



# GLOBAL SOCIAL AND ECONOMIC CHALLENGES AND REGIONAL DEVELOPMENT

Proceedings of the 16th International Conference  
of the Association of Economic Universities  
of South and Eastern Europe  
and the Black Sea Region (ASECU)  
(November 19, 2020)

**Novosibirsk, RUSSIA**

NOVOSIBIRSK STATE UNIVERSITY  
OF ECONOMICS AND MANAGEMENT (NSUEM)  
ASSOCIATION OF ECONOMIC UNIVERSITIES  
OF SOUTH AND EASTERN EUROPE AND THE BLACK SEA REGION (ASECU)

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An author bears the full responsibility for the original ideas of their work as well as for the mistakes made solely by them.

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## FOREWORD

Allow me to start with a promise. Let us promise to ourselves that we will do our best in order to return to more human, direct, constructive, dynamic and interactive way of communicating, as soon as the science in medicine will allow us to counteract the difficult situation of the pandemic. I'm saying that because I have the feeling that the progress in medicine is enough. There are special views in academic community, in political and socio-economic involvement and happenings, which suppose that this pandemic is the chance for changing and altering the way of strong, personal, direct and constructive links that we use and will have in the future.

My personal view is that it could be, perhaps, seen as a chance, because, truly, it allows us or oblige us to use in more effective way our technological accomplishments. But at the same time we should anticipate that utilizing the technological accomplishments, that bring us together even in a distance way, should not be an alternative against direct, human, constructive and interactive communication, especially in academic events.

Speaking of that, I would also like to thank you for your passion and being here even a half a year after the initial scheduled date, putting your efforts to organize the virtual conference. I am sure that at the end we will overcome the problems of distance communication and will be able to draw important conclusions, as well as to strengthen cooperation in this very important region, which used to be all over the human history a region of conflicts, but at the same time a region of strong links, socioeconomic, ideological and political cooperation, a region, which despite the reappearing conflicts at the end provides us a feeling of common belonging.

The Association of Economic Universities of South and Eastern Europe and the Black Sea (ASECU) is an association that works towards this direction of strengthening our cooperation, our links, common operation and respect. In that sense, I would also like to invite you to participate in the next event, the 17th ASECU conference and the Anniversary of 25 years to the ASECU.

Once again I feel very honorable to be here with you, I would love to be in Novosibirsk and hope that I will get this opportunity very soon to meet you personally. Thank you.

*President ASECU Grigorios Zarotiadis*

In modern conditions, when digital technologies are rapidly being introduced in all spheres of public life, universities are playing an increasingly important role in building bridges between countries, regions, industries, scientists and professors.

It is thanks to digital technologies that such interaction is becoming easier and more effective. This, in turn, opens up new opportunities for the development of the intellectual capital of universities and its elements – human and structural capital.

Scientific conferences that bring together researchers from different universities have long been a common way to exchange knowledge and establish contacts. But online technologies and social media are challenging the traditional format. Of course, we all understand that in-person communication is difficult to replace, but today it is an indisputable fact that the conference system will undergo significant changes in the future. The recent pandemic has only accelerated these inevitable changes.

Will this have a positive impact on the development of the intellectual capital of universities? I would like to believe that, as we say in Russia, every cloud has a silver lining, and soon we will see the growth of inter-university collaborations, the formation of new international research teams, and the accelerated diffusion of knowledge between regions and countries. We hope that some of the scientists will soon pay due attention to the study of the impact of the pandemic on the development of universities.

The changes and restrictions did not pass by the 16th International Conference of the Association of Economic Universities of South and Eastern Europe and the Black Sea Region (ASECU), which is held online at the site of the Novosibirsk State University of Economics and Management.

The remote format of the conference does not allow the conference participants to see the beauty of Siberia and its capital – Novosibirsk, the third largest city in Russia, but at the same time allows them to reach a wide range of researchers. The conference is attended by 73 participants from 11 countries: Russia, Greece, North Macedonia, Albania, Bulgaria, Romania, South Africa, Poland, Bangladesh, Ireland, and Turkey. Russia, in addition to Novosibirsk, is represented by researchers from Moscow, Rostov-on-Don, and Tomsk. From this list it is clear that the conference has not only crossed the regional borders, but also went far beyond Europe.

The topic of the conference makes it possible to unite researchers in the framework of a scientific discussion on a wide range of issues. Being co-organizers we hope that the conference materials and the established contacts will contribute to the development of relations between universities and between individual researchers in various fields of science, as well as to the formation of a favourable image of the conference participants in the scientific community.

We would like to express our gratitude to Prof. Grigoris Zarotiadis, President of ASECU, Prof. Oleg Bodyagin, Vice-president and Prof. Leonid Nakov, General Secretary of ASECU, and to all participants and listeners of the conference for coming online. At the same time, we do not give up hope to personally see the participants of future ASECU conferences in Novosibirsk.

*First Vice-Rector of NSUEM Pavel Novgorodov*

# FEATURES OF THE MONETARY POLICY OF THE BANK OF RUSSIA DURING THE ECONOMIC CRISIS CAUSED BY COVID-19

Aleksandr Bass\*

**Abstract.** *The article examines the features of the modern monetary policy of the Bank of Russia during the economic crisis caused by COVID-19. It is emphasized that in the first half of 2020 there was a significant reduction in the lending activity of borrowers. In Russia as a whole, the volume of loans issued by commercial banks decreased. In this situation, the Bank of Russia continued its practice of lowering the key rate in order to increase economic activity. And for the first time in its practice the Bank of Russia announced the transition to a targeted stimulating monetary policy. The article notes that in practice, the incentive nature of this policy is insufficiently manifested. And this is reflected in the decline in lending and investment activity. It is concluded that low inflation rates in the current situation also have a negative impact on the decline in the quality of corporate borrowers, the growth of the debt burden, and the increase in overdue loans. Suggestions are made that at present time it is necessary to create additional stimulating measures aimed at improving the efficiency of functioning of the banking sector of the economy.*

**Keywords:** *monetary policy of the Bank of Russia, inflation rate, key rate, investments, deposit rates.*

**JEL Classifications:** *1-5 JEL code: A1 General Economics.*

The Russian economy faced the economic crisis caused by the COVID-19 pandemic; it was in a stage of slow growth amid tight monetary policy. Economic growth in 2017 was 1.6 percent, and in 2018 — 2.3 percent, but in 2019 it slowed down to 1.3 percent<sup>1</sup>.

The Bank of Russia, within the framework of its monetary policy, pursued an inflation targeting policy, maintaining inflation at about 4 percent, applying in these conditions a free floating exchange rate regime. To achieve this goal, the key interest rate and active communication with the market were used as the main instruments.

Inflation targeting policy is now widely used in both developed and developing countries. Inflation targets in developed countries tend to be in the range of 1.5–2.5 percent, but a developing economy like Russia needs a higher inflation rate. The Russian experience in implementing the inflation targeting policy can be considered quite successful. There were no serious discrepancies between the planned level and the real inflation rate, with the exception of the fact that real inflation exceeded the target level in 2015 due to the sharp depreciation of the ruble.

One of the additional factors for the success of the inflation targeting policy was the decrease in the dependence of the ruble exchange rate on oil prices. This was facilitated by the introduction of a budget rule, under which all oil revenues in excess of \$ 40 per barrel (with annual indexation) are transferred to the National Welfare Fund and do not participate in the formation of the budget. As a result, over the past two years, oil prices have ceased to be the determining factor for the ruble. The key rate has been gradually declining since mid-2019, following an increase in late 2018 due to inflationary risks.

The pre-crisis macroeconomic situation in Russia was characterized by a tight monetary policy, a stable budget surplus, and a decrease in the dependence of the ruble exchange rate on oil prices. The Bank of Russia gradually lowered the key rate due to the success of the inflation targeting policy. Despite this, the real interest rate remained high compared to other developed and emerging economies. The high level of real interest rates had a negative effect on lending and investment activity: investments in fixed assets grow extremely slowly and only in highly developed or resource-based Russian regions, while in other regions investment activity is declining.

In the first half of 2020, the economies of most countries of the world were influenced by factors associated with the spread of coronavirus infection, which contributed to the decline in the global economy.

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<sup>1</sup> Central Bank of the Russian Federation (Bank of Russia) [electronic resource]. URL: <https://www.cbr.ru/> (date of treatment: 25.09.2020).

Therefore, the Bank of Russia has significantly revised its macroeconomic forecast for 2020–2022. The coronavirus (COVID-19) pandemic, measures taken by governments in Russia and the world to limit the spread of the pandemic, as well as their consequences for the global oil market, make a significant decrease in economic activity in the Russian economy in 2020 inevitable.

The weakening of the ruble, which occurred in the spring and summer of this year due to the deterioration of external conditions, and the anticipatory demand for essential goods accelerated the current rise in prices. However, this acceleration will be short-lived. The disinflationary impact of a significant contraction in external and domestic demand is likely to become a determining factor for inflation dynamics in autumn 2020 and next year.

In June and July 2020, the Bank of Russia Board of Directors decided to reduce the key rate by 100 and 25 basis points, respectively, to 4.25 percent per annum. Thus, in June–July 2020, the key rate continued to decline. When making decisions on the key rate, the Bank of Russia took into account the following factors<sup>1</sup>.

First, inflation dynamics is largely influenced by a significant drop in domestic and foreign demand, which turned out to be deeper than the Bank of Russia expected in April 2020. This is due to the longer duration of restrictive measures to combat coronavirus in Russia and in the world. At the same time, the strengthening of the ruble since April 2020 largely compensated for its weakening in March 2020, which limits the upward influence of the exchange rate on consumer prices.

At the current stage, in the context of easing restrictive measures, there is a heterogeneity in the dynamics of consumer prices. This is due to the gradual and uneven recovery of demand and supply in the markets for goods and services. However, current inflationary pressures remain moderate. The indicators of the monthly growth rates of consumer prices reflecting the most stable processes of price dynamics, according to the Bank of Russia estimates, are close to or below 4 percent in annual terms. The increase in the annual inflation rate to 3.2 percent in June 2020 and its expected increase in the second half of the year is largely due to the exit from the calculation of the low rates of price growth in the second half of 2019.

In May–June 2020, inflationary expectations of the population and business decreased after the growth in March–April 2020. In July 2020, they generally stabilized near the levels reached. Thus, the impact of short-term pro-inflationary factors on inflationary expectations was temporary.

Taking into account the current monetary policy, it is projected that annual inflation will be 3.7–4.2 percent in 2020, 3.5–4.0 percent in 2021 and will remain close to 4 percent in the future.

Second, a significant reduction in the key rate was undertaken to ensure that monetary conditions were relaxed to support domestic demand and stabilize inflation near 4 percent over the forecast horizon. This is especially important when a number of factors can slow down the process of lowering interest rates in the financial sector. These factors, in particular, include increased credit risks, leading to tougher requirements for borrowers, as well as changing external conditions, which manifests itself in fluctuations in country risk premiums.

When making decisions, the Bank of Russia also took into account that since May 2020, monetary conditions have already been softened after they tightened somewhat in March–April 2020. This was facilitated by the reduction in the key rate implemented since April 2020, as well as by the stabilization of the situation in the external financial and commodity markets. Thus, compared to the April 2020 figures, the yields of federal loan bonds and corporate bonds decreased, as well as interest rates on the credit and deposit market. The yield spreads of corporate bonds to federal loan bonds approached the levels of the beginning of the 2020 year.

Third, restrictive measures and a significant drop in external and domestic demand had a longer negative impact on economic activity than the Bank of Russia had anticipated in April 2020. Taking into account the gradual lifting of restrictive measures, the recovery of the Russian economy is proceeding unevenly across industries and regions, which is reflected by the indicators of business and consumer activity in May–June 2020, as well as operational indicators in July 2020.

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<sup>1</sup> Report on Monetary Policy No. 3, July 2020 [electronic resource]. URL: [https://cbr.ru/analytics/dkp/ddcp/longread\\_3\\_31/page/](https://cbr.ru/analytics/dkp/ddcp/longread_3_31/page/) (date of treatment: 10.10.2020).

The trajectory of further gradual economic recovery, according to the Bank of Russia estimates, may be unstable due to the drop in incomes, restrained consumer behavior, cautious business sentiments, and restrictions on the part of external demand.

Under these conditions, according to the forecast of the Bank of Russia, gross domestic product will decrease by 4.5–5.5 percent in 2020. In the future, the recovery growth of the Russian economy is projected by 3.5–4.5 percent in 2021 and by 2.5–3.5 percent in 2022. The Russian economy will continue to be supported by measures of the Government and the Bank of Russia to limit the economic consequences of the coronavirus pandemic, including the easing of monetary policy, as well as regulatory measures of the Bank of Russia.

Fourth, when making decisions on the key rate in June-July 2020, the Bank of Russia took into account the prevalence of disinflationary risks over risks connected with inflation on the forecast horizon. Disinflationary risks for the baseline scenario are mainly associated with uncertainty about the further development of the situation with the coronavirus pandemic in Russia and in the world, the scale of possible countermeasures and their impact on economic activity, as well as the speed of recovery of the global and Russian economies as a result of easing restrictive measures. Inflation dynamics can also be restrained by persistent changes in the preferences and behavior of the population, as well as a concomitant increase in the propensity to save.

