gain [16].

Table 1: Definition of the term "corruption"

The above definitions reflect the opinion of both foreign and domestic researchers. Some researchers believe that corruption directly depends on the state, others, on the contrary, consider that corruption comes from society. It is also worth noticing that in the above definitions there is a common feature: corruption crime is always committed in order to benefit for oneself or for others. After analyzing the definitions of various authors, we can formulate a definition that reflects the content of the proposed study, namely: corruption refers to abuse of official position in order to obtain personal gain.

2.2. The economic component of corrupt behavior

Consider the economic component of human life, determine how in the future it can affect his behavior, and lead to the commission of a corruption crime. The economic factor in the quality of life of the population is the aggregate income of the family or household. Let us review the components of this income, which we shall measure by income and expenses. One of the most "simple" and widely known is the way for estimating the necessary income for an employee proposed by Henry Ford. He proceeded from the marital status of the employee, who, in his opinion, should provide primary needs (physiological) for members of his family (wife and three children). Then, in future income, it was necessary to include payment for training, medical services, leisure, sports and entertainment for all family members, and to add a separate bonus for paying a loan for a car, transportation and savings 17]. Following the above example, we calculate what should be the income of an employee in our time in Russia to determine the necessary standard of living. The standard of living of a person includes the following characteristics:

- physiological needs: food, consumption of clothing, footwear and other items that make up the physical elements of the standard of living;
- nonmaterial needs;
- social needs met in the process of social activity.

We will make an express assessment of the level of income necessary to meet the physiological needs of a family of four, taking into account the cost of living per capita. For example, the average salary of a traffic police officer per month is 35 thousand rubles; the cost of living per capita is 11 thousand rubles. Suppose that one person works in a family, and only a man brings income. Then, given the cost of living per person, a family needs 44 thousand rubles a month, without any other expenses. Therefore, in such conditions, the employee is not enough 10 - 20 thousand rubles per month. The commission of a corruption crime for this employee acts as a necessary measure, since the level of income is quite low and does not provide the necessary level of needs of each family member. The given example proves the need to develop anti-corruption methods for specific professional areas. To implement the methodology, it is necessary to study the means and methods of measuring the level of corruption with the aim of further applying them in the study.

2.3. Methods - Ways to measure corruption level

Currently, there are several methods for measuring corruption, one of which is the method of expert assessments. This method consists of conducting an analysis of the state of corruption and its various qualities with the help of an expert questionnaire setting and aggregating quantitative estimates, or making an expert survey and subsequent discussion and statistical processing of the results thus obtained. To carry out such work, researchers usually attract as experts heads of employment centers, heads of personnel recruitment agencies and officials of human resources departments. The method of observation [18, 19] to measure corruption rests upon the collection of empirical data related to the purposeful, systematic and direct perception of the studied social object. The observation method allows one to fix directly without any intermediaries the state of the object (corruption situation), determine its distinctive properties and features, obtain the most reliable first-hand information about the facts of corruption, its magnitude, sources and causes. I.I. Eliseeva and A.N. Shchirina [20] used this method in their works. The conducted socio-psychological studies of the motives of corrupt behavior put forward two main reasons: the desire for material wealth and the attitude to corruption as to a dangerous game. It is the opinion of Yu. M. Antonyan that “Game motives in corrupt behavior interlaced with lucrative ones beginning to determine powerfully each other. The presence of precisely these two fundamentals of motivation, their mutual reinforcement, explains to a large extent both the prevalence of corruption and the fact that the corresponding behavior is realized over many years becoming a way of life” [21]. The method of sociological survey is in use due to its economic efficiency and using verbal communication. Its distinguished features are immediacy of response, simplicity, potentiality of good organization and standardization. It holds in the form of a questionnaire and sociological interviewing. Interviews can be direct and indirect (by phone), standardized, conducted according to a pre-developed plan, and informal by way of a free conversation. Inquiries intended to obtain the most complete information about objective or subjective facts from the words of professionals who have been dealing with this issue for a long time. Disadvantages: the impact of the quality of respondents; great dependence on the professionalism of researchers and the ability to compose a high-quality sample for questioning; high labor-intensiveness [22]. In our opinion, the method proposed by American researchers M. Sesnovitz and G. Becker is most adequate [23, 24] in relation to the assessment of the effectiveness of anti-corruption measures. It involves the transfer of the results of opinion polls and statistics on the extent of corruption and existing corruption practices to the model of corrupt behavior developed by the authors and allows us to evaluate the effectiveness of the work of law enforcement agencies in the fight against bribes. M. Sesnovitz and G. Becker proposed considering corrupt officials as ordinary people who make their choice in favor of committing or not committing a corrupt act because of comparing the expected benefits and costs.

They describe an expected profit from a corruption transaction by the expression:

$$U = D - p * f,$$

where
U is the expected profit from a corruption transaction
D is official's salary
p is the probability of punishment of the offender
f is the monetary equivalent of punishment

This formula is applicable to determine the expected profit from any corruption transaction. However, one should pay attention to the fact that it is not always possible to determine easily the costs of a corrupt official. It will be easier to calculate the expected profit if authorities use a fine as the punishment. In this case, the value of *f* is simply equal to the size of the penalty. However, if the law envisages a penalty of imprisonment for this type of corruption transaction, the value of f is largely subjective and most accurate value of it only the corrupt person can determine. One can obtain an approximate assessment of the monetary equivalent of the punishment in the form of imprisonment for such an official based on the alternative cost method: the amount of lost potential income from legal activity and the damage from imprisonment according to the own estimates of the corrupt official. Obviously, the monetary equivalent thus obtained of the same prison term can vary greatly for different people. This means that the same crime can have a different "price" and bring different profits. Thus, one can try to establish how profitable a particular corruption market is, what factors have the greatest influence on this profitability, what should be the likelihood of their punishment to ensure social justice, and what opportunities exist to manage this situation.

3. RESULTS

For further research, it is necessary to determine the group of professions in the public sector in which the probability of committing a corruption crime is high. We calculate the probability of committing corruption crimes by certain groups of professions (Table 2, Table 3).

3.1. Analysis of statistical data on the average wage of workers in the social sphere and science in organizations of state and municipal ownership for 2013-2019 in the Novosibirsk region

Table 2 shows statistical data on the average wage of workers in the social sphere and science in organizations of state and municipal ownership for 2013-2019 in the Novosibirsk region.

Table following on the next page

Year / Name of profession	2013	2014	2015	2016	2017	2018	2019	Mean value
Teachers of preschool educational organizations	19 598	23 940	24 602	25 739	26 408	29 175	31 976	25 920
Teachers of educational organizations of general education	26 223	28 262	28 561	28 964	29 561	32 175	34 692	29 777
Pedagogical workers of organizations of additional education of children	21 419	24 606	26 453	27 825	31 220	34 043	35 925	28 784
Teachers and masters of industrial training	28 965	30 354	30 841	31 113	32 482	34 771	36 159	32 098
Doctors and employees of medical organizations with higher medical education	38 656	42 012	44 654	48 874	53 449	69 073	74 465	53 026
Nursing staff	22 225	24 114	25 478	27 031	28 724	33 921	36 700	28 313
Junior medical staff	12 920	14 690	15 784	18 054	20 483	32 135	34 748	21 259

Table 2: The average salary of public sector employees for 2013-2019 in the Novosibirsk region [25]

Table 3 presents the cost of living per capita in the Novosibirsk region for 2013-2019.

Year	2013	2014	2015	2016	2017	2018	2019
Quarter I	7 106	8 316	10 626	10 482	10 583	10 749	11 211
Quarter II	7 360	8 804	10 682	10 614	11 159	10 942	11 738
Quarter III	7 944	8 636	10 273	10 295	10 913	10 843	11 475
Quarter IV	7 764	8 945	10 117	10 225	10 316	10 552	11 018
Mean value	7 544	8 675	10 425	10 404	10 743	10 772	11 361

Table 3: Cost of living per capita (rubles) [25]

The average salary of a nurse is 20 thousand rubles per month. The cost of living per capita is 11 thousand rubles there are still 9 thousand rubles left. Housing and communal services will amount to 3 thousand rubles, communication and Internet services 1 thousand rubles, it is also necessary to pay transport costs, if you only consider travel to and from work, this is 1 thousand rubles. As a result, 4 thousand rubles per month remain. Objectively, this level of income is not enough for household consumption. In addition, it should be taken into account whether a person has a family and children, then expenses increase two to three times. In such a situation, a person may have to commit a corruption crime. Using the formula above, we calculate the expected profit from a corruption transaction:

$$U = D - p * f$$

The Investigative Committee opened in 2019 about 65 thousand criminal cases, of which only 11 thousand were completed, therefore, the probability of punishing the offender is 16%.

The fine is the monetary equivalent of wages. The expected income from the crime is 50 thousand rubles. Let us calculate the expected profit from a corrupt transaction:

$$U = 50 - 0.16 * 20 = 46.8$$

The condition is either not fulfilled.

The condition $pf > D$ is not fulfilled, which means that criminal activity is profitable.

3.2. Development of scales for matching employee's income and the level of household income required

In the context of digitalization, the technology for assessing an employee for the possibility of corruption will be as follows:

1) A human resources expert "launches" the data processing program about a candidate for a position or an acting employee (Figure 1). These are information of marital status, sources of income, and typical expenses for each family member, etc.
2) One of the most known resources for job search in Russia "HeadHunter" provides users with wide capabilities and allows creating an information base for any company or professional activity to track demand and supply on the labor market. The site is constantly updating and allows you to get information on the region, vacancy or industry of interest [26].
3) Data processing consists of calculating the likelihood of a corruption crime taking into consideration the composition of the family, possible wages, the cost of living ratio and other factors.
4) Automatic transition in the program to the scale "Assessing the probability of committing a corruption crime": this scale has marks of low, medium and high probability of committing a crime. The search for coincidences according to the calculation results allows making recommendations on the potential of a candidate or an acting employee for corruption activities and the choice of actions to reduce the level of possible corruption.