At the same time, in the short term, a number of factors, according to the Bank of Russia estimates, may exert upward pressure on prices, in particular, disruption of supply chains amid continuing restrictions, as well as additional costs for enterprises associated with protecting workers and consumers from the threat of the spread of coronavirus. Short-term risks, connected with inflation, may also be associated with a more significant than assumed in the baseline scenario, deferred demand for goods and services. Periods of increased volatility in global markets may be reflected in exchange rate and inflationary expectations.

The Bank of Russia also takes into account that the mid-term dynamics of inflation will be significantly influenced by fiscal policy, in particular the scale and effectiveness of measures taken by the Government to mitigate the consequences of the coronavirus pandemic and overcome structural constraints, as well as the speed of fiscal consolidation in 2021–2022.

The decisions taken by the Bank of Russia in June-July 2020 to cut the key rate help to ease monetary conditions over the forecast horizon. If the situation develops in accordance with the baseline forecast, the Bank of Russia will assess the feasibility of further cuts in the key rate at the next meetings. The Bank of Russia will make decisions on the key rate taking into account the actual and expected dynamics of inflation in relation to the target, the development of the economy over the forecast horizon, as well as assessing the risks from internal and external conditions and the reaction of financial markets to them.

It was announced that over the entire forecast horizon, the Bank of Russia will pursue its monetary policy in such a way as to ensure that inflation will stabilize near 4 percent. At the same time, taking into account the action of significant disinflationary factors on the demand side and the phased removal of restrictive measures, as well as taking into account the monetary policy easing implemented since April 2020, the trajectory of the key rate decreased. In July 2020, the Bank of Russia also revised down the estimated range of values of the real neutral key rate from 2–3 percent to 1–2 percent per annum. This corresponds to a nominal neutral interest rate of 5–6 percent per annum, with an inflation target of around 4 percent. The refinement of the neutral rate range is due to both lower interest rates in the global economy and a decrease in the country risk premium for Russia.

Taking into account that the neutral rate in the economy is an unobservable variable and depends on a wide range of both internal and external factors, as well as on the transmission mechanism of monetary policy, its estimate may change under the influence of these factors. In this regard, in the future, the Bank of Russia will continue to carry out a comprehensive analysis of the factors affecting the neutral rate.

Based on the results of the April 2020 meeting of the Board of Directors, when the key rate was reduced by 50 basis points, to 5.5 percent per annum, the Bank of Russia allowed the possibility

of a further reduction in the key rate if the situation develops in accordance with the baseline forecast. At the same time, at a press conference following the meeting of the Board of Directors and at interim conferences in May-June 2020, it was noted that in April 2020, among the possible options for reducing the key rate, a decrease by 100 basis points was also considered.

Following the June 2020 meeting of the Board of Directors, the Bank of Russia lowered the key rate to 4.5 percent per annum and noted in its statement that it will assess the feasibility of further reducing the key rate at the next meetings of the Board of Directors if the situation develops in accordance with the baseline forecast<sup>1</sup>.

After cutting the key rate in July 2020 by 25 basis points to 4.25 percent per annum, the Bank of Russia Board of Directors twice decided to keep the key rate at the lowest historical level of 4.25 percent per annum, on September 18 and October 23, 2020. Such actions were the result of the transition to a soft monetary policy to support the economy amid the pandemic<sup>2</sup>.

In a press release following the October 2020 meeting, the Central Bank noted the deterioration of the epidemiological situation in Russia and in the world, as well as the unstable situation in the external financial and commodity markets, which, given geopolitical factors, may lead to continued increased volatility. The Bank of Russia noted that due to the dynamics of exchange rates, there is an increase in inflationary expectations of the population and companies.

In the medium term, disinflationary risks still prevail, but the effect of short-term risks, connected with inflation, has somewhat intensified. According to the forecast of the Bank of Russia, in the context of the monetary policy being pursued, annual inflation will amount to 3.5–4.0 percent in 2021 and will remain close to 4 percent in the future. It is noted that the Bank of Russia will assess the feasibility of cutting the key rate at the next meetings.

Along with this, a relatively long period of low inflation — (Russian inflation has been at a historically low level for the fourth year already) can lead to significant negative consequences for the Russian economy and the banking system. The inflation rate today differs significantly by region and by industry. For example, in July 2020, annual inflation in the Kamchatka Territory was 1.7 percent per annum, and in the Amur Region — 5.3 percent per annum. But in fact, instead of a small inflation of 1–2 percent, there may be deflation, which has many negative consequences for the economy. By maintaining the all-Russian rate of growth of prices at the level of 4 percent, it is possible to provoke deflation in some regions.

Industry differences in inflation rates are even more differentiated. So, for example, the rise in producer prices in a complex of industries related to oil production and production experienced strong deflation: –29.1 percent over six months in the crude oil and natural gas production industry, –11.2 percent in the coke and petroleum products industry, deflation of 23.2 percent occurred in the coal mining industry for the year; in the extraction of metal ores was 19.7 percent for six months of 2020. The data presented show that a significant part of the domestic sectors of the real sector of the economy functions in negative deflationary conditions. In industries with low profitability, focused on consumer and investment demand, deflation can lead to a prolonged decline in production.

Low inflation also leads to significant differentiation of real lending rates. Borrowers with high credit ratings can borrow at lower rates. At the same time, commercial banks will demand high interest rates for borrowers with low credit ratings, including a significant risk premium in an environment of heightened uncertainty. As a result, there is a danger of a prolonged phase of the credit squeeze — such a phase of the credit cycle, in which lending activity decreases, despite declining interest rates. As a result of a decrease in lending activity, the investment activity of the real sector of the economy will decrease even more.

It is important to note that the real cost of borrowed capital rises with decreasing inflation, as the real interest rate rises. This applies to all categories of borrowers. In this regard, higher, but

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<sup>1</sup> Statement by the Chairman of the Bank of Russia Elvira Nabiullina following the meeting of the Board of Directors on June 19, 2020 [electronic resource]. URL: <https://cbr.ru/press/event/?id=6851> (date of treatment 10.10.2020).

<sup>2</sup> Statement by the Chairman of the Bank of Russia Elvira Nabiullina following the meeting of the Board of Directors on July 24, 2020 [electronic resource]. URL: <https://cbr.ru/press/event/?id=7949> (date of treatment: 10.15.2020).

not dangerous for the domestic economy, inflation (about 5–6 percent) could significantly affect the reduction of the real credit burden. With low inflation, even lower lending rates will stimulate less production growth and wage growth.

An important aspect is that a low key rate ultimately leads to a decrease in the marginality of the banking business and the need to restructure it. The attractiveness of bank loans is increasing, and at the same time the risk of a decrease in the quality of borrowers is growing, since at low rates, the number of individual borrowers trying to get a loan increases significantly.

Another significant consequence of low inflation, which Russian commercial banks already have to mitigate, is a decrease in public interest in bank deposits and a massive withdrawal of deposits. In theory, consistently low inflation should stimulate the growth of long-term savings, which should be the main source of investment. But in modern Russian conditions, with today's inflation rate and low interest rates on deposits, the opposite process is taking place: the attractiveness of long-term investments is sharply reduced. That is why it is very important for the Bank of Russia not only to bring inflation to the target level of 4 percent, but also to stabilize it at this level, so that later the key rate can be returned to the level of + 2.5–3 percent to inflation. This should ensure the growth of deposits in commercial banks and increase their role as a source of investment in the economy<sup>1</sup>.

Thus, we can conclude that in the current economic situation, if we consider low inflation as a measure of support for the economy, then it must be supplemented with special measures, such as the use of targeted support for some industries in the form of tax incentives, and an increase in infrastructure costs.

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<sup>1</sup> A. Tabakh. The Central Bank is preparing to raise rates. *Vedomosti*. 09.24.2020.

# MULTIDIMENSIONAL ACCOUNTING AND MULTIDIMENSIONAL MODEL OF NATIONAL ACCOUNTS

Aleksey Kovalev\*

**Abstract.** *The System of National Accounts (SNA) plays an important role in the regional and national governance. The developers of the 2008 SNA standard emphasize the methodological and information link between the system of national accounts and the accounting of an individual economic entity. Meanwhile, the system of national accounts is based on the accounting and statistical reporting data that have undergone a significant transformation. The article considers the possibility of developing the SNA system, based on multidimensional accounting. This solution can expand the capabilities of the SNA and provide an information link between the data of an individual economic entity and the SNA as a whole.*

**Keywords:** *the system of national accounts, multidimensional accounting, accounting.*

**JEL Classifications:** *E01, M41, M48.*

## INTRODUCTION

The modern system of national accounts (SNA) is a complex macroeconomic model that underlies economic statistics of market economies. The SNA facilitates various studies of the relevant national economy, which is critically important for the effective management of a country with a developed market economy. The SNA provides a regional cross-section of data, describing the territorial structure of the country's development and providing information to regional authorities. In Russia, the SNA was initially developed in 1991 on the basis of the 1968 SNA edition. Since 1995, the statistical compilation of the SNA of the Russian Federation has been published annually. The SNA development plan for Russia provides a gradual transition to the 2008 SNA standards (SNA, 2008) for the period of 2011–2017. The 2008 SNA standards and leading researchers highlight the influence of the accounting data of individual economic entities on the SNA information. At the same time, the accounting data enters the SNA in a generalized and significantly processed form, which makes it difficult to analyse and compare the information. Accounting data from the double-entry system is converted into the structure of accounting and statistical reporting, then transmitted to the statistical authorities, and then again converted into the SNA double-entry system. However, there is a significant similarity between the bookkeeping accounts and the SNA. Therefore, there is a pressing need to develop information links between the SNA and accounting data at the micro level.

## LITERATURE REVIEW

The great importance and existing issues of the link between the SNA and accounting at the micro level are reflected in the 2008 SNA standards [SNA 2018]. Accounts and double entry combine the accounting methodology and the SNA. But the 2008 SNA also has differences in rules, assessment methods, and terminology (1.60). In addition, one of the authors of the 2008 SNA standards, Peter van de Ven, made a number of comments on this issue (Van de Ven, 2008). In particular, he notes that in practice, when combining different sources of accounting data, there are significant inconsistencies that appear within the resource usage tables. In addition, it notes differences in depreciation methods and useful life of fixed assets. The development of the SNA and IFRS is neither synchronized nor interrelated. Gallo Gueye and Jens Grütz of Eurostat (Gueye & Grütz, 2010) note that the accounting does not reflect illegal transactions and illegal activities. Ruggles (1983) emphasized: (a) the importance of the integration of the income and expense account with financial reporting, revaluation of accounts and balance sheets; (b) the need “to ensure a direct correspondence between the aggregated data in the sector and subsector accounts and the data in the microdata sets of transactors”. K. K. Belgibaeva (Belgibaeva, 2012) and G. V. Mikhailova (Mikhailova, 2008) wrote in their works about the development of the links between bookkeeping for individual entities and the SNA. Their works

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share a common approach. In their articles the authors consider options for constructing comparable reporting for the SNA and individual economic subjects.

## METHODOLOGY DESCRIPTION

This paper uses methods of multidimensional classification, multidimensional accounting, OLAP, deduction and comparative analysis.

Historically, the SNA is based on macroeconomic studies, with the first attempts made in Europe in the 17th–18th centuries (Zakharchuk & Pasinkov & Zavarzina, 2015). Since the 1940s the issues of the SNA development were brought up to the international level and now SNA has been developed methodologically by a number of leading international organizations including the UN, the IMF, the World Bank, the European Commission, the OECD. The SNA international standards were published in 1968, 1993 and 2008.

The development of the SNA follows the path of detailing accounts and clarifying the lump sum assessment and the recognition of various economic phenomena, such as scientific research, arms manufacturing, intangible assets, financial services, and holdings (Moulton, 2004). The work considers issues of globalization, offshorization, reflecting the use of R&D, post-retirement benefits, correct accounting activities of holding companies, accounting of financial intermediation, illegal activities, shadow economy, etc. (Van de Ven, 2008).

Peter van de Ven, one of the leading experts in the field of the SNA and a member of the 2008 SNA development group, notes that further work is needed to develop the link between micro statistics and national accounts, both for corporations and for households. This, in his opinion, should lead to meeting the growing and constantly changing needs of users, often associated with the need to obtain much more detailed data. The flexibility, required to meet the needs of users for new and well-defined types of analysis, is likely to become increasingly important (Van de Ven, 2008).

The official text of the 2008 SNA runs “there would be considerable analytical advantages in having micro databases that are fully compatible with the corresponding macroeconomic accounts for sectors or the total economy”. (SNA, 2008). “...The accounting system underlying the SNA derives from broad bookkeeping principles...” and “from economic theory” (SNA, 2008). A number of differences, particularly the difference in the structure of accounts, the pricing parameters in accounting models bound to the perspective of a single economic entity, hinder the integration of the accounting data into the SNA.

Historically, the methods of monitoring and recording economic events have changed in the accounting methodology. Up to the 19th century, accounting was dominated by personification; the accounting was conducted on behalf of the owner. In the 19th century, Francesco Villa considered accounting from the perspective of personalization. In the accounting, there was a division between the owner’s personal property and the property invested into the business. In 1922, William Paton was the first to view the accounting system from the perspective of a separate business, mainly a large corporation (Paton, 1922). Let’s call W. Paton’s concept of accounting ‘subject accounting’. In the work, published in 1929, N. S. Pomazkov proposed the concept of an “ideal balance”, which represents the balance of the world economy in an idealized form, and he considered accounting for an individual entity as an element of this global system (Pomazkov, 1929). Thus, we observe the evolution of the position of observation and reflection in the accounting of economic events: personified accounting, personalized accounting, subject accounting — global accounting. But the ideas of N. S. Pomazkov remained just as a concept, the practice of accounting was halted at the stage of subject accounting. This causes major problems in the organization of accounting in consolidated groups of companies, in particular, in holdings. This same feature of accounting hinders the attempts to combine accounting data in order to obtain the SNA without prior significant processing. Meanwhile, there are developing trends that contribute to the emergence of a unified system of accounting information. In the Russian Federation, such systems include:

1. Registration of the real estate property in the Unified State Register of Real Estate.
2. Registration of vehicles in the traffic police.
3. Automated VAT-3 control system. Online sales register.
4. Automated Tax-3 information system.
5. Unified State Automated Information System (USAIS) designed for the state control over the volume of production and turnover of ethyl alcohol, alcoholic and alcohol-containing products.
6. The project of unified labelling of non-alcoholic products and goods based on the principles of USAIS.
7. Bank settlement and monetary systems. Global financial monitoring systems for the banking sector.
8. Mercury automated information system, designed for electronic certification and ensuring traceability of goods under the state veterinary supervision.
9. Document flow (conclusion of electronic contracts) through authorized information platforms using an electronic digital signature.
10. System of professional registrars — holders of shareholders registers. Registration of participation in the capital of other organizations.
11. Automated accounting systems in aggregated business structures.
12. Trading and registration systems of the stock market. Information Depository system
13. Increasing the intensity of information exchange between individual information systems. Full coverage of the Internet. The expansion of communication channels and increase of their reliability. Development of data centres.
14. The development of the Internet trade platforms.
15. Cloud-based monitoring systems for logistics operations.
16. Cloud-based accounting systems. Cloud service for electronic document management between companies. Cloud service for the information support of local and network accounting systems.
17. Oligopolization of the automated accounting systems market in Russia. Connecting accounting programmes to the cloud service.
18. Online tax reporting and personal account practices.
19. Unified chart of accounts for budget organizations. Treasury-based execution of the liabilities. Centralization of accounting functions of state-financed organizations.
20. Unification of reporting data in XBRL.
21. Unified registers of the Unified State Register of Legal Entities, Unified State Register of Individual Entrepreneurs, Taxpayer Identification Numbers, Personal Insurance Policy Numbers.
22. Development and dissemination of the ontological semantic model of multidimensional accounting.

Novosibirsk State University of Economics and Management has developed an accounting model based on a multidimensional classification system (multidimensional accounting) in the context of the basic economic categories (Kovalev, 2016). Reporting in multidimensional accounting is done with OLAP (online analytical processing) tools. An unexpected result of this study was the shift from the observation of the economic subjects to the observation of changes in economic relations in general. This, in particular, significantly simplifies the processing of data from individual companies combined in a single database. In our opinion, this result opens up new opportunities for the development of the system of national accounts and their integration with the micro-level accounting system into a single information system.

The most general model of multidimensional accounting categories consists of the following elements: Object — Subject — Type of economic and legal relations (OST). These categories play the role of classification features. The values of these categories change during an economic event. In addition, the event as a whole has its own characteristics, such as a time point and the circumstances of the event. The basic scheme of multidimensional accounting with dimension tables is shown in figure 1.

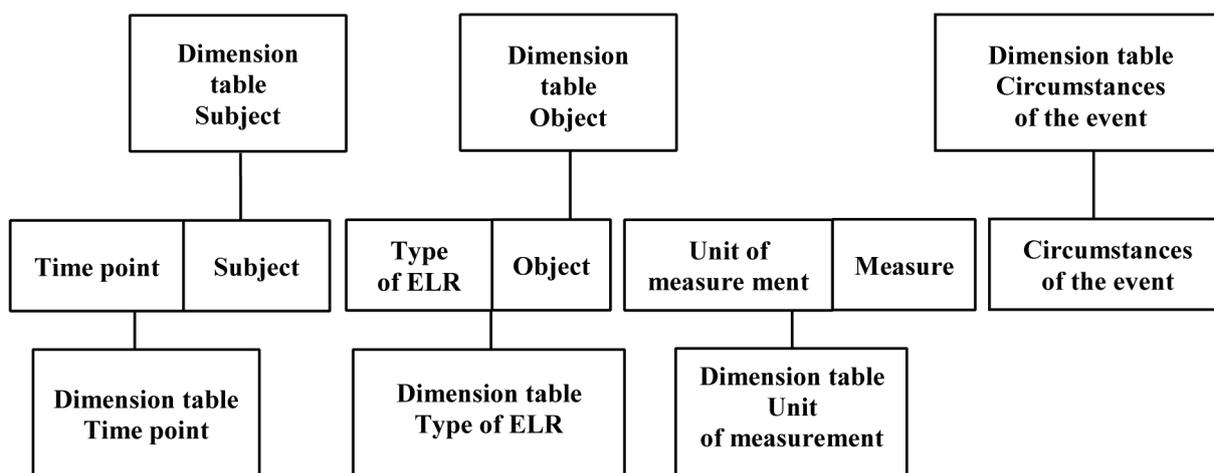


Figure 1: Basic diagram of multidimensional accounting

In multidimensional accounting the accounting data of individual entities can be combined together. In the resulting system, the events of object transfer between these economic subjects will have two identical double entries, which are abbreviated as follows (table 1).

Event number	Time point (TP)	Subject	Relationship	Object	Unit of measurement	Measure
1	Time point 1	Subject 1	Ratio 1	Object 1	Unit of measurement 1	«-» amount
1	Time point 1	Subject 2	Ratio 1	Object 1	Unit of measurement 1	«+» amount

Table 1: The basic structure of a double entry in multidimensional accounting

A line with a negative measure value plays a role similar to the account credit. A line with a positive measure value plays a role similar to the account debit. Multidimensional accounting is described in more detail in (Kovalev, 2016).

When consolidated financial statements are generated for these two entities, such transactions do not result in the movement of assets, since together they sum to zero. Similarly, the financial result obtained from transactions between the subjects of the same group is reset to zero. Thus, the turnover within the group and the intra-group financial result are extinguished.

At the same time, it is possible to consider the data of subjects together and prepare unified reports for them, but not to consolidate them. In this case, zeroing does not occur and the financial result of individual entities is added up. This important feature of multidimensional accounting makes it possible to generate reports for the groups of subjects belonging to the same region or country as a whole.

Generating reports using OLAP enables grouping the data in the context of all the considered features and their values. The decomposition of accounts of the Russian Accounting Standards made it possible to identify along with the OST the following features: business process, stage of the business process, contract type. A business process is a repeating cycle of events not bound to specific contractors. The calculation and distribution of the financial result are identified as a business process. Type of contract, such as sales contract, loan contract for performance of work, provision of services, etc. For the purposes of the SNA, the following attributes have been added: industry (sub-industry); region; various attributes of objects, etc.

In multidimensional accounting, the calculation of the financial result is presented as a stage of the business process, where the input is goods, works, and services at a prime cost and taxes, and the output is goods, works, and services at the sale cost. The combined set of features enables the recording of economic events in much detail, including those related to the calculation and distribution of financial results. Currently, the research of the possibilities of multidimensional accounting for the

development of the national accounts system is at the first stage. But even now, the multidimensional accounting system can reflect the elements of economic activity that are reflected in the SNA, such as: production, distribution, consumption and accumulation of assets, financial results, etc.

It should be noted that the system of the connection of the SNA and the MDAS does not address the issues of applying different prices, accounting for illegal activities and other similar discrepancies.

## CONCLUSION

A multidimensional accounting system based on multidimensional classification can serve as the basis for closer information integration of accounting systems of individual economic subjects and the SNA. In addition, the use of the multi-dimensional data structure provides users of both the SNA and the MDAS with a wealth of opportunities for analysing, detailing and summarizing data in accordance with individual current user requests.

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# POVERTY AND INCOME INEQUALITY IN SOUTH AND EASTERN EUROPEAN COUNTRIES

Alexandra Raluca Jelea\*

**Abstract.** *One of the main objectives of joining the EU was to reduce the economic gaps between southern and eastern European countries towards the countries of Western Europe. The paper is focused on how Strategy Europe 2020 is proposing to reduce the number of people that suffer or risk suffering from poverty and social exclusion by at least 20 million. There is a big discrepancy between levels of living in Europe, so the main Sustainable Development Goal which we are considering is “No poverty”, stressing the fact that there are also big differences between well-developed countries of the European Union. In the paper, we propose the analysis of poverty rate effects over the countries from South and Eastern Europe in comparison with Central and West Europe. The indicators used in the empirical study are GDP, unemployment rate, poverty rate, income, consumption rate.*

**Keywords:** *consumption rate, gross domestic product, income strategy, poverty rate, unemployment rate.*

**JEL Classifications:** *E01, M41, M48.*

## INTRODUCTION

This paper chose to work with data from countries that belong to the European Union. The data will be used to represent the phenomenon of poverty over a certain time frame. This paper discusses this theme for it is one of the most urgent issues the population is currently facing. Experts from different fields have attempted to define this phenomenon, in order to determine the causes and to find possible solutions.

The main objective of this paper is to find out if there are significant differences between poverty rates in the EU countries by identifying the influencing factors of the poverty phenomenon. Another goal of this research is to analyze the variables that are potentially linked to poverty. The variables used in this research are: GDP per capita, unemployment rate, income and consumption. This study distinguishes 4 groups in the EU countries and will analyze the poverty rate discrepancies, furthermore continuing with the analysis of the variables and the influences they have on the countries of the EU.

For reaching these objectives the paper is structured as follows: firstly, the theoretic effects of poverty will be analyzed in the form of a Literature review. The methods this study used are outlined in Data & Research Methodology. The Empirical study discusses and interprets the data conclusion.

## LITERATURE REVIEW

Europe has a plan in order to diminish poverty. They come up with The Europe 2020 Strategy, which is a ten-year program (2010–2020) whereby the European Union aims to create conditions for economic growth smart, sustainable and inclusive. The strategy was developed and adopted within the European Council on June 17, 2010, amid the crisis of deep economic and intense challenges of the long term, such as globalization, pressure on the use of resources and aging of the population. Europe 2020 considers the particularities of each Member State, while pursuing a coherent program of reforms, with the general aim of increasing Europe’s competitiveness, based on the strengths of the EU — single market, common currency, and common policies.

A research has been published by Eurostat on who poverty and social exclusion is affecting the most in the countries that are part of the European Union; another research is analyzing the relationship between GDP, income and consumption for 79 countries in a time range of 20 years (1980–2010). Apart from these researches, this paper is proposing to analyze the variables that are influencing poverty and to get a better understanding of how it’s influenced by market movement.

Poverty rate is the proportion of the population whose consumption (or income) is below the estimated minimum level in order to secure the necessities in life. This measure quantifies the proportion of the population that cannot afford to buy a basket of goods. When the analysis unit is

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a natural person, the poverty rate is also called the poverty index, because it is the ratio of the number of the poor to the total population (Lelkes, O., Zólyomi, E., 2008).

Consumption is the use by each agent and economic subject of income or part of it for the purchase of goods necessary to meet its basic needs. It is made up of all the material goods, services and information purchased by private households and institutions that are not aimed at obtaining profits and is structured into three main groups: consumption of immediate (current) goods, consumption of durable goods and services & information (Deaton, A., 1992).

Gross Domestic Product (GDP) is the monetary value of all the finished goods and services produced within a country's borders over a specific time period. GDP includes all private and public consumption, government outlays, investments, private inventories, paid-in construction costs and the foreign balance of trade (exports are added, imports are subtracted). GDP is seen as a broad measurement of a nation's overall economic activity — the godfather of the indicator world (Coyle, D., 2015).

The unemployment rate is the share of the labor force that is unemployed, expressed as a percentage. It is a lagging indicator, meaning that it generally rises or falls in the wake of changing economic conditions, rather than anticipating them. When the economy is in poor shape and jobs are scarce, the unemployment rate can be expected to rise. When the economy is growing at a healthy rate and jobs are relatively plentiful, it can be expected to fall (Orlandi, F., 2012).

Income represents an amount or a primitive value received from supplies of goods, labor and services (Galor, O., Zeira, J., 1993).

## **DATA & RESEARCH METHODOLOGY**

In order to answer the main question, this research will use several dependent variables that are closely related to the topic at hand (i.e. poverty rate, GDP, unemployment rate, consumption, income). The data from the year 2017 will be analyzed.

The main statistical methods used for reaching the proposed objectives are: principal component analysis and econometric modelling.