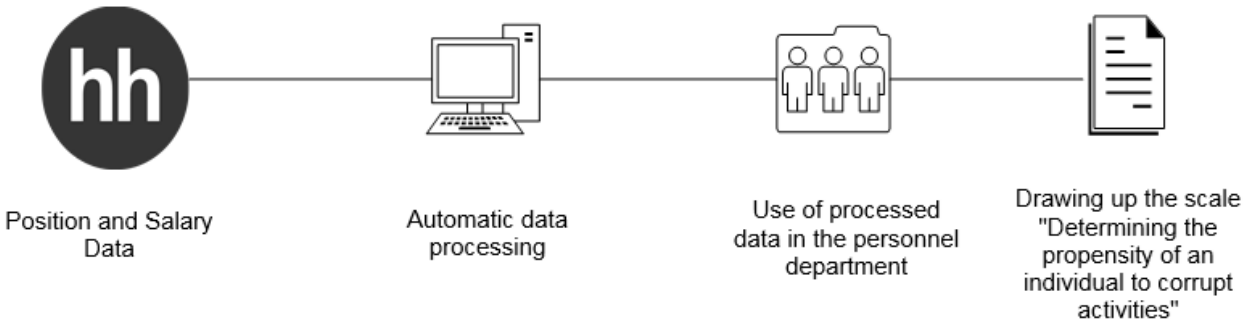

Figure 1: The procedure for processing data from an online source

Automatic data processing based on the above algorithm allows you to study quickly and efficiently the supply and demand market, taking into account the requirements to reduce the risk of corruption, taking into account the developed scale and compare with the demand for the workplace made by the applicant or employee (Figure 2). Ideally, such models should be a function that maps the design decision (interface-candidate) to the predicted value of one or more indicators of the state of income and expenses, of course, taking into account the characteristics of target users (level of corruption) and tasks performed with the interface (updating the scale).

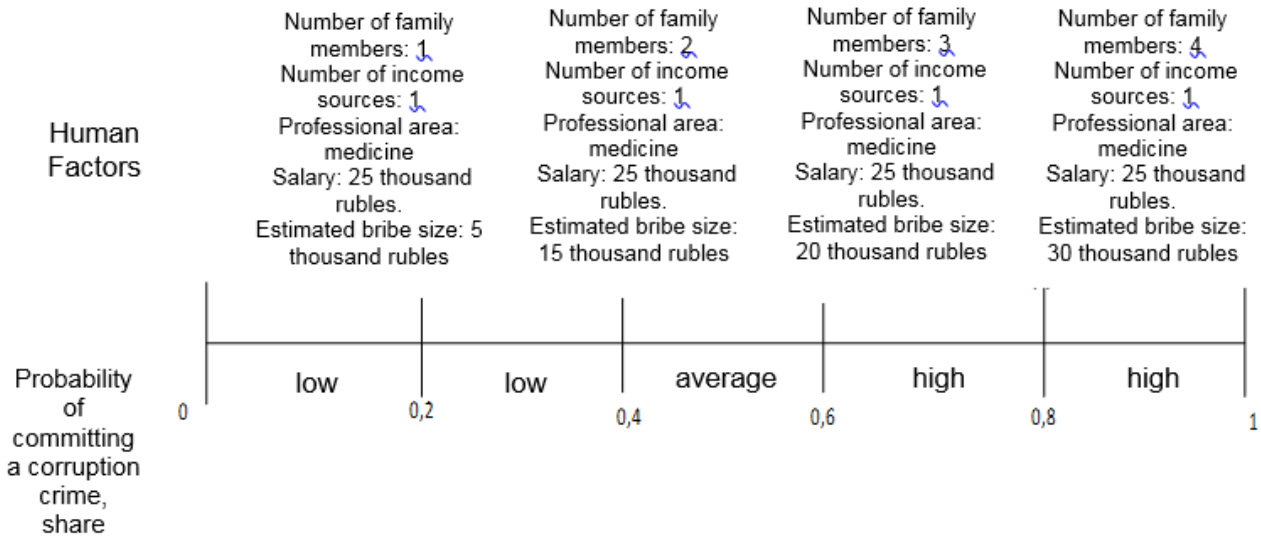

Figure 2: Scale "Estimates of the probability of committing a corruption crime"

4. CONCLUSIONS

The aim of the study is to create an intelligent system to support decision-making based on employee behavior patterns in the legal field. The final software implementation of the intelligent system allows you to pre-determine the economic efficiency of using the developed scale when solving such typical tasks as substantiating the cost of living, social benefits and the amount of income for public sector employees. Although we studied only the economic component of corruption and identified only public sector employees, we believe that the implementation of the above areas and measures should help prevent corruption and reduce its level. It is obvious that in the above list there are practically no measures aimed at recommendations for improving Russian legislation, which should regulate incomes and expenses, and not contribute to corruption and create favorable conditions for it. The digitalization of law will help solve these problems.

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APPLICABILITY OF "GREEN" FINANCING INSTRUMENTS IN KAZAKHSTAN WHILE FORMING "GREEN" CLUSTERS AT THE REGIONAL LEVEL

Marina Kozlova
D. Serikbayev East Kazakhstan state technical university, The Republic of Kazakhstan
Mara_Koz@mail.ru

Yevgeniy Varavin
D. Serikbayev East Kazakhstan state technical university, The Republic of Kazakhstan
vev1974@mail.ru

ABSTRACT
The paper discusses the problem of attracting financial resources for the development of a "green" economy at the meso level. The paper provides the characteristic of the "green" economy and the main features that it should have. The problems of transition of Kazakhstan's regions to a new "green" course of economic development are revealed. The cluster mechanism for implementing the principles of the "green" economy as the most effective in relation to Kazakhstan's regions is justified. Tools of state support for the formation of "green" clusters at the regional level are proposed. They include financial, institutional, informational, social measures, etc. Special attention is paid to "green" financing tools. In particular, the definition of "green" finance is given, and the features of such a financial instrument as "green" bonds are described. The main trends in the development of the global "green" bond market are analyzed. "Green" bond principles that must be observed when issuing certified green bonds have been studied. In conclusion, the prerequisites for the establishment of a system of "green" financing in the Republic of Kazakhstan are determined. The analysis of the current legislation in the field of supporting the "green" economy in Kazakhstan is carried out, the development directions of the green financial system through the platform of the "Astana" International Financial Center are determined. It is concluded that it is necessary to channel funds from the issue of "green" bonds to the implementation of green projects, solving climate problems and introducing environmentally friendly innovative technologies. It is planned that the issuers of "green" bonds in Kazakhstan will be the local executive authorities - akimats, as well as large industrial companies that pollute the environment.
Keywords: *Cluster, "Green" economy, "Green" finance, "Green" bonds*

1. INTRODUCTION

The international community recognizes that, in the view of growing environmental, climate and social challenges, the requirements for the stability of the global and national economic systems can be met in the long term only if these requirements are aligned with the sustainable development goals. In the opposite case, this will seriously complicate the achievement of the goals of "green" development, which depends on economic growth based on the rational use of natural and human capital, determined by both environmental and social norms. According to OECD estimates, by the end of 2018, the total losses of the world economy due to climate change amounted to 1.3% of global GDP. According to experts' forecasts, the same indicator will range from 1.4 to 1.9% by 2025 [1]. The concept of a "green" economy is focused on the problems of structural transformation of the economy as a leading factor in the transition to sustainable development, poverty eradication, increased social justice. It involves a qualitative improvement in the economic, social and environmental parameters of economic systems based on "green" growth. In such an economy, it is planned to diversify the economy and ensure, on this basis, both quantitative and qualitative growth of the gross domestic product.

In many ways, the introduction of a “green” economy at the regional level can be carried out on the basis of a cluster approach. Kazakhstan needs an economic structural adjustment and transformation of the development model in order to balance the national economy. This transformation will require financial resources that can be mobilized through “green” finance. Thus, the purpose of the paper is to justify the directions of "green" modernization of the economy of Kazakhstan through the tools of regulation and control of clustering processes, in particular, the formation of a system of "green" financing.

2. “GREEN” ECONOMY AS A MODEL OF A NEW REGIONAL ECONOMY

A “green” economy should have the following important features [6]:

- The priority in development are high-tech manufacturing and infrastructure industries with minimal environmental impact;
- The share of the primary sector in the economy decreases;
- The efficiency of use of natural resources and their savings are increased, the volume of pollution per unit of the final result is reduced;
- The environmental conditions of the population and their provision are essential.

The nature of the investment policy of the Republic of Kazakhstan, leading to an imbalance between the nature-exploiting and processing sectors of the national economy, undoubtedly confirms the importance of a fundamental reform and modernization of production in order to achieve sustainable economic development. It is fundamental that the central objective of the state policy pursued in Kazakhstan is the need to change the economic trajectory by moving away from the raw material economy, modernizing and diversifying the sectorial structure of the economy, and building an innovative high-tech economy. This task is the main one in the concept of a “green” economy, which provides for the transformation of market and institutional mechanisms of the existing development model into effective tools for achieving sustainable development goals [17]. It is assumed that the new “green” course will be ensured by minimizing the use of non-renewable minerals for the production of electricity, which will be possible through investments in renewable energy sources, as well as mandatory energy saving in the economy. The contours of the described course are proposed in the documents of the United Nations, programs of "green" growth of the countries of the Organization for Economic Cooperation and Development [14]. In 2015-2016, the following green initiatives have reached a significant level of development:

- Within the UN framework, 17 new goals of sustainable development were formulated and annual costs for its financing were estimated, the Paris Agreement was adopted (on climate change, ratified by Kazakhstan on October 27, 2016);
- Within the framework of the G20, the practice of green finance and the concept of greening the financial system were brought to the global level, as well as the Working Group for the Study of Green Financing Processes (G20 Green Finance Study Group) was created;
- There was an increase in national initiatives.