The identification of regional disparities is conducted by applying the methods of multivariate statistical analysis, the analysis of principal components. This descriptive method of multidimensional data analysis highlights the correlations among variables and the resemblances, respectively the differences among statistical units (Escofier, B., Pages, J., 1998). The advantage of this method is the synthetic graphical representation in a system of factorial axes of statistical units and statistical variables.

The factorial axes are linear combinations of statistical variables. To each factorial axis a part of the information contained in the initial data table is associated, also named explained variance (Bénczari, 1992). The factorial axes are classified in a decreasing order according to their discriminatory power: the first factorial axis explains most of the total variance, highlighting thus the greatest differences among the statistical units. Therefore, the interpretation of results will be conducted for a reduced number of factorial axes (Everitt, Dunn, 2001).

GDP	Percentage (%)
Unemployment rate	Percentage (%) from total labor force
Consumption	Percentage (%) from GDP
Poverty rate	Percentage (%)
Income	Percentage (%) at current price per head of population

*Table 1: The variables used*

## EMPIRICAL STUDY

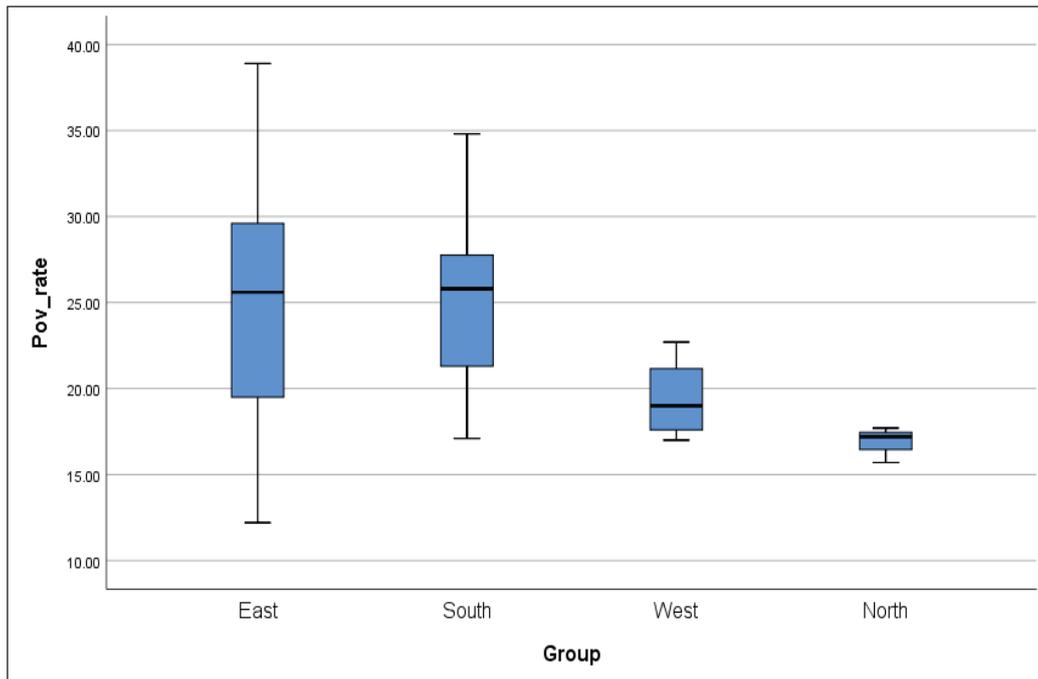


Figure 1: Boxplot representation of the groups of EU countries for poverty rate (%) in 2017

*\*own processing in SPSS*

This paper divides the empirical study in two parts. First part consists in analyzing the descriptive statistics for the indicators: poverty rate, GDP, unemployment rate, consumption and income for 2017. In the second part we estimate the econometric models for poverty rate considering the dependent variable income, the results are based on from the descriptive statistics.

### A. Disparities of poverty rate between the EU countries

In order to make the discrepancies between EU countries more observable, we split the countries in categories by the regions they belong. To highlight the poverty rate differences, we grouped the European countries into 4 groups, having a geographical criterion: East — Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia; South — Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain; West — Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, United Kingdom; North — Denmark, Finland, Sweden.

The differences between the four country groups are highlighted in the box plot diagram. Figure 1 shows that the countries of southern Europe and eastern Europe are characterized by the highest rates of poverty, while the group of the northern countries is characterized by the lowest rate of poverty. However, the group of eastern and southern countries is characterized also by the highest heterogeneity from the point of view of poverty rate.

The country with the lowest poverty rate from the southern group is Slovenia, with just 17.1 % poverty rate, while Greece is the country with the highest poverty rate, 34.8 %. In the group with the eastern countries, the country with the lowest poverty rate is the Czech Republic with 12.2 % poverty rate, while Bulgaria is the country with the highest poverty rate, 38.9 %. In the group with the western countries, the country with the lowest poverty rate is The Netherlands with 17 % poverty rate, while Ireland is the country with the highest poverty rate, 22.7 %. In the group with the northern countries, the country with the lowest poverty rate is Finland with 15.7 % poverty rate, while Sweden is the country with the highest poverty rate, 17.7 %.

From the statistics above, we can observe that the lowest poverty rate in the southern group of EU countries are at the same level with the highest poverty rates from the northern group countries.

### B. Identification of the main factors influencing the poverty rate

To identify the main factors that are influencing the poverty rate, we have applied the principle component analysis. The graphical representation of the position of countries and variables in the two factorial axis system is represented in the figure below. The two graphs are related, the first one emphasizes the position of the variables while the second one shows the position of the countries based on the variables from the first one.

The full results of the data processing can be found in Annex 1.

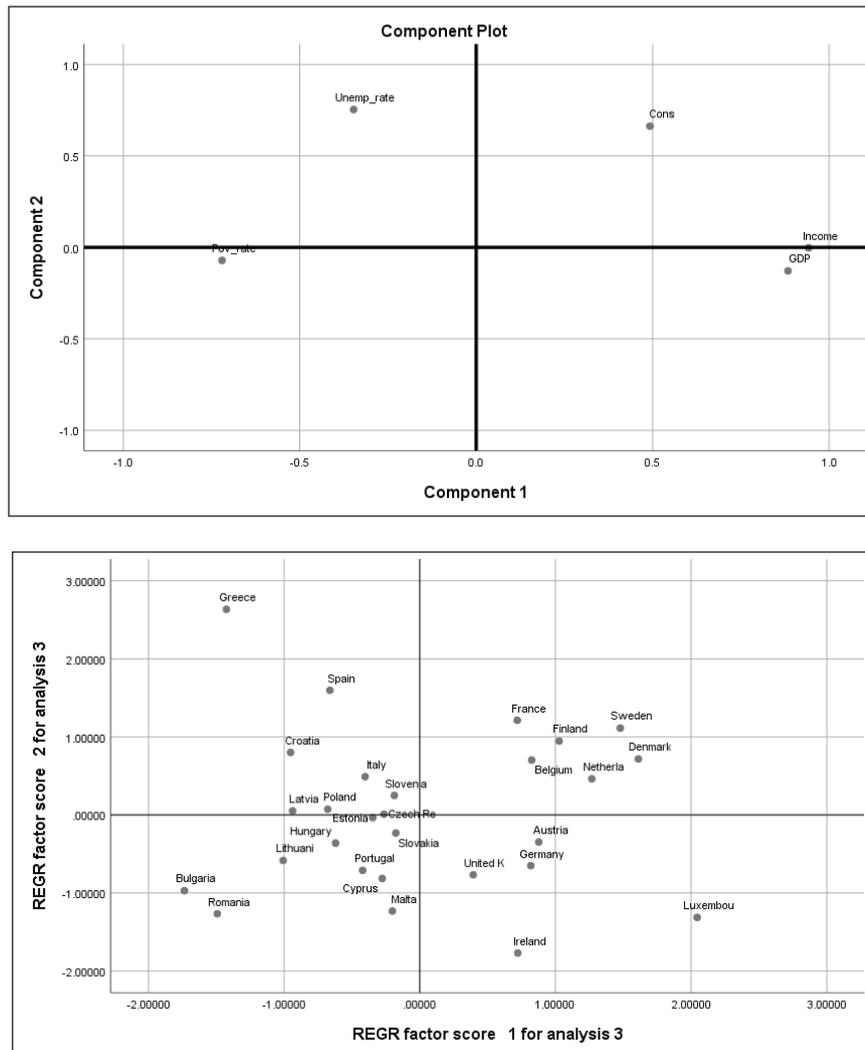


Figure 2: Principal Component Analysis applied for income for the 28 EU countries

*\*own processing in SPSS*

The first factorial axis represented on the horizontal (Figure 2), that is explaining 50,969 % of the total variance, shows a positive correlation between GDP and income and a negative correlation between these two and poverty rate.

Countries like Bulgaria, Greece, and Romania are characterized by high poverty rates and low values of GDP and income. The countries of northern-western Europe, Luxembourg, Denmark, Sweden are characterized by low values of poverty rate and high values of GDP and income.

The second factorial component represented on the vertical, that is explaining 20.55 % of the total variance, shows a positive correlation between unemployment rate and consumption. The highlighted

countries, Greece, Spain, and France are characterized by high unemployment rate and consumption. On the other side, there are countries like Ireland, Malta, Cyprus which have low unemployment rate and consumption.

Following the principle component analysis, it can be observed that the variables that explain the biggest differences between the countries of the European Union in terms of poverty rate are: income for the first axis and unemployment rate for the second axis. In order to measure the influence of these variables on the poverty rate, we will estimate in the following paragraph an econometric model considering the dependent variable, poverty rate.

### C. Econometric modeling

The results of the estimates are presented in this way:

<b>Model Summary</b>						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.515 <sup>a</sup>	.265	.206	5.82347		

a. Predictors: (Constant), Unemp\_rate, Income

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	305.262	2	152.631	4.501	.021 <sup>b</sup>
	Residual	847.819	25	33.913		
	Total	1153.081	27			

a. Dependent Variable: Pov\_rate  
b. Predictors: (Constant), Unemp\_rate, Income

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.337	3.448		7.638	.000
	Income	-.194	.074	-.461	-2.626	.015
	Unemp_rate	.246	.283	.152	.867	.394

a. Dependent Variable: Pov\_rate

Figure 3: The estimates of econometric model

*\*own processing in SPSS*

We can observe that the equation has the following form:

$$\text{Poverty rate} = 26.337 - 0.194 \text{ Income} + 0.246 \text{ Unemployment rate.}$$

The most important factor of influence, considering a 5 % level of significance on the poverty rate is income. Following the model, it means that increasing the incomes of EU countries will lead to a significant reduction in poverty rate.

When using this equation this would mean that with a 10 % increase in income, the poverty rate would decrease on average by 1.94 %. The significance threshold used in this model is 5 %.

## CONCLUSION

The problem of poverty can be eliminated. It will, however, take time, money, and a combined effort made by many people. The European Union already made decisions to diminish poverty. They come up with the Europe 2020 Strategy that want to focus on three main categories: firstly, they want to have smart growth, which means to develop knowledge, build innovation and increase education and the digital society, secondly, they want to have a sustainable growth and least, but not last, they want to raise the participation on the labor market by having an inclusive growth.

By 2020, the Commission aims to accomplish the following targets: have 75 % of the people aged 20–64 employed, invest in research and development, decrease school leavers and have less 20 million people suffering from poverty.

The poverty issue is not about who is affecting the most, but the factors that are contributing to the maintenance of it. To help diminish poverty focus should be on the repercussions of corruption and its effects over income. Reducing discrepancies between European Union countries will make the member countries believe in the EU and its directives.

The first part of the paper highlights that countries from South and East Europe have big discrepancies, in comparison with the North or Western ones. In the second analysis, poverty rate and unemployment have an indirect relation with GDP, income and consumption, meaning that countries with high poverty and unemployment rate have low GDP, income and consumption and the other way around. The last part shows that income plays the most important role in reducing poverty.

## ANNEX

*Annex 1: Results of the main factors influencing the poverty rate in 2017*

### Descriptive Statistics

	Mean	Std. Deviation	Analysis N
GDP per capita (current US\$)	32730.5332	21217.86259	28
Pov_rate	22.8321	6.53504	28
Unemp_rate	7.6114	4.04874	28
Cons	19.1336	3.31480	28
Income	27.6379	15.48168	28

### Correlation Matrix<sup>a</sup>

		GDP per capita (current US\$)	Pov_rate	Unemp_rate	Cons	Income
Correlation	GDP per capita (current US\$)	1.000	-.433	-.194	.172	.960
	Pov_rate	-.433	1.000	.249	-.371	-.493
	Unemp_rate	-.194	.249	1.000	.020	-.210
	Cons	.172	-.371	.020	1.000	.371
	Income	.960	-.493	-.210	.371	1.000

a. Determinant= .021

## KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.453
Bartlett's Test of Sphericity	Approx. Chi-Square	94.244
	df	10
	Sig.	.000

### Communalities

	Initial	Extraction
GDP per capita (current US\$)	1.000	.796
Pov_rate	1.000	.524
Unemp_rate	1.000	.688
Cons	1.000	.681
Income	1.000	.887

Extraction Method: Principal Component Analysis.