For Kazakhstan, a “green” economy should become a model for a new regional economy. However, it is necessary to highlight a number of problems in the transition of regions to a new “green” course of economic development [13]:

1. The lack of legislative regulation in the field of "green" economy at the regional level;
2. Low efficiency of environmental impact assessment and the lack of assessment of the full economic damage from the negative impact on the environment;
3. A high level of consumption of natural resources and significant losses of natural resources during extraction, transportation and processing;

4. Low level of environmental education; insufficiency of research work on environmental protection;
5. Lack of expert and analytical data to make informed decisions in the field of long-term transition to green development;
6. The lack of effective economic, financial, administrative tools to stimulate the development of a "green" economy.

3. IMPLEMENTATION OF THE PRINCIPLES OF THE "GREEN" ECONOMY BASED ON THE FORMING "GREEN" CLUSTERS AT THE REGIONAL LEVEL

In many ways, the introduction of the principles of a “green” economy at the regional level can be carried out on the basis of a cluster approach. According to it, the implementation of the principles of a “green” economy is most effective. The main goal of the cluster is not to strengthen existing positions on the basis of increased use of territorial resources, but to modernize the regional space, create innovative vertical and horizontal networks in the field of resource use, resource saving and waste processing, environmental modernization of production [12]. The cluster form is primarily aimed at coordinating the activities of its participants through voluntary commitments to comply with standards in information, marketing, technology, personnel, environmental and other types of policies. Cluster members are united by a single technology used to produce products and services. For this reason, a cluster is an effective mechanism for introducing a single technology among all its participants, which may include green technologies. According to the Concept of the Formation of National Clusters of the Republic of Kazakhstan until 2020, the purpose of the cluster policy is to ensure sustainable economic growth and modernization of the economy based on cluster development. Cluster policy will be aimed at transferring the country's economy to a new technological platform, the formation of industries with a high level of productivity, added value and the degree of redistribution of products and services. The priority sectors of the economy of Kazakhstan associated with the territorial competitive advantages of individual regions can be tourist-recreational, agro-industrial and transport-logistics complexes. The competitiveness of potential regional cluster formations can be ensured only through the introduction of innovative technologies, environmental management systems, environmental marketing, environmental technologies that balance economic development and environmental protection at the regional level.

3.1. Measures of state support for social, economic and environmental components of regional development

In order to stimulate the modernization of the regional economy, it is necessary to form new and improve existing direct and indirect economic instruments to support the development of a “green” economy at the regional level [20]. The analysis allows us to identify a number of measures of state support for the social, economic and environmental aspects of regional development (Table 1).

Table following on the next page

Types of measure	Instruments
Financial measures	– development of investment incentives (soft loans, microfinance, tax exemption, investment preferences, etc.); – subsidies, provision of preferential tariffs and other types of direct support for goods; – mobilization of financial resources through public-private partnerships, the provision of long-term guarantees, credit guarantees; – public investment in the manufacturing sector, human capital, infrastructure and R&D
Institutional measures	– state regulation of the economy using norms, standards, a system of fines, monitoring compliance with the law; – mobilization of managerial and institutional capacity (strengthening accountability, transparency, control, anti-corruption measures); – reduction of administrative barriers; – integrated planning and resource management
Informational measures	– information accessibility, labeling of "green" products, educational initiatives; – development of environmental audit
Social measures	– shaping labor market policies (training and retraining of personnel, assistance in finding a job, financial support for the population, benefits and allowances); – ensuring minimum standards of social protection
Internalization externals	– introduction of taxes, fees, charges for environmental pollution; use of systems of restrictions on emissions and discharges of pollutants; – applying effective pricing

Table 1: Instruments of state support for the development of the green economy and regional clusters
(Source: Compiled by the authors)

3.2. "Green" bonds as a special type of financial instrument

Financial instruments are of particular note.Currently, there is no single approach to the definition of "green" finance. The term "green" financing began to appear in the 1980s - early 2000s. This time ideas for sustainable development and economic growth were developed (R. Solow, V.V. Leontiev, declarations and programs of the UN, World Bank and other international organizations). Among modern studies in the field of green finance and economics, green growth and innovation, the works of such foreign scientists as P. Krugman, M. Mazzukato and K. Perez, K. Berensman and N. Lindenberg can be singled out. An analysis of the scientific literature allows us to single out a narrow and broad interpretation of this definition. According to the first, they are understood as a combination of financial products and services, the development, production and use of which are aimed at reducing environmental and climate development risks. "Green" financing includes investments from public and private sources aimed at the development and implementation of projects and programs in the field of environmental management, the production of environmental goods and services, for the development of low-carbon technologies and the reduction of greenhouse gas emissions. A broad interpretation of "green" finance additionally covers financial mechanisms to stimulate the implementation of alternative energy projects aimed at reducing greenhouse gas emissions by network companies; as well as financial institutions specializing in the aforementioned "green" investments, which are designed to provide financing or hedging

such investments [8]. The above definitions of "green" finance use a qualitative, moreover, rather vague criterion - ensuring activities to reduce environmental and climate development risks. This criterion is quite subjective when classifying a particular type of economic activity as “green” [9]. It is important to generalize and systematize foreign experience in implementing the concept of “green” finance to determine the possibilities of its use in Kazakhstan. Many developed countries have begun to introduce “green” financing mechanisms. The majority of them are carried out through bank loans and public finance. The capitalization of the green finance market today makes up 14 trillion US dollars and, according to preliminary estimates, it should be at least 93 trillion US dollars by 2030 [3]. The most intensively growing segment is “green bonds”, although as of September 1, 2016 they accounted for less than 1% [18]. By “green” bonds, it is customary to understand such debt instruments, the proceeds of the placement of which are used exclusively to finance new or refinance existing “green” projects [15]. The issuance of certified green bonds implies compliance with special standards - Green bond principles ICMA, which determine the targeted use of securities and the passage of established issuing procedures. The green bond principles are voluntary standards that provide guidance to issuers on key issues of green bond issuance. The standards regulate the adherence to a transparent issuing process and recommend that issuers disclose the full information that investors, banks, investment funds, underwriters, placements agents and other market participants need to understand in order to understand the characteristics of each particular green bond issue. The principles of green bonds include four key elements, among which are the process of evaluating and selecting projects, using funds, managing funds, and reporting. In 2007, the first “green” Climate Awareness Bonds were issued in the amount of $ 600 million for a period of 5 years. The issuer was the European Investment Bank. They intended to finance projects of alternative energy sources and increase energy efficiency [10]. In 2008, the International Bank for Reconstruction and Development issued bonds in the amount of 2.85 billion SEK, directly labeled as “green”. For the first time in the selection of projects, environmental criteria were applied and experts from the University of Oslo carried out an independent assessment. The purpose of this type of “green” bonds was to finance the “green” projects of Sweden in the forestry, agricultural sector, and waste management. Before the World Bank introduced special procedures for environmental assessment of projects, a number of countries issued bonds designed to finance specific environmental projects, but there was no connection between bond loans and specific areas of spending. Only the introduction of such assessment procedures allowed creating the prerequisites for marking “green” bonds and tracking the targeted use of financial resources. In addition to international financial organizations, national and subnational governments, commercial banks and private corporations began to carry out the issuance of “green” bonds. And today we see the most intensive development of the “green” bond market in Brazil, India, South Africa and the PRC. The Chinese green” bond market is expected to become the largest in the world in a few years. So, just for the first few months of 2016 the Shanghai Development Bank carried out a record issuance of “green” bonds in the amount of 3 billion US dollars. As of January 27, 2019, the global “green” bond market grew to 528.9 billion US dollars, 167.3 billion dollars of which were placed in 2018 (more than 1.5 thousand issues) and already 6 billion dollars - in 2019. The average annual market growth since 2007 is about 230%, which fully reflects the growing global demand for “green” financing (Figure 1) [19]. According to the Climate Bond Initiative, the ranking of the use of "green" bonds by industry gave the following structure in 2019: projects in the field of renewable energy and energy efficiency took 38%, projects in the field of transport based on low-carbon energy had 16%, water resources financing had 14%, climate change adaptation had 6%, forestry and agriculture had 2%. In other words, «green» finance primarily finances infrastructure projects.

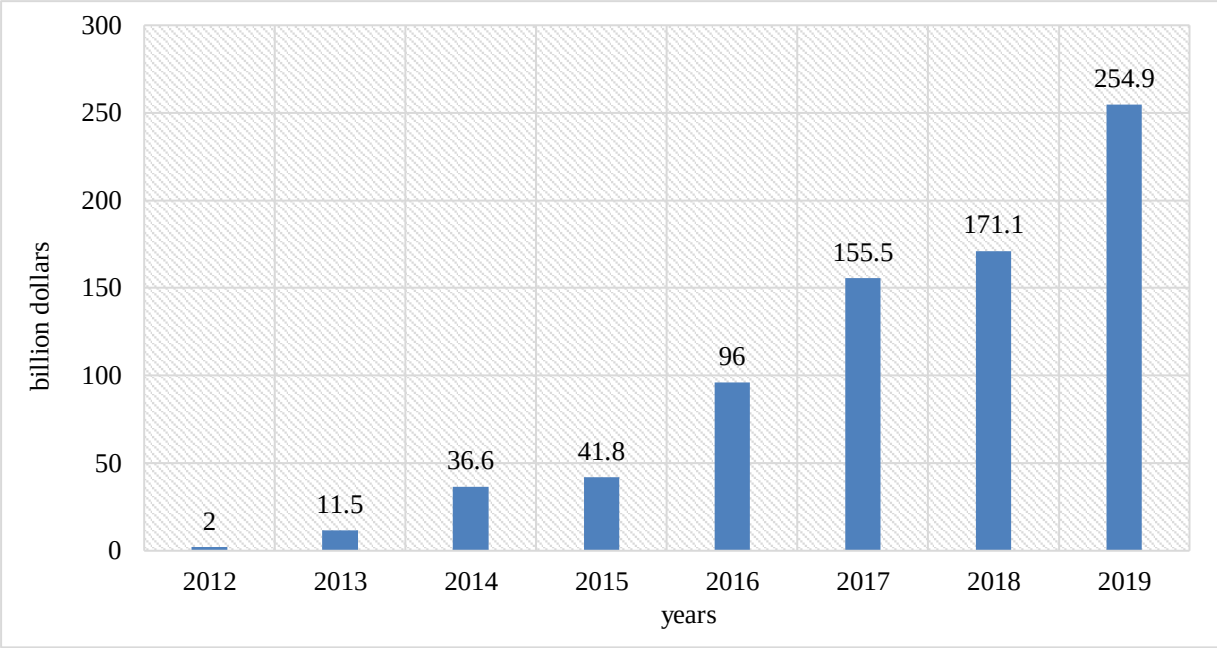

Figure 1: The dynamics of the "green" bond market
(Source: Compiled by the authors of 19)

4. MECHANISM OF CREATION AND FUNCTIONING OF THE "GREEN" FINANCING SYSTEM IN THE REPUBLIC OF KAZAKHSTAN

Kazakhstan is one of the countries for which this practice is especially relevant. An analysis of approaches to the development of tools and the development of "green" finance institutions which are used abroad will allow us to develop an effective mechanism for creating and operating a "green" finance system in the Republic of Kazakhstan. This will be also facilitated by measures to form the "green" economy that have already been taken in Kazakhstan. In 2010, the Decree of the President of the Republic of Kazakhstan approved the Strategic Plan for the Development of the Republic of Kazakhstan until 2020, where the principle of "green growth" is provided as the basis for the economic development of the republic [11]. In 2010, the "Zhasyl Damu" industry program was adopted, the most important task of which is to develop a "green economy". The program describes the content of the main directions of the "green economy". In 2010, Kazakhstan put forward the "Green Bridge" Astana initiative, the goal of which is formulated as the development of partnerships between countries in Europe, Asia and the Pacific region to develop plans for the transition from traditional economic models to "green growth", as well as transfer and implementation of "green" technology. On January 9, 2012, the law "On state support for industrial and innovative activities" was adopted, in which only environmentally safe activities were assigned to this type of activity [7]. Currently, this provision is enshrined in the Entrepreneurial Code of the Republic of Kazakhstan [2]. On May 30, 2013, the Concept on the transition of the Republic of Kazakhstan to the "green economy" was adopted [18], according to which, by 2050, it is planned to increase the country's GDP by 3%, the share of alternative and renewable electricity to 50%. In the field of energy efficiency, the goal is to reduce the energy intensity of GDP by 25% by 2020 compared to the base level of 2008 and to reduce emissions by 15% by 2030 compared to the level of 1990. In the framework of the program of transition of the Republic of Kazakhstan to the "green economy", the following centers were established: the "Green Academy" Scientific and Educational Center, which is the country's main scientific and educational center in the field of the "green economy", and Association of Legal Entities the "Coalition for a "Green" Economy and G-Global Development", which is a leading organization in the development of the "green economy".

They carry out significant informational, coordinating, consulting and educational activities. Kazakhstan plans to invest up to 3% of GDP or $ 3-4 billion dollars annually in the development of the "green" economy, which will require the use of appropriate "green" financial instruments, including "green" bonds. This circumstance determines the importance of developing a system of "green" financing in Kazakhstan. So, at the 29th meeting of the Council of Foreign Investors under the President of the Republic of Kazakhstan in 2016, N. Nazarbayev for the first time set the task to develop "green" finance and to elaborate a Concept for the development of a "green" financial system. On behalf of the Head of State, the International Financial Center "Astana" (IFCA) was defined as a regional hub in the field of "green" financing, where securities aimed at developing a "green" economy, supporting a sustainable economy will circulate, and which will provide services to developing "green" markets [16]. A conference "IFCA Regional Leadership Strategy in the Field of "Green Finance", was held on September 4, 2017 in Astana, within the framework of "ASTANA EXPO – 2017" International Specialized Exhibition, At this conference, the International Financial Center "Astana" presented the Concept for the Development of the "Green" Financial System of Kazakhstan, which is the basis for supporting the development of clean "green" finance in the country [4]. IFCA aims to promote the formation of a "green" finance system in Kazakhstan by providing the necessary conditions and giving access to infrastructure. The Center has developed a number of normative documents regulating the issues of "green" financing support. Among them are the Concept of a "green" financial system for Kazakhstan and the Strategy for leadership in the field of "green" finance until 2025, which reflects the main stages of the institutional development of "green" finance in IFCA. The International Financial Center "Astana" is establishing cooperation with public authorities to ensure the release of the first "green" bonds on its own exchange platform. It is planned that the funds raised by municipal "green" bonds will be used to finance the city needs, to provide clean water, to manage waste, to introduce energy conservation and other environmental goals. In addition, IFCA is one of the founders of the International Network of Financial Centers for Sustainable Development, which is a global platform for sharing experiences and taking joint actions to promote "green" and sustainable financing. Since February 2019, IFCA has been a member of the non-profit organization "Climate Bonds Initiative" (CBI), whose activities are aimed at attracting large-scale investments in the "green" economy. Among the main functions of CBI are advisory activities in order to inform and stimulate the "green" bond market, market data analysis, development of policy models and recommendations for governments, and maintenance of a system of standards and certification of "green" bonds [5]. As a CBI partner, IFCA will be provided with access to exclusive data on climate bonds and other environmentally friendly financing instruments, as well as contacts with issuers, investors and other partners in this field. It is planned that local executive bodies - akimats, as well as large industrial companies polluting the environment will act as issuers of "green" bonds in Kazakhstan. IFCA will assist issuers in finding large investors. City projects: clean transport, drainage of swamp lakes, smart lighting of the city, gasification of Nur-Sultan can be approximate areas for investment. An exemplary mechanism can be represented in the form of a circuit shown in Figure 2.

Figure following on the next page

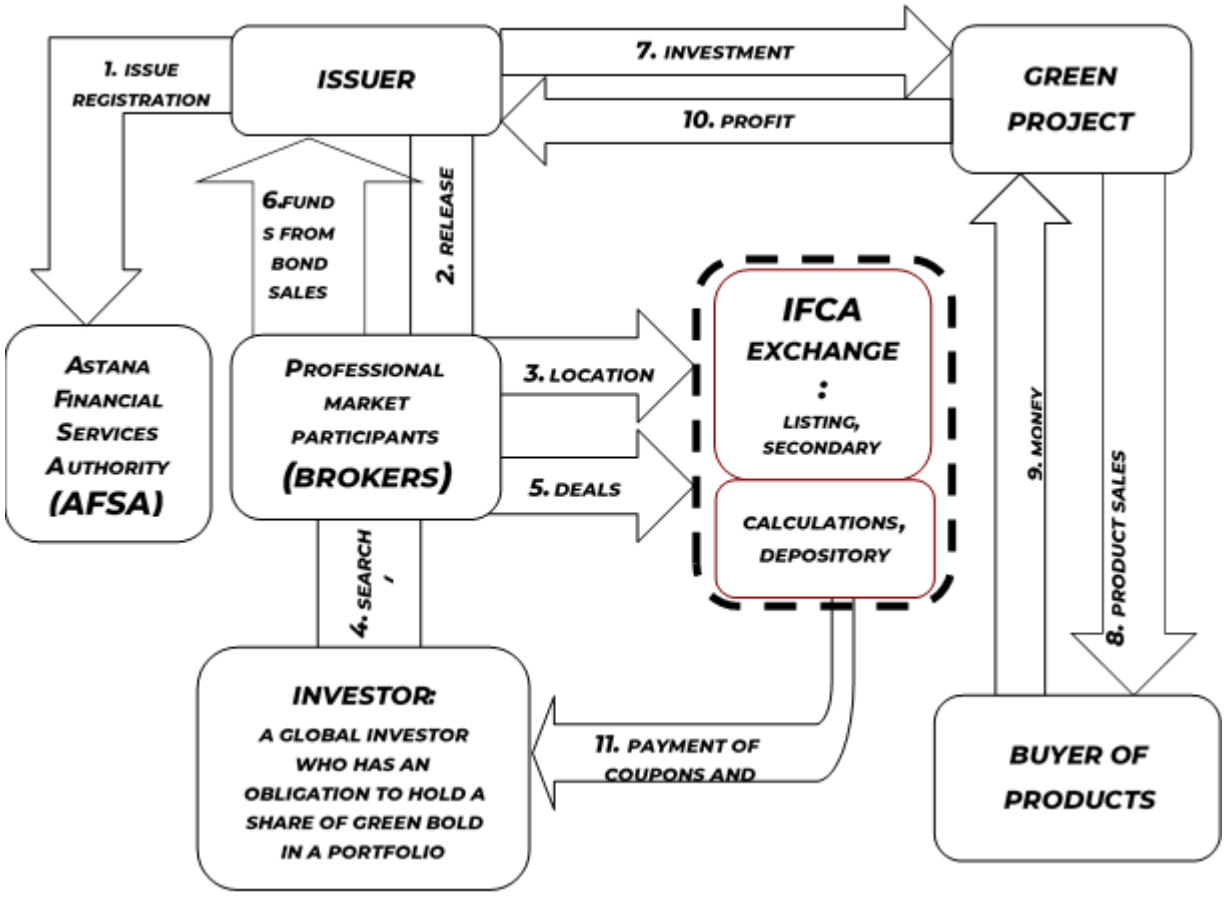

Figure 2: The Scheme of the "Green" Bonds issuing on IFCA platform (Source: Compiled by the authors)

Akimat issues bonds, which will be listed on IFCA exchange, then investors get the opportunity to purchase bonds. Akimat implements a "green" project with funds received from the sale of bonds and repays the loan during the payback period of the project.