### Component Matrix<sup>a</sup>

	Component	
	1	2
GDP per capita (current US\$)	.883	-.128
Pov_rate	-.720	-.071
Unemp_rate	-.347	.753
Cons	.492	.663
Income	.942	-.002

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.548	50.969	50.969	2.548	50.969	50.969
2	1.027	20.550	71.519	1.027	20.550	71.519
3	.878	17.561	89.080			
4	.528	10.569	99.649			
5	.018	.351	100.000			

Extraction Method: Principal Component Analysis.

*\*own processing in SPSS*

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# INNOVATIVE MODEL OF A UNIVERSITY DEPARTMENT: STRATEGY AND PROJECTS (IT-SPHERE EXAMPLE)

Andrey Pestunov\*, Egor Cheglov\*\*

**Abstract.** *The technological progress and other social factors cause large-scale changes in society in general, and in higher education in particular. Traditional models of training and working processes in universities became obsolete, and as a result they hinder effective interactions between students and teachers and do not facilitate the realization of their full potential. In this paper, we propose an innovative ‘company- university department’ model which has a chance to increase its effectiveness and opens up new horizons for the educational process. This model contains several internal projects which are supposed to be core activities determining all the work flow in the department. These projects are ‘Branded tasks’, ‘Real Internship’, ‘Competences’ and ‘Project office’.*

**Keywords:** *brand, company-university department, competences, department, education, education quality, innovations, internship, university.*

**JEL Classifications:** *I25, A22, P41.*

## INTRODUCTION

Technologies of the educational process in higher education institutions and models for organizing the activities of its structural divisions are inevitably evolving over time. Under these conditions, universities are trying to develop new forms of their effective existence in the modern world. The article [1] puts forward and describes a concept of an entrepreneurial university as one of the possible forms of a dynamically developing university that meets the requirements of the time. In the article [2] it is proposed to evaluate the universities’ intellectual capital through the prism of their strategy, as well as approaches to determining the place and role of economic universities in the educational space of Russia. The author [3] focuses on the complexity, non-linearity, multi-connectivity and multi-dimensionality of the structure of education and discusses it in the framework of synergetic representations. The article [4] notes the importance of university brands and suggests models describing their building. The research [5] offers tools for strategizing personnel training in the context of the regional economy transformation. The articles [6, 7] are devoted to the analysis of cognitive features that can be taken into account when developing approaches to learning. In addition, some articles address the issue of improving specific educational methods in the context of digitalization [8–10].

As a result of the rapid transition of society to the post-industrial era, new professions are constantly emerging, some of them root from certain activities that were previously considered an entertainment or a child’s play. For example, at the initial stage of social networks development, not everyone saw the potential of their application in business, but now entire groups of people use them as the primary means of professional communication, and marketers — as one of the most effective tools for promoting products and services.

As a result capable junior students are able to perform a number of tasks that have value to the real economy.

Thus, junior students can, for example, be involved in the design of landing pages, the development of simple web applications, testing software, and in some cases even negotiate with customers. Thus, when completing real tasks instead of some laboratory and practical tasks, students will be able to study and work at the same time. This has become possible mostly due to the rapidly developing technologies.

Being aware of these challenges, universities are trying to develop and apply new development models that meet the requirements of the time. The described possibility of attracting students to the implementation of practically significant work is just one of many opportunities, paving the way for the transformation of the university and its structural divisions. The article proposes one of the

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possible models of the department, which has a chance to improve the efficiency and quality of training, as well as to bring additional meanings to the educational process and give it a lost integrity.

## **STRATEGIC GUIDELINES**

When implementing the company-department model, the following strategic guidelines should be followed.

### **Guideline 1. The Integrity**

When referring to the concept of “integrity” and the imperative of striving for it in the development of the company-department model, two aspects are regarded. First, the model emphasises that the educational process should fully meet the requirements of the market and employers, eliminating the division between what is taught in the classroom and what is actually asked of potential employees or required when building their own businesses or startups. The link between the educational process and the real market should not only be postulated, but also be manifested in all educational activities. Second, any work done by a student or a teacher should be viewed through the prism of the maximum possible number of business processes and it should have value in various contexts.

### **Guideline 2. Customers**

The company-department model implies a certain desire for autonomy and initiative, which should be manifested in the fact that the department should understand who their customers are and under what circumstances they work, and also be aware of and responsible for effective and mutually beneficial work with the customers. In different contexts, faculty, students, external partners, and even administrative divisions of the university can act as customers of the company-department.

### **Guideline 3. Competences**

The most important strategic guideline, which should be shown in all business processes of the department, should be the focus on the development of popular competencies. And here we should talk about both the competencies demanded by the market and the competencies necessary for the effective work at the university. For example, computer literacy should be a core cross-cutting competence. Guided by this guideline, we can formulate the mission of the company-department model: “University teachers know what competencies are needed for real business and government structures, and they are able to apply them and share them with students”.

### **Guideline 4. Brand**

The department should have its own recognizable brand that reflects the guidelines outlined above, which will effectively attract customers and, in particular, help improve the quality of applicants entering the areas, the department teachers. The department should strive to ensure that the created brand is recognizable in different target groups, but it can be multi-faceted, reflecting the interests of each group. However, when positioning a department within the university, especially in a department-centered system, where the department is a more significant and stable unit than the faculty, undoubtedly, the brand should be mainly based on the concept of “department”.

### **Guideline 5. Integration**

In modern conditions, when many processes have become more complex, the implementation of large projects is impossible without the cooperation of several stakeholders with different competencies and resources. Therefore, the department should not close down and try to implement complex large-scale projects alone (including shutting off the help of other departments competing within the university), but participate in integration processes if necessary. At the same time, to be integrated into the contemporary educational system the department should preserve its identity and demonstrate genuine interest in the process and results.

## **PROJECT OFFICE FOR THE IMPLEMENTATION OF PRACTICALLY RELEVANT ORDERS**

The department should have a project office for solving significant practical tasks both for the external orders, and for the internal needs of the department and the university as a whole, in particular,

for the development of its infrastructure. It is assumed that the main performers of these works are teachers and students, and the preferred configuration is as follows: teachers act as task or project managers, and students act as performers. This approach will ensure close interaction between the teacher and the student, providing an opportunity for both parties to acquire and improve teamwork skills and other soft skills. In addition, it will contribute to strengthening the teacher's authority in the eyes of the student, thus increasing the level of trust and, as a result, the efficiency of training.

At the same time, at the student's choice and the teacher's approval, the results of the work can be credited as laboratory and practical tasks, as well as taken into account during the midterm assessment in specialized disciplines or internships specified in the curriculum.

The functioning of the project office at the department strengthens its integrity following one of the strategic guidelines, combining the acquired knowledge and practical activities.

### **BRAND NAME PROJECT TASKS**

The educational process of the department teaching specialized subjects, developing applied competencies, should largely be built around the tasks that are set by practitioners — potential employers — or around the tasks that arise in the department's project office while executing customers' orders. The tasks can be on various topics and be of various forms, including adapting tasks from the real practice of government and commercial organizations, as well as tasks offered to applicants at interviews.

The completion of these tasks in the educational process will help achieve the following results:

- students get acquainted in absentia with the company, which has provided the case study for the task, try out real tasks, thus, the students are able to make a more informed career choices;
- students are more motivated when doing a branded task, since they know that this is an almost real task, which is not outdated, not formulated by teachers and not based on abstract reflections;
- students are able to evaluate their strengths and look at the branded task through the prism of their interests in order to understand if the type of activity this task belongs to is suitable for them;
- to a certain extent, students gain work experience, which will make it easier for them to get a job of their interest and quickly integrate into the production process.

### **TOPICS OF THE BRANDED TASKS**

In general, the topics, covered by branded tasks, can be very different but the most interesting are the tasks that are related to the subjects the department teaches. For the departments of information technologies, the tasks taken from the practice of IT companies are preferable. The following topics should be mentioned:

- development and testing of software, computer games, mobile and web applications;
- cyber security;
- business analysis and system analytics;
- computer graphics, animation, and 3D modelling;
- internet marketing, contextual advertising;
- configuration, administration, and support of IT infrastructure, computer networks, and web servers;
- data analysis tools;
- problems related to algorithms, data structures, game theory, and optimization methods.

### **THE FORMAT OF THE BRANDED TASKS**

The main requirement for the tasks within the framework of a branded tasks project is that the task is compact and easy to understand. It should be easily verifiable and should not involve the deployment of a complex infrastructure. The following main types of tasks are offered.

“Interview”. It is a short practical task that resembles the form of tasks given to applicants during interviews. It is assumed that the student is able to complete this task in 30–60 minutes.

“Technical task”. A practical task, similar to either a test task offered to applicants for the remote execution, or an adapted version of a relevant technical task or part of it from the company’s practice. The task should be done using computer skills.

“Laboratory work”. The work should contain a step-by-step description of how to solve a typical task from the company’s practice. During the process, the student should feel themselves in the shoes of an employee of the company that provided the task.

“Typical task”. When setting this type of task, a brief theoretical reference should be provided. The reference should contain several typical tasks that can be performed following this reference.

#### Real internship and anchor companies

Another important project of the department should be the Real Internship Project and the cooperation with anchor enterprises, having relevant practical competencies.

The desired state to be achieved in the Real Internship Project can be described as follows. External companies regularly make requests to perform some real tasks, and they are eager to invite students for the internship in IT areas. At the same time, the company must appoint an internship mentor who sets the tasks. Students are interested in such cooperation and readily respond to the information about such internships. Students are given the opportunity for further employment.

In addition, students should regularly attend lectures and workshops given by representatives of real business, where potential employers talk about the features of work in the field they represent and demonstrate certain aspects.

## CONTINUOUS STUDENT PROJECTS

The department should have permanent student teams, united by a common project. Such teams are more than just student societies in their traditional sense. Teams should take an active part in the life of the department and the university as a whole, but not just limited by the preparation for targeted events. Such teams can participate in exhibitions, educational forums, scientific festivals, and workshops. Students from these teams can participate in student self-government and serve as a model for other students.

## CONCLUSION

The implementation of the company-department model described in this article is an ambitious task that requires the involvement of the team and the availability of appropriate conditions. Strong regulation of the educational sphere sometimes hinders innovations, but in a market economy, such changes are fundamentally possible, especially in the field of information technologies. As noted above, students who are able to contribute significantly to the development of the department can also boost changes. Though the department, being a university structural division, is not an independent unit, and largely depends on administrative divisions of the university, the department can achieve a significant increase in efficiency and its autonomy in case of the successful implementation of initiatives aimed at attracting funds.

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# 21ST CENTURY ACADEMICS IN A CORPORATISED VORTEX

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**Abstract.** *South Africa has endured a compound transformation within higher education. To transition from 39 racially segregated higher education institutions to 26 fully inclusive public institutions. South Africa was required to comply with global best practice developments which included corporatising institutional structures and processes. Currently, South African higher education is best described as puzzle pieces, i. e. large classrooms, decolonisation and employable 4IR workspaces. With a plethora of changes, what is the impact on academics who are the custodians of managing the process? The changing institutional cultures within short spaces of time would impact on the academics in public higher education institutions. This paper explores the transition of institutional culture as a basis of a corporatised structure and its impact on academics. Corporatisation, as a fundamental part of institutional culture, has been instrumental in guilty of the challenges faced by academics. These changes within structures and processes of South African higher education has a direct impact on workload, research productivity, and family life. This paper utilised twenty lived experience open-ended interviews with female academics from the University of KwaZulu Natal, a public higher education institution. Their experiences are meaningful by way of their operative role in the change of institutional culture as a result of the amalgamation of varying campuses which constituted a merged university. The evidence is fortified by a theoretical framework on the social construction of reality which offers context to the corporatised institutional culture and its impact on gender. This study articulates the significant structural changes brought about to human capital as well as organisational structures. These have fervently impacted on academic outputs, policies, processes, conditions of service, and promotion criteria. The results support perspectives that these correlations were predominant explicitly affecting academic teaching, research and quality of life.*

**Keywords:** *academic freedom, corporatization, higher education institution, institutional culture, transformation.*

## INTRODUCTION

While higher education globally transitioned their structures and curriculum towards the fourth industrial revolution (4IR) trends, South African higher education experienced a complete multitude of transformation. Progressing from 39 separatist apartheid structures which were differentiated by race, higher education transformed in 2004 into 26 fully integrated institutions. South African higher education will never be the same. A system which needed to align with global higher education trends with the mutually inclusive system, decolonise the curriculum and align with 4IR trends. The demand for student seats in higher education at this time was inadequate for universities to accommodate. The greatest challenge was the amalgamation of different universities with completely varied institutional cultures which founded on racial division. Several consequences were resulting from the merge and the reorganisation of higher education in South Africa. This paper will delve into one aspect, which is the impact on female academics.