5. CONCLUSION

Thus, for a successful transition to a "green" economy in Kazakhstan, for the formation of clusters, it is necessary to create conditions conducive to this, and to ensure adequate financing at the expense of "green" financial instruments. To stimulate the development of a "green" financing system in order to modernize the economy, it is necessary to improve state policy to support these processes, including the processes in the field of standardization, through the use of credit and tax benefits and incentives, the development of public-private partnership mechanisms, and the formation of "green" financial institutions, which seems to be especially significant from a practical point of view. State support for "green economy" projects will serve as a catalyst for the formation of "green" clusters in the regional economy of Kazakhstan, pointing capital and technology in this direction will create demand for special research and a system for training specialists for the "green" industries.

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LEGAL PROTECTION OF THE ENVIRONMENT OF THE ARCTIC REGION WHEN APPLYING GENOMIC TECHNOLOGIES

Natalia Pavlovna Voronina
Kutafin Moscow State Law University (MSAL)
Sadovya-Kudrunskaya Str.,9, Moscow, 125993, Russia
nvoroninamgua@yandex.ru

ABSTRACT

In modern conditions, the development of genomic technologies is Russia's strategic objective. The use of these technologies contributes to solving crucial tasks, including ensuring food security. The experience of foreign countries which are part of the Arctic zone shows the economic and social significance of the use of genomic technologies with regard to the issue of food security for the population living near the Arctic zone. This is particularly important in order to preserve the traditional way of life of indigenous minorities. Global environmental challenges, climate change in particular, have a negative impact on the habitat of the Arctic animals and actually results in the extinction of their habitat, increased activity of pests and parasites, and growing fish migration from the southern seas to the northern seas. At the same time, the Arctic region is extremely rich in natural resources. Under the conditions of global warming their abundance causes an increase in the mining of natural resources, anthropogenic load and the amount of waste. This, in its turn, requires an in-depth analysis and identification of both environmental and legal risks as well as their socio-economic consequences of anthropogenic activities, including the use of genomic technologies. Strategic planning documents concerning with the development of the Arctic region neither assess such risks nor provide measures aimed to protect the environment and, consequently, maintain the health of local peoples. In scientific terms, the study of this issue has not been paid proper attention, consideration and research. This article focuses on the legal regulation of the issues to ensure environmental safety of the Arctic region of Russia and the Arctic states in order to determine the environmenttal paradigm of the Arctic region of Russia, the socio-economic consequences of the use of genomic technologies. The paper also contains some of the author's proposals for improving the economic and legal mechanism for ensuring environmental safety of the Arctic region in the implementation of anthropogenic activities, including the use of genomic technologies.

Keywords: *Arctic region, environment, genomic technology*

1. INTRODUCTION

In modern economic conditions, the Arctic region is becoming approachable for economic development. Increasing of the anthropogenic pressure will lead to the deterioration of the environmental situation in the Arctic region. But there is already a number of environmental problems immanent for this macroregion and they are as follows: accumulated environmental damage, reduced biodiversity, mercury pollution and pollution with other heavy metals. The UN environment programme focuses on the following negative environmental changes in the Arctic ecosystem: climate change and melting glaciers, a decrease in the population of Northern animals and changes in their habitat as well as waste pollution. (Maksimova, 2017). In addition, the Arctic countries have both economic problems, food security in particular, and social problems like the deterioration of health of small indigenous peoples, being the result of the climate change. The practice and experience of foreign Arctic countries show that the use of genomic technologies can solve these problems. Such foreign practices may also be useful and can be taken into account in Russia. At the same time, the implementation of genomic technologies brings about a number of environmental and legal issues.

One of them is to estimate risks and consequences of these technological activities. Another one is to define a model of legal regulation of environmental safety, and a set of measures to implement it. Meanwhile, in modern literature, in scientific terms, the study of the legal regulation of environmental safety in the Arctic region with the use of genomic technologies has not been paid proper attention, consideration and research. In legal journalism, only a few segmental scientific papers can be found on the issue in question (Zhavoronkova & Agafonov, 2019; Gladun, 2015). Thus, no adequate legal regulation is available to ensure the environmental safety of the Arctic region and the economic activities there while using genomic technologies. That is why, the development of the respective legal regulation to ensure the environmental safety of the Arctic region when genomic technologies are applied has become relevant.

2. ECONOMIC AND SOCIAL PROBLEMS OF THE ARCTIC REGION

One of the main economic problems of the Arctic region is low level of self-sufficiency in agricultural products and it threatens food security in the region. According to O. I. Gerasimov and E. V. Rytov, " the analysis of food security in the Arctic reveals the following main problems that do not allow the region to be independent in terms of food security:

- extreme natural conditions for the development of agriculture;
- poor economic infrastructure and low production volumes in the agricultural sector;
- current level, as well as recommended standards for consumption of basic types of food;
- dependence on food imports from other regions of the Russian Federation (seasonal nature of these imports);
- features of population settlement (including indigenous)" (Gerasimov & Rytova, 2016).

The production, processing, marketing and sales of agricultural products is the result of agricultural activities. Agricultural activities include the use of land and other natural resources, inventory of biological factors of plants and animals, dependence on the natural and climatic conditions. Besides, agriculture is a seasonal activity and is characterized by the gap between costs and profits and a differentiated approach as to the territorial location of agricultural industries. It is also mobile by its nature. At present, unfortunately, agricultural sector in Russia is also characterized by inertia, unemployment, and poor infrastructure (Bogolyubov, 2007). All these factors exacerbate agricultural operation in the Arctic. Moreover, these territories are rich in natural resources with the core business related to raw materials. As a result, agriculture is treated as a secondary and auxiliary branch of economy in the region. The documents on strategic planning aimed at the development of the Arctic region emphasize that the development of agricultural sector and its operation is affected by "... extreme climatic conditions, focal industrial and economic development of territories and low population density, low stability of ecological systems, their dependence on even minor anthropogenic impacts" (On the Environmental Security Strategy of the Russian Federation for the period up to 2025 (No. 176). The State program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food Markets for 2013-2020 (On the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food Markets for 2013-2020 (No.717) stipulates that number of reindeers and deers in the areas of their habitat shall increase. Another document, i.e. the Strategy of the Arctic zone of the Russian Federation and National Security for the period up to 2020 envisages the development of the resource potential of fisheries, implementation of measures for technical re-equipment and commissioning of new capacities for deep processing of aquatic bioresources and the development of marine biotechnology as well as involvement of non-traditional objects in fishing. Currently, the strategic goal is to increase the use of genomic technologies, including those used in the process of agricultural activities.

For the Arctic, this issue is also linked to the negative impact of climate change, which causes increased risks for the economy, in general, including farming (Bogolyubov & Krasnova, 2018). This requires the development of new breeds of farm animals and aquaculture which are more resistant to adverse environmental conditions and will have better food and nutritive value. The main goal of applying genomic technologies in agriculture is to strengthen food security by increasing the efficiency of the agro-industrial complex and increasing the competitiveness of Russian agricultural products on world markets. This can be achieved through the development of genetic technologies used in crop production, animal husbandry and aquaculture, in the production of vaccines for farm animals, technologies to improve the relationship of microorganisms, animals and plants by effectively using the genetic resources of the microbiomes of agrocenoses (Voronina, 2019). The use of genomic technologies in agriculture may have some risks for the Arctic ecosystem and public health matters. In other words, "to ensure the competitiveness of products produced in the Arctic region using genomic technologies, on the one hand, it is necessary to expand scientific ecosystem research and development, on the other, to try to predict and minimize environmental risks" (Vedysheva, 2019). Consequently, it is necessary to determine and make a list of environmental and legal risks (threats) while implementing genomic technologies in agriculture. Specifically, " the main threats (risks) to environmental security in the Arctic zone while using genomic technologies will be environmental factors, and the source of these threats (risks) will be the state of the natural environment, changed as a result of human activity, as well as natural hazards. In this case, the main threats, risks for humans and their life will be the risk of degradation of the environment to the extent that it will be impossible for a human to exist as a biological species in the course of nature management; the risk of negative factors for life due to the effects of pollution and environmental degradation; the risk of reducing the resource potential of the environment; the risk of human diseases, changes in the gene pool of the territory, biodiversity (Agafonov, 2019). To avoid such potential risks, a temporary legislative ban on the use of genomic technologies in the Arctic may be proposed up to an experimental verification of the technologies used in terms of their biosafety and genetic safety (Zhavoronkova and Agafonov, 2019). Genomic technologies also contribute to solving social problems in the Arctic region. These social issues are related to the implementation of the right of indigenous peoples to traditional economic activities. This right is recognized as the “inalienable right of indigenous peoples” (Portnova, 2017) and is guaranteed by ILO Convention No. 169 of 1989 on Indigenous and Tribal Peoples in Independent Countries. The more aggravated the social problems were in the late 90's of the last century in the region, the more deteriorated the health of indigenous peoples became. Intensive industrial development of natural resources of the region has also had a negative impact on the peoples' health. "Violation of the traditional way of life ... led to the development of a number of diseases and pathologies among representatives of small nations ... Significantly higher the average Russian indicators are the indicators of infant (1.8 times) and child death rate among these peoples and their morbidity with infectious diseases and alcoholism" (On the Concept of Sustainable Development of the Indigenous Peoples of the North, Siberia and the Far East of the Russian Federation (No.132-r), the deficit of ultraviolet and vitamin deficiency. Compared with the Arctic zone of Scandinavia, in our country their life expectancy is 8–10 years lower, and for men - from 10 to 13 years. Teenage mortality is 2-7 times higher (Kulikovskaya, 2018). (Kulikovskaya, 2018). One can safely say, the strategic task of the Russian government today is “the development and modernization of traditional economic activity”, the economic development of which should not worsen the health of indigenous peoples, but should improve it. For this, it is necessary to take and implement a number of measures, including state support for the development of reindeer husbandry and breeding, in particular, to improve deer breeds.

This corresponds to the conceptual provisions for the development of the territories of the Arctic zone of the Russian Federation. However, using and developing the Arctic, it is extremely important to assess the cultural, environmental and social consequences of projects and works proposed for implementation in places of traditional residence and traditional economic activity of small nations. They also need to be encouraged to adapt to the environmental, economic and social impacts of climate change.

3. LEGAL REGULATION MODEL OF ENVIRONMENTAL SAFETY OF THE ARCTIC REGION AT APPLICATION OF GENOMIC TECHNOLOGIES

The solution of economic and social problems of the Arctic region is possible by "creating a sustainable digital regional innovation economy with an ecological paradigm, sustainable infrastructure, low-carbon agriculture and fisheries. Special attention should be paid to environmental sectors and state development institutions, food and environmental safety, and focused on environmental impacts, environmental goals, environmental restrictions and measures, as well as strong and stable human capital "(Nekrasova, 2017). This economic and legal mechanism for the development of the Arctic region requires appropriate legal support. The definition of a model of legal regulation of environmental safety in the Arctic region when introducing genomic technologies should be based on a system-structural method that allows the formation of a structurally integrated and harmonized system of legislation in the field of environmental protection. security in building a green economy and solving economic and social problems (Voronina, 2019).The model of legal regulation to ensure environmental safety in the Arctic region is a set of normative legal acts of the Russian Federation, constituent entities of the Russian Federation, municipalities and local ordinances (Voronina, 2019). Basic law should be the main regulatory act. Lawyers suggest it a single federal law "On management of special environmental conditions in the Arctic zone of the Russian Federation" (Pankratova, 2015), or a federal law "On the development of the Arctic zone of the Russian Federation" (Nikishin, 2017) should be developed and adopted. In our opinion, the federal law "On the Arctic Ecological Zone of the Russian Federation" (Zhavoronkova & Agafonov, 2020) should be the central normative legal act in the field of environmental protection and environmental safety of the Arctic region, including genomic technologies and their use. This law should define the concepts of the Arctic ecological zone, the criteria for recognizing the Arctic territory as an ecological zone, the concepts of environmental, biological and genetic safety, the principles of ensuring environmental, biological and genetic safety, environmental and legal risks of carrying out economic activities using genomic technologies (separately for each type of activity), environmental and legal restrictions and prohibitions, legal environmental measures.

4. CONCLUSION

Thus, the legal regulation of ensuring the environmental safety of the Arctic region when introducing genomic technologies should be based on an integrated and systemic basis, be multi-leveled, have a differentiated nature, create a legal mechanism for protecting the environment when carrying out economic activities and applying genomic technologies and should be aimed at building "green "economy and the solution of economic and social problems of the Arctic.

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CHANGE IN THE EMPLOYMENT ACTION PLANS DURING CRISIS

Venelin Terziev
National Military University, Veliko Tarnovo, Bulgaria
University of Rousse, Rousse, Bulgaria
terziev@skmat.com

ABSTRACT
This publication analyzes and explores the processes of the Bulgarian market currently taking place due to the emergency caused by the COVID-19 pandemic. This work attempts to systematically analyze the current national employment plan and its priorities, as well as to address the possibilities for change in a critical situation. It offers alternative options for action, both in the direction of the current set of measures and for the financial resource restructure to provide these measures in the crisis.
Keywords: *Pandemic, COVID 19, Change, Employment, Policies*

1. INTRODUCTION

The crisis that has arisen from the COVID-19 pandemic is increasingly affecting all sectors of the economy, as well as social policies. Pre-crisis period is characterized by economic growth of the European countries and Bulgarian economy is not an exception. This relatively good condition brings some optimism as for the abilities to respond to such emergency situation. The labor market, which has so far been characterized by good performance, is expected to be under some pressure. The analysis of the indicators of the labor market before the crisis would give a good opportunity to implement the already existing Employment Action Plan in Bulgaria. Changes will be necessary, both in the state budget itself and in the implemented ongoing policies of the labour market.

2. EMPLOYMENT AND UNEMPLOYMENT IN BULGARIA IN 2019

Economic growth and positive tendencies of the labour market continue until the end of 2019. During the first nine months of 2019, employment increases and unemployment and economically inactive people decline on an annual basis. The economically active population aged 15- 64 is increasing, despite the unfavourable demographic processes. Their number is 3 282.4 thousand, which is 1% more than in the first nine months of 2018. As a result of the growth of the labour force, the economic activity rate for the population aged 15-64 increased by 1.7 percentage points on an annual basis reaching 73.3% in the first nine months of 2019. In the first nine months of 2019, the number of employed people aged 15-64 increased to 3,140.5 thousand with a higher growth rate (2.2%) than in the first three quarters of 2018. Employment is increasing in all age groups, with a greater tendency to increase among population aged 45-54 and 55-64. The employment rate for the population aged 15-64 is also increasing. In the first nine months of 2019, 70.1% of the population aged 15-64 were employed, 2.4 percentage points more comparing to the same period of the previous year. The employment rate for the population aged 20-64 is 75% on average for the three quarters of 2019, approaching the national target of 76%, which is to be reached in 2020. Compared to the first nine months of 2018, the value of the indicator is higher by 2.6 percentage points. Employment is increasing in all 18 economic activities, except those employed in trade, repair of motor vehicles and motorcycles, which decreased by 0.2% (1.3 thousand) compared to the first nine months of 2018. The more significant growth of the employed during this period is reported in the economic activities such as Hospitality industry - by 16.3 thousand, Manufacturing - by 10.5 thousand, State administration - by 8.8 thousand, Professional activities and scientific research - by 5.9 thousand and Creation and Dissemination of Information and Creative Products;

telecommunications - by 5.6 thousand. Employment growth is reported in all regions of Bulgaria, with the exception of the Northwestern Region, where employment among population aged 15-64 declines by 1.6% (4.4 thousand) compared to the first nine months of 2018. In the other five regions employment rate is increasing, the largest growth being in the Southwest, South Central and North Central regions. The employment rate for the population aged 15-64 is higher than the national average in the Southwestern region (75.9%), while in the Southeast it is almost as high as the national average (70%). The lowest employment rate is in the Northwestern region (59.5%). In the other three regions, the numbers are pretty similar: 66.8% in the Northeast, 69.2% in the South Central and 69.5% in the North Central regions. Unemployment has been steadily declining since 2014. This tendency also continues in the first nine months of 2019. The average for the first three quarters of 2019 is 144.2 thousand. Compared to the same period of year 2018, the number decreased by 19.8%. The average unemployment rate for the first nine months of 2019 is 4.3%, which is 1.1 percentage points less compared to the same period of the previous year. The unemployment rate for Bulgaria is lower than the average for the EU-28 since 2014. According to Eurostat, this trend continues in the first nine months of 2019, with an average of 4.3% for Bulgaria and 6.4% for the EU-28. A decrease in the number of unemployed is reported for all age groups. Numbers of the unemployed youth aged 15-24 continue to decline both as a separate group and as a share of the workforce. Compared to the first nine months of 2018, their number decreased by 37.2% to 13 thousand, while the youth unemployment rate decreased by 4.5 percentage points to 8.9%. The unemployment rate of the youth (aged 15-24) in Bulgaria is lower than the average in the EU-28 since 2015. According to Eurostat, this trend continues in the first nine months of 2019 – in Bulgaria the average value for the 9-month is 9.4% compared to the EU-28 average of 14.5%. The number of young people aged 15-24 who are unemployed, not pursuing education or training has been steadily declining since 2014. According to the latest Eurostat data, the numbers in 2018 in Bulgaria reach 15%, decreasing by 0.3 percentage points compared to the EU-28 average of 10.5%. For the period of National Youth Guarantee Implementation Plan 2014 – 2020, the number of young people aged 15-24 who are unemployed and do not pursue education or training decreased by 36.2% - from 149 thousand in 2014 to 95 thousand in 2018, according to Eurostat data. The number of long-term unemployed continues to drop since 2014. In the first nine months of 2019, compared to the same period of the previous year, their number decreased by 19.4% to 83.5 thousand, while the long-term unemployment rate decreased by 0.6 percentage points to 2.5%. Along with the decrease in unemployment, the number of economically inactive population is also dropping. There are 1 195.7 thousand economically inactive people aged 15-64, which is 7.1% less than in the first nine months of 2018. Their numbers continue to drop and in the first nine months of 2019 there are 62.1 thousand economically inactive people aged 15-64. On a yearly basis, there is a significant decrease in their number - by 26.9%. According to the data of the National Employment Agency, the number of the unemployed persons registered with the employment services continued to decrease in the first three quarters of 2019 compared to the same period of the previous year, while their average monthly number reaches 184 053 persons. However, the decrease in the unemployment rate is slowing down. On a yearly basis the decline during the first nine months of 2019 was 10.1%, compared to 14.7% in the first nine months of 2018. The average monthly unemployment rate reaches 5.6% from January to September 2019. Compared to the same period of the previous year, it decreased by 0.6 percentage points. According to the Employment Promotion Act in employment offices the following groups of people seeking a job may be registered: employed, retirees and students. During the first nine months of 2019 on an average monthly basis there were 2 429 employees, 956 students and 2,057 retirees who exercised that right. The number of persons in all three groups is increasing compared to the first nine months of 2018, which is the result of targeted actions by the Employment Agency to

attract and activate labour resources to address the shortage of staff in some industries or regions. The group of students is dominated by unqualified people - 71.7%, which is due to the actions for youth activation, incl. those who dropped out of the education system, whereas the groups of employed and retirees are dominated by specialists, 63.8% and 52.9% respectively. The dynamics of registered unemployed in the first nine months of 2019 is characterized by an increase of the inflow and a decrease of the outflow of unemployed persons compared to the same period of the previous year (Terziev, 2019; Georgiev, 2017-a; Georgiev, 2016).