## SCHOLARSHIP REVIEW

### Corporatisation in higher education

Institutional culture in the academy has been consistent with flexible working hours, aligned to academic freedom and a domain overtly ruled by the old boys' network (Ladd and Lipset, 1975; Doumani, 2006; Schwartz, 2010). Globally, higher education followed a structure of non-profit (research) universities or for-profit (teaching) universities (Donoghue, 2008). Within the for-profit environment, traditional university professors would not survive due to the lack of control of academic freedom. These university structures are managed in the same manner as corporate boardrooms with the senate who controls the decision making power and increases student intake which translates into higher profits but also higher workloads for academics (Aronowitz, 2000).

South Africa transformed its higher education structures in 2004 in order to make them mutually inclusive of all races in a post-apartheid and democratic environment. In South, Africa, universities are not differentiated into teaching and research universities, and both roles are fulfilled at one institution. To be specific but not exclusive, every academic is accountable for a number of activities including teaching, administrative workloads, research quotas, research supervision and community engagement.

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Globally academics are infuriated by structures of corporatisation. “Corporatised university is no university, or corporate values are not academic values” (Steck, 2003: 66). Neumann and Guthrie (2001:4) concur that academic activities now “become calculable, marketable, and tradable under the commercialised and managerialism regime in which universities must now operate”. Within the South African context, multi-levels of institutional culture transformation were taking place. However, the one with the most exigent consequences was that of the new-fangled corporatised structures (Cloete, Maassen, Fehnel, Moja, Perold and Gibbon, 2004).

Immediately larger numbers of students were registered to align with more significant institutional revenue. According to Meyer (2002: 537) “bureaucratic organisations, while rational and efficient, were also prone to iron cage rigidity”. From an academic focus, the focus in higher education had revolved around business function, management of budgets and the efficiency of institutional structures. The traditional academic Dean was now the Executive Dean (Cloete et al., 2004).

### **Academic Workload & Research Output**

The corporatised demands and rigidity of structures by its very nature threatened the innovation and flexibility required by academics in higher education (Meyer, 2002). The outputs required by academics were formalised in detailed performance management processes. The flexible workday has the long past, as academics are accountable for increased academic loads. The successful and continuous completion of such duties would lead to promotions. However, this became more challenging as the roles and responsibilities became higher. The traditional higher education committees are being replaced by hierarchical management structures, and consultative committee-type decisions are being substituted with authoritarian choices made by a select group. The management of higher education institutions is being compared to the power of capitalist enterprises (Neumann & Guthrie, 2001).

The registration of higher student numbers translated into greater teaching loads, marking, student consultations and research supervision (Seedat-Khan, Ramnund-Mansingh and Johnson, 2020). Excessive amounts of reporting need to be completed, in terms of measurable productivity units, research outputs, research supervision and student throughput (Bentley, Habib and Morrow, 2006). Gappa and Austin (2010: 15) contend that “academic freedom is the lifeblood of faculty work. The right to freedom of intellectual expression and inquiry must be extended to all faculty members, regardless of their appointment types”. Research undergoes asphyxiation as academics lose control of research areas which now become defined by government authorities, industries and funding structures (Cooper, 2011). One needs to consider that professional development and promotion of academics becomes increasingly difficult as they struggle to complete day to day tasks within the newly defined workload imperatives.

### **Work-life balance**

Work-life balance of academics has traditionally rated high due to the habitual academic space with increased academic freedom and flexibility. If the mandated workload is expected to meet office hours, it have to be extended. The overflow into the home impedes on the family space. Gender divisions come into play at this juncture. While men are able to go home and continue the surfeit of tasks, women often have to tend to the home and children before being able to continue their work (Ramnund, 2019). This places a significant burden on female academics which inevitably impact their health (Asakura and Chen, 1993) and their research outputs which directly encumber their promotion in academia. Female academics continue to embrace both paid and unpaid work at the expense of their career development.

## **THEORETICAL FRAMEWORK**

The impediments to academics brought about by the corporatisation of higher education institutions are underpinned by the social constructionism theory explicitly focusing on the construction of institutions and the gendered constructions of reality (Berger and Luckmann, 1979). Ore (2000: 8)

iterates that “an institution is a set of rules and relationships that govern the social activities in which we participate to meet our basic needs”. Roles and identities are shaped by the manner in which social institutions construct realities. Corporatised functions as a change in institutional culture as well as the traditional old boys’ network have shaped the framework of higher education. Intersecting these constructions are the gender constructions which locate women traditionally in the home as domestics and caregivers.

## **METHODOLOGY**

A qualitative study was conducted with twenty female academics from the University of KwaZulu Natal. They were selected from the staff lists on the university website. Participation in the study was voluntary, and the anonymity of participants was preserved. The researcher engaged participants in a sixty-minute lived experience narrative regarding the impact of the merged institutions. Interviews were recorded on a dictaphone, which was consensual. Informed consent forms were explained by the researcher and voluntarily completed by the participants. Data were analysed by means of theme identification.

## **DISCUSSION OF FINDINGS**

### **Corporatisation**

The merger of the five institutions was an opportunity to create a new unified institutional culture. However, each individual campus held on steadfast to their previous institutional identity. Many academics, who disagreed with the merger, chose to leave the institution. Tierney & Lanford (2018: 2) indicate that it is a straightforward process where “every institution depends on a certain level of fidelity to shared values, assumptions, beliefs, and ideologies; a socially constructed view of institutional culture does not rely entirely on agreement among individuals. It acknowledges the pluralistic, occasionally cacophonous, landscape of the contemporary university, where experts are brought together from a wide range of backgrounds and disciplines”. In unpacking the narratives, it soon became clear that the institutional culture whether previous or current was insignificant. Participants confirmed that “it was a new autocratic way of doing things”. Bitzer (2009) affirms that institutional culture in a merge process can be alienating or accommodating. Participants in the study confirmed that the process was two-fold. As policy and conditions of service changed, they were asked for comments, feedback and recommendations on the draft policies. This appeared to be a simple process as none of these was taken into consideration, according to the academics interviewed in the study.

The new processes focused on measured productivity—some of the policies impacted directly on university benefits and promotion guidelines. Institutional structures had shrunk. All of the research participants agreed that the fact that the university was now managed as a revenue-generating business, it created discomfort among academics as it impacted on several levels of the conditions of service. The institution became bureaucratic in the dissemination of revised policies and the leadership monitored and managed these in an autocratic manner. Participants confirmed that communication was instructional and management behaved as if they were invincible.

The new policies had impacted on the duties of academics thereby increasing their workload. It had further implications for the workplace environment. Recruitment policies aligned with the Employment Equity Act 55 of 1998 were interpreted differently by the university. As per the directive from the then vice-chancellor, all appointments were to be filled by African female candidates. This contravened the Act which identified previously disadvantaged individuals as women, disabled and black individuals defined as African, Coloured, Indian and Chinese. This directive influenced the workplace environment negatively and demotivated other faculty members. If no suitable African female candidates were found, the increased workload fell onto the shoulders of the current academic staff. They were transforming the merged institution into a corporatised working structure directly related to the substantial staff turnover, as commented by research participants, specifically at Medical

School, where academics and clinicians took up portfolios internationally or embarked on private practice ventures.

### **Academic Workload & Research Output**

There is a direct relationship between the corporatization of universities and the erosion of academic freedom (Doumani, 2006; Donoghue, 2008). This was evident in the study. Corporatised structures and policies translated into the following with respect to academic workload and research output. The new conditions of services remanded academics to university work for exceedingly long hours. Traditionally academic freedom steered away from the 8 am to 4 pm workday. With corporatised structures, academics are completing a full workday and continuing to work from home.

Due to the focus on revenue generation, some first-year classes register numbers up to 1500 students, which translates into the teaching of a single class several times over (Seedat-Khan, Ramnund-Mansingh and Johnson, 2020). There is a direct implication on marking of assessment and student consultation. Teaching hours as per the conditions of service and promotion policy have significantly increased. Administrative duties are also added to the list of burdens on academics in corporatised institutions. With skeletal structures, many positions for administrators which were seen in the traditional university spaces had now diminished (Ramnund-Mansingh and Seedat-Khan, 2020). Academics have to complete the data capture of marks; other required reports as well as be part of different university committees. With vacancies not being filled, especially in areas of scarce skill such as Science, Engineering and Technology, and current academics filling in for their colleagues who are sick, on maternity leave or have personal family commitments, it places added strain on the academics.

Research requirements are two-pronged. Academics have to supervise postgraduate research as well as embark on their own research journeys and publications. While Marxist theories ring clear of the bourgeois and proletariat in this corporatised university, there exists a further divide within the academic ranks. The traditional old boys' network rears its head, whether in a conventional or corporatised institutional space. They capitalise on every opportunity. According to accounts from research participants in the study, postgraduate research supervision was disproportionately allocated. The male academics were predominantly assigned the doctoral and masters students, which had a more significant opportunity for publication outputs.

Moreover, academic committees are monopolised by male academics who are instrumental in module allocation and research supervision allocations. This directly impacts on the time and effort required for research outputs. Research participants confirm that male colleagues were supported to produce research and apply for grants, with minimal teaching workloads.

### **Work-life balance**

The relationship between corporatised structures, workload and research has the most significant impact on female academics. With the revised workload, all academics continue to work at home past the traditional workday. With female academics, this becomes increasingly difficult as they have to tend to the family and children after a full workday. Two of the research participants indicated that they could quickly achieve their work goals from home as they lived alone with no partner and children who were grown and lived independently. Another two research participants were primary caregivers to their aged and ailing parents. Female academics with young children could only begin their overflow of office work after 10 pm when the children are asleep. Exhaustion compromises research outputs.

The academic requirements for lecturers as well as promotion requirements placed great strain on female academics. All academics are required to complete a PhD, but this becomes “an impossible task”, according to research participants who are struggling to find adequate time in the day to complete required tasks. Therefore, competing with men for promotions is an unequal playing field. Men are able to spend time with funding proposals as well as research outputs.

African women specify that the impact of their cultural commitment on their time required working at home. One of the research participants confirmed that she had to take in two of the children from her village who were now attending university nearby. In addition to her own family, chores, cooking and tending to her children, she has to manage children as well. Ranga, Gupta and Etzkowitz (2012: 14) concur that “The academic life is a long hour’s culture that makes the work-life balance difficult, as well as an implicit rule of exogamy at key transitions points in the academic career, especially in the US, where it is expected that for the highest academic careers one has to move from one academic site to another to secure maximum potential advancement. This choice is socially less available to women than to men”.

These consequences directly impacted stress levels of these female academics. In seventeen of the research participants, these stresses contributed to medical ailments. Depression and cardiovascular disease were among the most common (Asakura and Chen, 1993). Job dissatisfaction, job insecurity and an overload of work functions create stress-related medical illness (Barkhuizen and Rothmann, 2008; Oosthuizen and Berndt, 2008).

### **Impact of COVID-19**

The onset of the global pandemic of COVID19 has exacerbated the gender divide in academia. The impact of personal progression and promotion is severely impaired by the circumstances of the pandemic. While academics had to adapt to the online education space, the focus was on learning the tools to ensure that students got maximum benefit from the teaching, and assessments had to be revised to accommodate for online transmission. This was challenging for female academics, who had no defined workspace. The overlap of chores, cooking, taking care of children, home-schooling children and elderly whilst navigating around new tools created a severe strain on female academics.

Torrano and García-González (2020) confirmed that female academics experienced back pain, visual fatigue and burnout. They were challenged with the blurring of roles and mental exhaustion. “Specifically, it is viewed as a possible hazard because of the excessively rigid scheduling in online teaching and the bureaucratisation of the evaluation systems that cause the pace of work to be imposed by the educational system instead of workers” (García-González et al., 2020: 9).

While research outputs and funding applications were lower for female academics than their male counterparts, these numbers reduced significantly during the early months of the pandemic and continue in this vein. Publication statistics with female academics as the first author reduced from 34 % in February 2020 to 26 % in May 2020 (Matthews, 2020). The pandemic would impact on student supervision. Many research projects would have to be halted or revised due to data collection tools and what may be possible during pandemic times. This would have a direct implication on student supervision for research.

Research funding applications plummeted more than usual during COVID19. “A survey of about 4,500 principal investigators in the US and Europe in mid-April, which found that having a child under five was the biggest factor associated with a drop in research hours. Women were more likely than men to have young children, partly explaining why they reported a larger drop in research time” (Matthews 2020).

## **CONCLUSION**

Although a number of challenges experienced by the academic gender divide have been part of the university structure for decades, however, the 21st-century academic is faced with an exacerbated series of challenged set forth in motion by corporatised university structures. The impact of these is insurmountable. The expectations snowball at every level and prove to be more demanding for female academics. Corporatised structures globally contended with negative effects on academic roles, research outputs and work-life balance. This traps female academics in lower academic ranks indefinitely based on institutional systemic challenges that arrest their promotion.

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# MARKETING PERCEPTIONS BY ALBANIAN STUDENTS

Armira Lazaj\*

**Abstract.** Albania opened the doors to the world, by changing the totalitarian regime (1990), in all areas and therefore changes in all areas of life such as economic policy, etc were noticed. With the liberalization of the economy in Albania the competition in the market began to work. The transition from centrally planned economy to market economy many transformations have been part of challenges to areas such as political, economic, social, legal, etc.