3. EXPECTATIONS FOR THE LABOUR MARKET DEVELOPMENT IN 2020 BEFORE THE CRISIS

The strengths of the labour market in 2019 are expressed in a stable economic environment, fiscal sustainability, employment growth, reduction of unemployment, increase in education and training costs, low inflation, implementation of active employment policy programs and measures, digitization, developed capacity and gained experience of competent institutions and a sustainable regulatory framework, the support of European institutions and funds.

3.1. The weaknesses of the labour market in 2019 although not to the same degree, still remain. These include the shortage of qualified workers, especially those with secondary education, the gap between the needed professionals with certain skills and the available workforce, the high rate of unemployed people who are unqualified and undereducated, the large regional disparities in employment and pay, short-term employment (of accidental, seasonal nature, often unregulated), long-term unemployment among disadvantaged groups, despite its steady decline and large numbers of inactive people. Undeclared work continues to disrupt the functioning of the labour market, despite its restriction as a result of the collaboration between the institutions and the social partners. Overall, poor education, qualifications and inequalities related to socio-economic status are major obstacles to improving human capital with potential implications for skill levels and growth potential. The opportunities of new technologies and the digital economy for high quality employment are underutilized. Emigration has a negative impact on labour supply, but differences in salaries compared to more developed member states contribute to its continuation (Terziev, 2019c-e).

3.2. Threats to the labour market in 2020

Some of them have a long-term nature, such as demographic trends, structural imbalances of labour supply and demand and skills shortages, especially digital ones. Some other threats are anticipated in 2019 and may manifest themselves more significantly in 2020. They include worsening economic conditions and increasing risks to economic growth, significant indebtedness of non-financial corporations, which could hamper medium-term growth prospects, export restrictions and procurement, increasing pressure on wages due to labor shortages and limited job creation in certain sectors, lack of funding due to depletion of European Structural Funds at the end of the programme. The private sector will be wary in terms of job creation in the face of pressure to raise wages. Industrial relations are slowly adapting to the labour market, which is becoming more diverse, globalized and unconventional. Evaluations of the cyclical position of the economy performed by the Bulgarian National Bank show that at the beginning of the year economic activity in the country was above its potential level. These evaluations draw our attention to the fact that in terms of supply some of the resources in the economy continue to be above their optimum levels, in line with the long-term trend towards a significant fall in unemployment and maintaining a high level of production capacity.

4. OPPORTUNITIES FOR THE LABOUR MARKET IN 2020

Provision of the necessary funds from the state budget of the Republic of Bulgaria for training of employed and unemployed persons in order to acquire the skills sought by employers, including specialized training and seeking solutions to problems by:

- changes in education admission plans;
- specialized trainings and trainings on employers' requests for the unemployed;
- trainings for the employed;
- employment for workers from third countries;
- provision of more attractive wages and working conditions;
- utilization of the unused human resources potential by activating the unemployed and people seeking for a job;
- support in combining family and working life, flexible employment, part-time employment, retention of the employment of persons in retirement age, etc.;
- information campaigns among Bulgarians living abroad about the opportunities for professional fulfillment in Bulgaria, promoting the return of highly qualified professionals after training or working in other countries;
- provision of employment, including to municipalities, in order to reduce poverty in small settlements and rural areas, ensuring faster transitions from inactivity to employment, including through social assistance tools;
- removal of obstacles to active job search caused by poverty, poor health and poor living conditions;
- more efficient distribution and utilization of human resources, with a shift to better and more productive jobs, both by providing high-tech equipment and new technologies and by improving the skills and motivation to work, training managers, etc. In the short term, by supporting the geographical and occupational mobility of the workforce, the labour market demand can be met, but in the longer term, the problem of declining number of workforce can be solved by increasing its productivity;
- analysis of the processes and development of measures, following the example of countries with already accumulated experience in the implementation of new technologies, incl. for sectors where jobs are at risk due to automation and digitization, as well as areas and occupations where more jobs will be created;
- development of legislation to regulate changes in employment relations, as well as provision of social security for workers in new forms of work - mobile work in information and communication technologies, work with vouchers, distance work, etc.

5. PRIORITY ACTIONS FOR 2020

The 2020 National Employment Action Plan will include activities to stabilize the functioning of the labour market in order to be prepared, both for accelerating economic development and for the external and internal challenges of economic development. The aim is to develop human capital in order to meet the needs of the economy and to be able to adapt quickly to the changes in labour demand caused by both new technologies and structural changes. In order to increase labour supply, work with the labour potential will be continued by activating inactive persons and specialized labour force training, motivation and career guidance. The plan will continue to contribute to the achievement of the country's goals and commitments in the implementation of the EU Strategy "Europe 2020", European Pillar for Social Rights, the measures included in the National Reform Program 2020, the recommendation of the Council of 05/06/2019 (described below), The Convergence programme, The Government programme until 2021, the tasks of the Updated Employment Strategy 2013-2020, the National European Youth Guarantee Implementation Plan 2014-2020, the National Strategy for Lifelong Learning 2014-2020, the

National Strategy for Persons with Disabilities 2016-2020, The National Development Program: Bulgaria 2020, etc. At the same time, in the National Employment Action Plan (NEAP) 2020 there will be reserves to fund emergency measures in case of adverse events through the re-distribution of funds. Bulgaria is taking steps to implement the recommendation of the Council of 9 July 2019 on Bulgaria's National Reform Program for 2019 and delivering a Council opinion on the 2019 Convergence Program of Bulgaria (2019/C 301/02) published in the Official Journal of the EU on 5 September 2019 under the number C 301/02. The Recommendation points out that:

- The labour market has improved, yet there are still some challenges. Employment has reached its highest level since Bulgaria's accession to the EU and unemployment is below the EU average. Despite these positive changes, some groups of the population, such as low-skilled workers, young people, Romani and people with disabilities continue to face difficulties in finding employment. Specific measures are being taken in order to support the long-term unemployed who represent 3% of the active population in 2018. A combination of effective and continuous information measures, active employment policies and integrated social and employment services could improve the employability of disadvantaged groups and their chances of finding a job.
- The increasing lack of skilled workers in Bulgaria requires significant investment. The employability of young people can be enhanced if the quality and effectiveness of internships and traineeships is improved. Moreover, participation in training and retraining for increasing the skills among the older members of the workforce is very low. Despite the measures taken to promote the development of digital skills, the level of basic digital skills in Bulgaria remains among the lowest in the EU (29% of persons have basic digital skills, compared to an average of 57% in the EU).
- Despite ratification of the International Labour Organization Convention on the fixing of a minimum wage and conducting several rounds of negotiations in 2018, employers and trade union organizations still have different opinions on the criteria to be applied in determining the minimum wage. There is an opportunity for reaching consensus on the introduction of an objective and transparent wage setting mechanism. In the meantime, although the involvement of the social partners in the design and implementation of policies and reforms seems to have increased, constant support for enhanced social dialogue is still needed.
- Educational outcomes are low and continue to be strongly influenced by parents' socio-economic status. This reflects the challenges related to the quality and inclusive nature of the education and training system. Bulgaria is investing insufficiently in education, especially in pre-school and primary education - two areas that are crucial for creating equal opportunities from an early age. Participation in quality early childhood education and care is low, especially for the Romani and children from other disadvantaged groups. The percentage of children who give up their secondary education prematurely is still high, which has negative consequences for future employability and labour market outcomes. The applicability of vocational education and training for the labour market and the availability of dual vocational education and training remain insufficient. Although some measures are in the process of implementation, further efforts are needed to ensure that the skills of graduates can contribute to addressing skills shortages in the short and medium term in a consistent manner.
- Bulgaria still has a high level of income inequality and the risk of poverty or social exclusion. Although declining, the rate of poverty or social exclusion in 2018 was 32.8%, which is still well above the EU average. The social security system does not cover all the employed persons and does not have enough resources to deal with significant social problems. This reflects the low level of social spending, the uneven availability of social services throughout the country and the limited redistributive effects of the tax system.

In 2018, the incomes of the richest 20% of the population were 7.7 times higher than those of the poorest 20%, which is still among the highest in the EU. Despite some measures, the adequacy and coverage of minimum incomes remain limited and there is still no objective mechanism for updating them regularly. The provision of social services is hampered by their poor quality and lack of an integrated approach to active inclusion. There are still differences in access to social services, healthcare and long-term care. This undermines their ability to provide comprehensive support for the most vulnerable groups, such as the Romani, children, the elderly, people with disabilities and people living in rural areas. Part of the population has difficulties accessing affordable housing. Therefore, more efforts are needed to stimulate active inclusion, promote socio-economic integration of vulnerable groups, including the Romani, improve access to quality services and take measures to eliminate material deprivation (Terziev, 2019f-i).

Bulgaria is recommended to take the following actions in 2019 and 2020:

- Improve employability by enhancing skills, including digital skills. Increase the quality, relevance and the inclusive nature of education and training on the labour market, in particular for the Romani and other disadvantaged groups. Take measures for social inclusion by improving access to integrated social and employment services and by supporting minimum incomes more effectively. Improve access to healthcare, including by reducing direct payments from patients and fighting the shortage of healthcare professionals.
- The Council recommendations on the ways to improve skills, the quality framework for internships, the European framework for quality and effective traineeships and key competences for lifelong learning will continue to be applied.

Taking into account the abovementioned statements, the vision of the National Employment Action Plan in 2020 is defined as:"Supporting the growth of the economy by creating conditions for ensuring the quantity and quality of workforce demanded by employers, among others by activating and enhancing the employability of disadvantaged groups in the labour market, first of all from the least developed regions". In this regard, in 2020, as well as in 2019, services for jobseekers and inactive people, as well as workforce training are among leading active labour market policies. The actions of the Plan will create conditions for reducing labour market imbalances by improving the balance of labour supply and labour demand (in terms of quantity and quality) and ensuring rapid and qualitative transitions from unemployment and inactivity to employment through the development of services and cooperation with employers. Upgrading the qualifications and skills of the unemployed and the employed persons enables them to achieve higher productivity, providing that other conditions are equal. Supporting the unemployed in their search for employment, participation in training and employment of the most vulnerable groups of the unemployed persons provides social inclusion for these groups, earned income and social security rights, tax revenues and social security benefits for the state. Covering part of the expenses for the personnel of companies, especially small and medium-sized enterprises, is in practice supporting and encouraging them to create workplaces. Investment in areas of high unemployment will also be provided. Provision of training and employment for the disadvantaged groups is a chance to escape the poverty trap and to fulfill some of the tasks of the social economy. Organizing information campaigns to raise awareness of the benefits of skills development and encouraging participation in various forms of training are a way of attracting those in greatest need of training - the low-skilled unemployed persons. In the event of a deterioration of the international economic environment as a result of international market crashes, regional conflicts and the movement of large groups of people from one country to another and the internal environment due to crises and natural disasters,

subsidized employment under programs will be provided, while employment will also achieve other goals such as improving security, protecting the environment, rebuilding and improving the infrastructure of settlements, etc. During emergency and natural disasters temporary employment in regions with difficulties will be provided (Georgiev, 2019j). The main goals and priorities of the national employment policy in 2020 in the projected economic growth for 2020 in the forecast set in the State Budget of the Republic of Bulgaria for 2020 or higher growth, stable internal environment and growth of domestic demand include:

- Supporting the economy by providing one of the key means for sustainable growth - quality and more productive workforce according to the employers' needs. Reducing the imbalance between labour supply and labour demand and supporting the creation of quality workplaces in the real economy to achieve employment-friendly growth. Improving the business environment and maintaining employment in major sectors of the economy, reducing unregulated employment and undeclared payments. Improving the quality of the workforce in small and medium-sized enterprises. Reducing employment disparities between regions.
- Increasing participation in the labour market and reducing the number of inactive people of working age by training to acquire the knowledge, skills and competences sought by employers.
- More successful inclusion and mastering of skills by unemployed people from the most disadvantaged groups, faster process of getting a job and sustainable employment. Achieving the objectives of the European Youth Guarantee to accelerate the reduction of youth unemployment, especially from the NEET group. Reducing the number of long-term unemployed and following the Council recommendation on this target group.
- Improving the efficiency and quality of employment services, implementing new services, including through systematic cooperation with business, closer interaction with private employment enterprises and temporary employment enterprises. Rapid transition from unemployment to employment for job seekers with high skills and career opportunities. Achieving long-lasting effect of integrating the most vulnerable groups into the labour market by providing integrated services from the territorial directorates of the Employment Agency and the Social Assistance Agency. Increasing the impact of active labour market programs, projects and measures on the recommendations of net assessments and improving the financial efficiency of the money spent.
- Developing interinstitutional interaction and social partnership.
- In case of sudden deterioration of the economic situation and lower than planned GDP growth due to unforeseen circumstances of external nature, natural disasters, financial imbalances, etc. one more priority is added:
    - Reducing unemployment by informing about job offers across the country, providing training, promoting internal mobility, offering temporary employment for a certain number of unemployed in economically disadvantaged regions, providing training and assistance in rapid transition to new employment for fired staff from enterprises in difficulty and/or that ceased their activity.

6. MAIN ACTIVITIES OF THE NATIONAL EMPLOYMENT ACTION PLAN

The National Employment Action Plan for 2020 will include actions in the following main areas:

- Support for promoting employment-friendly economic growth, improvement of the business environment, development of key sectors of the economy with a positive impact on employment: incl. industry and environment; energy; agriculture; construction; transport; tourism; information and communication technologies; healthcare; trade, as well as support for employment in small and medium-sized enterprises.

- Preparation for future changes in labour under the influence of new technologies.
- Improvement of social dialogue by involving the social partners in the creation and implementation of employment policies.
- Regional development.
- Improvement of the labour market functioning:
  - Provision of qualified and skilled workforce in accordance with the demand of the business and in view of future needs;
  - Provision of employment for disadvantaged groups on the labour market in programmes, projects and measures of the Employment Promotion Act and the Operational Program "Human Resources Development"; implementation of the Youth Guarantee; Improvement of the services aimed to activate the unemployed; assistance and vocational guidance to the professions and specialties required by the labour market in order to quarantee quick employment and reduction of the unemployment duration; activation of inactive persons incl. discouraged persons; promotion of internal mobility;
  - Restriction of unregulated employment and undeclared payments to employees;
  - Income policy and passive labour market policy;
  - Provision of social security and social inclusion;
  - Free movement of workers within the EU and employment of persons from third countries.
- Improvement of the management of employment policies: National Employment Agency, General Labour Inspectorate and other institutions.

7. CRISIS CAUSED BY COVID 19 EMERGENCY CIRCUMSTANCES

The implementation of the goals and activities set out in the National Employment Action Plan will be significantly hampered by the qualitatively new and different circumstances created. Although some employers retain their employees in one form or another and this keeps the labour market artificially in a relatively balanced state, the situation will change dramatically in the nearest future. Part of the staff of the most affected sectors of the economy, such as tourism, public transportation, etc. have begun the process of dismissing their employees. This will rapidly change the predictions for increasing employment and maintaining or even reducing the unemployment rate (Terziev, Georgiev, 2020; Bogdanova, Parashkevova, Stoyanova, 2020a). In fact, on the labour market new vulnerable groups will appear that are the direct consequence of the pandemic. This will necessitate a reformulation of the goals and priorities of action on the National Plan, even if its financial framework is changed. People with appropriate qualifications and specific competencies will join the labour market, but in the current situation it is impossible for them to be employed. There are several ways to address the issue: they should be financially supported by receiving appropriate cash compensation, and it is expected that the activity in which they were engaged will recover soon enough after the crisis is over, or they should be offered jobs still available, but which do not meet their qualifications and competencies. Both measures would be temporary in nature, which would rather prevent them from ending up in a difficult social and life situation. There are quite clear signals in the society that small and medium-sized enterprises are facing particularly serious difficulties and are the one that do not have free financial resources. This contributes to the creation of new critical groups of people who already are or will remain unemployed in the near future. A relatively diverse composition of professions and different age of workers that will not be able to participate in the labour market with limited job opportunities. The presence of economic and social imbalances in certain regions of the country, especially in its northwestern part, will predispose to an even more difficult situation. Approaches should be differentiated in two directions - the first one targeted at supporting the businesses themselves in order to maintain existing employment.

Various practices and technics have been applied to carry out such activities that have been implemented in Bulgaria. In Bulgaria, a successful practice has been implemented aimed to assist people who are left with little time to early retirement or reaching retirement age - a mechanism for paying certain wages and social security payments for up to two years. Almost the same mechanism could be proposed and implemented by specifying a specific period of action. Thus, the question arises in which directions such a financial resource should be directed and how it will be distributed as fairly as possible. Naturally, different systems of selection criteria can be applied, such as reduced production volumes, reduced employed staff based on previous numbers, as well as those for sectors that are directly affected and unable to operate. Each of the criteria should have a certain corrective influence in making the appropriate support decision. It is an easy-to-implement mechanism that will deliver quick results, helping to ensure that companies do not have to fire their employees during the crisis. The question once again is whether the market behavior of the certain enterprise will recover sufficiently quickly and fully after the end of the crisis caused by COVID 19 pandemic. However, there are also companies that have ceased their operations and fired almost all of their staff - especially those in the service industry, who cannot perform their job in any other form (Bogdanova, 2019k). This also brings the question of what is happening to those staff who have specific skills and who have to be involved in such activities in order for those skills to be used appropriately. If this is not possible, a solution to this group of newly appeared unemployed should be found. Again, there are at least two approaches to the solution of the problem: one of them is the passive approach of supporting them in a short period of time with financial resources (in various forms such as benefits, social assistance, etc.) and the other one offers retraining these people in such specialties which may provide employment for them. Large numbers of this group have not participated actively in the labour market in recent years, and this is an unusual role for them, thus there will be an adaptation period at the beginning, i.e. the awareness that they are unemployed in a particularly non-dynamic and closed labour market. These are mostly people from small and family-run businesses who have provided support for their families through their manufacturing or service activities. The cessation of activity of large enterprises, whose activity is mainly related to other companies in foreign countries, is currently experiencing a period of stagnation. Most of the staff is on paid or unpaid leave, expecting a positive solution to the crisis and getting everyone back to their jobs. There is also a worse-case scenario that we can expect, meaning that this type of production will shrink significantly and the decrease in production will in itself be due to the fact that commodity markets will not automatically recover. This will create additional pressure on the Bulgarian market and will present the current system with a serious challenge to seek solutions to the problems through tools and measures seeking sustainable employment (Terziev, 2019a-b).

8. CONCLUSION

All in all, it is necessary to quickly consider changing the goals and actions of the National Employment Action Plan and to provide additional funding to support the crisis management process and the functioning of the labour market. Obviously, the criteria set to be achieved under the plan should change, leading to a negative employment trend and an increase in unemployment. This program provides funds from the state budget to ensure employment for nearly 13,000 of the unemployed and training for 11,824 of the unemployed persons. This will prove to be insufficient given that in the last days of March alone there were several thousand people registered as unemployed per day and this process will continue for the next few months. The projected unemployment rate 4.1% is likely to increase and reach far higher levels, probably exceeding the critical levels of the 2008 financial crisis.

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