Marketing is a discipline implemented in Albanian Universities in 1993. This new entry was late in our country because Albania was under a communist regime. Looking toward the future, Albania is focused on supporting the economic growth in a difficult environment. Intensive modes must be viable alternatives to traditional semester long classes, although they do potentially have increased costs.

The study investigated how undergraduate marketing students perceived a variety of marketing subjects of study that are part of business Faculties and specifically of Management Marketing studies, students that have the possibility to study the subjects like: Introduction to Marketing; Marketing Directions, Distribution Direction, Marketing Strategy, Marketing Services, International Marketing, Organizational Behavior, Customers Behavior, Promotion, Brand Management etc.

The primary purpose of this research is to examine the perceptions of selected students regarding the marketing perception., also This paper suggests that the use of students is appropriate in modeling attitude behavior relationships and scale development This research will be enriched with a lot of statistical data collection and it will be closed by the conclusions.

**Keywords:** marketing; perception; customer/consumer; student.

## INTRODUCTION

Nowadays we can find a variety of Marketing Subjects of study that are part of business Faculties and especially of Marketing Management studies. Students that are part of those faculties study the subjects like: Marketing Directions, Distribution Direction, Marketing Strategy, Marketing Services, International Marketing, Organizational Behavior, Customers Behavior, Promotion, Entrepreneurship and Innovation, Brand Management etc.

Those are some of the most important subjects that are very necessary to study Marketing. A lot of manufacturers today are aware enough to involve in their activities Marketing Strategies in this way, and also have the opportunity to exploit into their everyday milestones some of the most important elements of applied Marketing like: Promotion, Publicity, and Organization of the distribution system. We can't say that the importance of the Marketing departments on companies or in even applied Marketing on Albanian Universities business hasn't had great results.

If we refer to one of the most important marketing strategists worldwide (Philip Kotler), quotes he expressed that: "Marketing is a race without a finishing line", this expression can serve to let us know that also Albanian Marketing Development is just into the first revolutionary steps, it needs still time to become the Real Applied Marketing.

My paper will analyze the Albanian situation based on students' perception about Marketing. This paper suggests that the use of students is appropriate in modeling attitude behavior relationships and scale development.

## RESEARCH METHODOLOGY

**The goal, objectives:** My research reveals a healthy but dissonant interaction with direct marketing on the part of the students, and this can be summarized in terms of a continuum reflecting the knowledgeable student.

On the one hand, there is a surprising level of marketing knowledge which is manifested in marketing terminology and clear understanding of the principle of targeting. On the other hand, there is much misunderstanding — the perception of one single database where all our lives are stored.

This means that consumers need to perceive that they have control over what they receive, what happens to their personal details, and over interaction with marketers<sup>1</sup>.

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<sup>1</sup> Evans Martin, Patterson Maurice and O'Malley Lisa: The direct marketing- direct consumer gap: qualitative insights. P. 6.

The study, initially a series of in-depth interviews, was conducted in an effort to gather an ‘authentic’ understanding of consumers values, their thinking on relationships, and their experiences of direct marketing.

The need to explore consumer reactions to any form of marketing is central to the marketing concept<sup>1</sup>.

The objective and primary purpose was to describe the perceptions of students towards marketing education, so the research questions of this study are: “What do students think about marketing disciplines” and “How have they understood (perceived) it”.

The second purpose of this study is to examine the perceptions of selected university students regarding the marketing perception.

**The third purpose of this research is to:** (1) describe the research methodology of this study, (2) explain the sample selection, (3) describe the procedure used in designing the instrument and collecting the data, and (4) provide an explanation of the statistical procedures used to analyze the data.

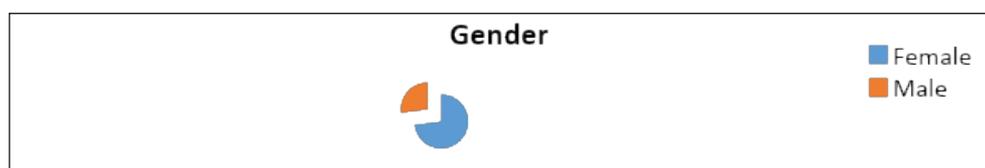
### DATA ANALYSIS

Many changes have occurred in the context of marketing education during the past decade, including the increased use of new technology-based and experiential pedagogies. To update the understanding of how students in advanced marketing courses perceive marketing lecturers in this new context, a replication and extension of student perceptions of learning activities was performed with survey responses from 550 students at five universities.

I will be referring to those steps on how to get a better view nowadays, thoughts about marketing from the students of the faculty of economics, University of Tirana; University of Durres “Aleksander Moisiu”; University of Elbasan “Aleksander Xhuvani”; University of Vlora “Ismail Qemali”; “Tirana Business University College”, Tirana Albania (2018).

- First of all, I prepared a questionnaire composed of 24 questions about marketing.
- I rated those questions about marketing from the most simple one into the most difficult question.
- After preparing the questions the next step was to choose the students to share those questions.
- I decided that the Bachelor’s and Master’s students that will be involved in this study will be majoring in Economics Sciences like Marketing Management, Finance, Banking, and Finance Accounting.
- I distributed 550 questionnaires, 110 for each University.
- In total there were 257 questionnaires completed by bachelor students and 233 by master students.

**Findings:** 490 of questionnaires proved valid, a total of 356 students (gender female) and 134 (gender male) were surveyed.



Level of education:

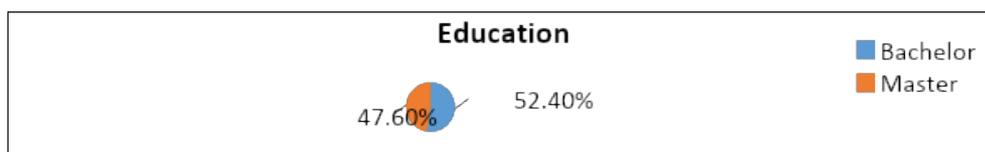


Figure 1: Gender and education level of the surveyed students

<sup>1</sup> Qualitative Market Research: An International Journal; Vol. 4. Number 1. 2001. # MCB University Press ISSN 1352-2752. P. 17-24.

We have also prepared Chi-Square Tests.

The table below shows that marketing strategy and marketing strategy through the Internet is perceived as a way for companies to connect directly with consumers depending on each other after Asymp value. Sig. (2-sided) is  $0.07 < 0.05$  which indicates that these variables are dependent or their par bond is statistically significant.

Does a Marketing strategy impact gaining new customers?	Do you think that online Marketing is more useful for companies to keep direct relations with their customers?			
	No	Perhaps	Yes	Total
No	2	8	3	13
Expected Count	1.6	6.6	4.9	13.0
Perhaps	16	63	23	102
Expected Count	12.3	51.6	38.1	102.0
Yes	41	177	157	375
Expected Count	45.2	189.8	140.1	375.0
Total	59	248	183	490
Expected Count	59.0	248.0	183.0	490.0
Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	14.045a	4	.007	
Likelihood Ratio	14.815	4	.005	
Linear-by-Linear Association	10.537	1	.001	
N of Valid Cases	490			

*Table 1: 2 cells (22.2 %) have expected count less than 5.  
The minimum expected count is 1.57*

The following table shows the marketing strategy and marketing strategy followed through advertising, radio, billboards, radio advertisements, bumper-stickers on cars, and signs and banners etc, are perceived as a way for companies to connect directly with consumers and to gain new customers, so these variables depend on each other after Asymp value. Sig. (2-sided) is  $0.07 < 0.05$  which indicates that these variables are dependent or their par bond is statistically significant.

Does a Marketing strategy impact gaining new customers?	Do you think that everything comes around marketing when you see the everyday exposures on billboards, radio advertisements, bumper-stickers on cars, and signs and banners placed at shopping malls that we pass?			
	No	Perhaps	Yes	Total
No	0	7	6	13
Expected Count	.9	5.0	7.1	13.0
Perhaps	8	47	47	102
Expected Count	6.9	39.3	55.8	102.0
Yes	25	135	215	375
Expected Count	25.3	144.6	205.1	375.0
Total	33	189	268	490
Expected Count	33.0	189.0	268.0	490.0
Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	6.019a	4	.198	
Likelihood Ratio	6.806	4	.147	
Linear-by-Linear Association	2.324	1	.127	
N of Valid Cases	490			

*Table 2: 1 cells (11.1 %) have expected count less than 5.  
The minimum expected count is .88*

The table below shows that it is perceived to have benefited from marketing, after a successful marketing strategy affects the behavior and customer satisfaction, so these variables are dependent on each other after Asymp value. Sig. (2-sided) = 0198 > 00:05 which indicates that they are statistically significant.

Do we have benefits from marketing?	Does marketing have an impact on the customer behavior?			
	No	Perhaps	Yes	Total
No	0	0	10	10
Expected Count	2	2.5	7.3	10.0
Perhaps	5	29	43	77
Expected Count	1.4	19.0	56.6	77.0
Yes	4	92	307	403
Expected Count	7.4	99.5	296.1	403.0
Total	9	121	360	490
Expected Count	9.0	121.0	360.0	490.0
Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	23.736a	4	.000	
Likelihood Ratio	22.547	4	.000	
Linear-by-Linear Association	5.608	1	.018	
N of Valid Cases	490			

Table 3: 3 cells (33.3 %) have expected count less than 5.  
The minimum expected count is 18

The following table shows the two variables depend on each other after Asymp value. Sig. (2-sided) = 00:00 < 00:05 which indicates that the connection between them is statistically significant, as it is perceived by the respondents that a successful marketing strategy pursued by companies may affect the purchase of products / services even though they may not be necessary for them.

Does a Marketing strategy impact gaining new customers?	In your own opinion can Marketing push the customers to buy products or services, even though they might be unnecessary for them?			
	No	Perhaps	Yes	Total
No	5	5	3	13
Expected Count	1.8	5.6	5.6	13.0
Perhaps	26	53	23	102
Expected Count	13.7	44.1	44.1	102.0
Yes	35	154	186	375
Expected Count	50.5	162.2	162.2	375.0
Total	66	212	212	490
Expected Count	66.0	212.0	212.0	490.0
Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	38.825 <sup>a</sup>	4	.000	
Likelihood Ratio	37.239	4	.000	
Linear-by-Linear Association	35.241	1	.000	
N of Valid Cases	490			

Table 4: 4 cells (11.1 %) have expected count less than 5.  
The minimum expected count is 1.75

The table below shows that these variables are statistically dependent on each other because of the value of Asymp. Sig. (2-sided) = 00:00 < 0:05, which shows that the perception of the brand has to do with the fact that it takes customer feedback from the direct relationship between companies.

Does Brand perception mean how customers view your brand as a whole?	Is it one of the biggest factors that tie into brand perception is whether or not the customer has felt fairly treated?			
	No	Perhaps	Yes	Total
No	7	19	7	33
Expected Count	3.8	18.0	11.2	33.0
Perhaps	31	146	74	251
Expected Count	28.7	137.3	85.0	251.0
Yes	18	103	85	206
Expected Count	23.5	112.7	69.8	206.0
Total	56	268	166	490
Expected Count	56.0	268.0	166.0	490.0
Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	11.999a	4	.017	
Likelihood Ratio	11.651	4	.020	
Linear-by-Linear Association	11.049	1	.001	
N of Valid Cases	490			

Table 5: 1 cells (11.1 %) have expected count less than 5.  
The minimum expected count is 3.77

The table below shows that two variables are statistically dependent on each other because of the value of Asymp. Sig. (2-sided) = 0.017 < 0.05, which indicates that marketing nowadays, is perceived by the respondents, that is the focus of the customer, their needs and pleasures and all strategies developed by companies around the customer and this fact should lead to successful results.

If we say nowadays marketing do you think that includes everything that has to do with innovation, target market, and comprehension of customer needs?	Modern Marketing is about putting the customer, buyer as a primary point of all strategy focus. Should this continue?			
	No	Perhaps	Yes	Total
No	5	2	11	18
Expected Count	1.7	6.4	9.9	18.0
Perhaps	5	82	85	172
Expected Count	16.1	61.1	94.8	172.0
Yes	36	90	174	300
Expected Count	28.2	106.5	165.3	300.0
Total	46	174	270	490
Expected Count	46.0	174.0	270.0	490.0
Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	30.694a	4	.000	
Likelihood Ratio	31.720	4	.000	
Linear-by-Linear Association	.140	1	.708	
N of Valid Cases	490			

Table 6: 1 cells (11.1 %) have expected count less than 5.  
The minimum expected count is 1.69

## CITATIONS AND AUTHOR DESCRIPTIONS

A review of prior, relevant literature is an essential feature of an academic paper. An effective review creates a firm foundation for advancing knowledge. A particular goal was to advance the state of theory within the marketing field. This article includes a list of references, some other interesting and very important sample thesis statements for literature reviews are as follows:

*“Better market data makes marketing more efficient, and in competitive markets some of the fruits of efficiency are passed on to consumers”... so “Interactive marketing: exploiting the age of addressability”<sup>1</sup>*

*“The youth have been found to be open to trying new and different things and are seen to be innovators in adopting new technologies”...<sup>2</sup> So, this research was interested to “towards an understanding of the youth’s perception marketing discipline”*

A key concept of marketing perception is the development of an individualized, one-to-one relationship with a customer that becomes increasingly relevant, as Peter Drucker wrote, *“the basic purpose of any business is not to sell products but to create and keep customers...”<sup>3</sup>*. The rationale is to increase customer loyalty and customer retention, maintaining a continuous relationship with the customers. It focuses on building long-term bonds rather than short-term relationships. According to literature *“Most findings support antecedent role of perceptions of service quality in consumer satisfaction in a cause-and- effect relationship”<sup>4</sup>*, so the students who are giving quick answers to the questionnaire, about marketing as discipline, are not affected by the literature that they have studied at university.

This literature review shows that understanding how students perceive marketing, and also that value must be measured as a multi attribute construct.

## CONCLUSIONS

Multidimensional scaling analysis suggests that the underlying structure of these perceptions can be described by the labels: enjoyable, challenging, and real world.

The perception of respondents shows that marketing strategy and marketing strategy pursued through the Internet is perceived as a way most effective for companies to connect directly with consumers.

Marketing strategy and marketing strategy pursued by advertising, TV, radio, billboards of different etc., are perceived as a way for companies to connect directly with consumers and to gain new customers, so these variables depend on each other.

Another view consists in the fact that it is perceived to have benefited from marketing, after a successful marketing strategy affects the behavior and customer satisfaction, also a successful marketing strategy pursued by companies can also affect the purchase of products/services although they may not be necessary for them.

Marketing nowadays, is perceived by the respondents that is the focus of his customer, his needs and pleasures and all strategies developed by companies mill around the customer and such a fact should proceed to a company’s successful result. In their opinion, sometimes, the perception of the brand has to do with the fact that it takes customer feedback from the direct relationship from companies, so there are influential CRM (customer relationship management).

This research, about perception that students have for marketing as a discipline, provides the opportunity to identify their perceptions, conducted through questionnaires, which assesses the views of young people which are summarized as follows:

- The performance and quality of service;
- Image for trademark (brand image);
- Competitive positioning in the market through marketing strategy used;
- Online Marketing.

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<sup>1</sup> Blatberg R.C. and Deighton J. (1991), Interactive marketing: exploiting the age of addressability, Sloan Management Review, Fal. P. 5–14.

<sup>2</sup> Kumar A. & Lim H. (2008), Age Differences in Mobile Service Perceptions: Comparison of Generation Y and Baby Boomers. Journal of Service Marketing. Vol. 22, No. 7. P. 568–577.

<sup>3</sup> Peter F. Drucker (1964), Managing for Results: Economix Tasks and Risk-Taking Decisions, 1st ed., Harper & Row (New York). P. 541.

<sup>4</sup> Ruben Chumpitaz Caceres and Nicholas G. Paparoidamis (2007), Service quality, relationship satisfaction, trust, commitment and business-to-business loyalty, European Journal of Marketing. Vol. 41. No. 7/8, 2007, Emerald Group Publishing Limited. P. 836–867.

Nowadays it is understood the importance of marketing and its instruments relevant given that marketing is viewed as an element that should not be missing Albanian businesses because marketing is so important, they can not be considered as a special feature. It is the whole business seen from the point of view of the final result.

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# MOTIVATION OF STUDENTS IN DISTANCE LEARNING IN THE TIME OF THE PANDEMIC

Asllan Vrapi\*, Fatmire Vrapi\*\*

**Abstract.** For almost 10 months the world has been facing a pandemic caused by the Covid-19 virus. The consequences caused by this situation are obvious and sensitive in human life and activity. One of the areas affected by the pandemic is education. The effects of the epidemic were evident in the period of isolation March.2020 to June 2020. In the early days of isolation, the education system, educational institutions, teachers, students and parents find a new, unknown and unproven reality. Teaching and learning were two of the new challenges of the situation. Teachers and students have been facing some special cases and have not experimented with distance learning. Regardless of the use of education and training provided up to that point, online learning was the opportunity to apply teaching and learning in isolation. The development of communication and information technology had the opportunity to function in the realization of distance learning in home or isolation. Numerous technical tools such as smartphones, tablets, computers, laptops, televisions, radios or social networks could be used which could be quickly distributed for teachers and students. Some of the electronic platforms used are Google Classroom, Zoom, Moodle, Google Hangouts, Loom, GoToMeeting, School of the Future, WhatsApp or other course management systems (CMS). The aim is: to study and analyze how to motivate students to attend and learn lessons from teachers if they learn online or even from other sources for distance learning without the presence of teachers? Another aspect that this paper aims at is if it seeks to be report motivated in home teaching with the motivation of students in classroom teaching? In what report are the internal and external motivation in distance learning?

For the realization of this study, the method of observation was used combined with the method of free discussion of students.

**Keywords:** course management, electronic platform, motivation, online teaching, student, teacher.

## INTRODUCTION

The pandemic caused by Covid-19 is an extraordinary event in the education system. Almost suddenly the education system faces new challenges. In Albania on March 9, 2020, the Ministry of Education ordered the closure of schools. On March 10, it ordered the development of lessons through on-line platforms. Initially a large number of teachers, students and parents reacted with dissatisfaction to such a development. The disapproval had to do with:

1. The new way not previously experimented in the education system.
2. Difficulties in accessing computer equipment and the Internet throughout the country.
3. Skepticism of students and parents in the realization of on-line teaching.
4. The ability of teachers to teach online.

First of all, I want to emphasize that Albania, although a small country, is covered with a satisfactory internet network.

After overcoming the difficulties of starting, the task and dilemma of the teachers was:

1. How will students react to on-line teaching?
2. How motivated would students be to get involved in learning to gain knowledge, skills, habits and values?

Many teachers were aware that with the change of teaching from face to face in on-line teaching, the motivation of the students would also change.

## LAYING OUT THE PROBLEM

The problem is in what reports will the motivation at the time of the pandemic be compared to the motivation before the pandemic?

Motivation is a very important indicator that should accompany the student in involvement in teaching and learning. "In particular, motivation scientists have focused attention on the individual psychology of relevance appraisal processes and beliefs, rather than upon educational policy and curricular content" (Albrecht, J. Karabenick, S. A. January 2018, p. 13). Student motivation in

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general “refers to the willingness, need, desire and obligation of the student to participate and be successful in the learning process”. The effectiveness of the use of computer equipment increases when accompanied by courageous ideas of students in terms of updating knowledge, insistence on achieving goals, in creating a solution scheme of the task or problem” (Vrapi, A. 2019, p. 149). Skinner and Belmont develop this theory by noting that students who are motivated to learn “select” tasks at a certain level, according to their abilities, initiate action when they have the opportunity to do so and show great interest and concentration in the implementation of tasks. learned; general display positive emotions during the lesson, including optimism, enthusiasm, curiosity and interest. In the pedagogical literature, motivation is described as “enthusiasm to do something. This definition points to two themes: action (doing something), and positive feelings about that action (enthusiasm) (www.cambridge.org/elt/blog/2020/08/21/3-tips-students-motivation-during-pandemic).

Referring to the above definition we distinguish two issues that need to be considered much more in terms of on-line teaching which are action and enthusiasm. In the conditions of the pandemic both of these indicators appear altered. The action of the student to do something is limited to the home environment, physically isolated from other students, the presence and influence of the teacher is not as before. The space of freedom changed, now the student is not under the constant supervision of the teacher, he can follow the teaching whenever he wants, he can return to watch and listen to the lecture as many times as he wants, he can point out ambiguities and can ask questions for clarification without the usual shyness that accompanies many students in the classroom. The act of doing something is different from the one in the classroom. The changing reality of this pandemic makes focusing on research and classes extremely difficult for many, but it also makes it clear that we will be in this “new normal” for the long haul. The dangerous impact of touching him and other members by covid-19 has brought about a different state of enthusiasm. The pandemic has changed the mood of the student and the teacher. The influence of means of communication and information such as: social networks, computer equipment, TV, radio, etc. have affected the mental state and enthusiasm of the student.

On the other hand, it should be mentioned that the on-line teaching realized through information and communication technology devices such as: smartphone, tablet, laptop, computer, brought a different feeling and atmosphere to the students. “The student’s inner motivation to learn reveals new knowledge and makes clear how things give energy that affects learning outcomes” (Simo, P. 2014, p. 218). Such devices were used before for tasks, additional information, short communications in function of the learning process. The use of technological equipment in the time of the pandemic is a solution for the development of teaching but also an increased sense of enthusiasm of students to be involved in learning. It is clear that technological devices are used with great desire by young people for entertainment, information, communication, etc. “Even for online courses that are focused more on individualistic learning, you can still make use of online forums and other tools that foster group discussion and collective problem-solving” (elearningindustry.com/how-to-motivate-learners-during-pandemic).

Applying for teaching brought increased enthusiasm to get involved in learning. In the pre-pandemic period, teaching through computer equipment was considered as a secondary learning activity. In the pandemic period learning through computer equipment is a major learning activity. The development of teaching and involvement in learning was made possible by applying electronic platforms such as: Google Classroom, Google Meet, Moodle, Zoom, etc. “Online learning has become the new fad, there are some unique challenges that students and lecturers taking online courses now have to navigate through”. (elearningindustry.com/how-to-motivate-learners-during-pandemic). Student motivation in on-line learning is one of the concerns of teachers and parents in this pandemic situation. “As experts in learning technologies, the Learnovate Center contacted several second-tier schools across the country last week to see how they were adapting to online learning”. We also asked them how they were coping with the issue of motivating students who are trying to study in such precarious circumstances (www.learnovatecentre.org/motivating-students-and-teachers).

Different teachers express themselves in different ways and perspectives some are of the opinion that students have felt motivated and have achieved very good results. “Some teachers, who did not

want to be mentioned, spoke and managed to get 100 possible points in the oral exams”. “They also stated that they could hardly notice in the written exams” ([www.learnovatecentre.org/motivating-students-and-teachers](http://www.learnovatecentre.org/motivating-students-and-teachers)).

One of the concerns that accompanies students’ learning at home is how much they have access to computer equipment and access to the Internet. We mention these two conditions because their absence hinders communication and involvement in distance learning. Teachers raised the issue of the poor level of broadband in some areas of the country which could affect students accessing the learning technology tools, which could lead to demotivation ([www.learnovatecentre.org/motivating-students-and-teachers/](http://www.learnovatecentre.org/motivating-students-and-teachers/)).

There are different opinions about how we teachers should orient students to learn in times of pandemic. “Among motivation scientists, there is a general consensus that helping students comprehend meaningful connections between what they do and learn in school” (Albrecht, J. Karabenick S. A. January 2018, p. 13).

The students’ stay at home distracted them from the learning process. Students at home experience family worries far more than when they go to school. There were also concerns as to whether or not some students were able to concentrate at home especially if a parent had lost their job or if they were being expected to look after younger siblings while their parents were at work ([www.learnovatecentre.org/motivating-students-and-teachers](http://www.learnovatecentre.org/motivating-students-and-teachers)).

## **RESEARCH METHODOLOGY**

To conduct this scientific research, I relied on the experience gained during the development of online teaching with my students in the period March-May 2020. I taught at the University of Vlora full-time and at the University of Elbasan part-time. During this period, according to the academic program and the set schedule, I had classes in three subjects, in which 52 students studied at the University “Ismail Qemali” of Vlora and 18 students of the University “Aleksandër Xhuvani” of Elbasan. I have kept regular and continuous notes.

Among the main points I will mention: discipline in the implementation of actions, rigor in the implementation of the schedule, exchange of information, teaching during lectures and engagement of students in seminars, level of preparation, participation and involvement in lectures and seminars, teaching effectiveness and the level of knowledge, skills and habits acquired. During this period, I developed on-line teaching. For this purpose, I developed the lectures using the Google Classroom platform for lectures, submitting previously recorded activities in the audiovisual version and receiving assignments, questions, remarks and suggestions, etc. from students. Zoom platform to conduct live on-line teaching, lectures and seminars. For fast communications, tasks, notifications and sending the communication code to Zoom, etc. I used the WhatsApp platform.

In June, according to the instructions and teaching schedule, I conducted three weeks of teaching in the auditorium with the students of two subjects, while in September I conducted four weeks of teaching in the auditorium in the other subject with the students of another profile.

## **STUDY FINDINGS**

Analyzing the records kept and analyzing the students’ results in the final exams it was noticed that:

1. Students were less motivated in on-line teaching than in face-to-face teaching.
2. The decrease in motivation is more pronounced in students who score worse in learning compared to students who score for good results.
3. Some students say that the decrease in motivation is caused by the fact that they feel endangered by the pandemic and the numerous warnings about the dangers caused by covid-19.
4. Most students say distance learning would be more successful in a non-pandemic situation.
5. In lectures and seminars the absences of students were more numerous than in teaching in the auditorium.

6. Students' commitment and desire to solve tasks was below the level of engagement in teaching in the auditorium due to lack of communication with other students
7. There are more undeveloped tasks in on-line teaching than in face-to-face teaching.
8. In conditions of isolation, the lack of physical communication reduces the level of activity, involvement, and makes it difficult to provide textual materials.
9. In terms of physical isolation students emphasize that they have used much more information and materials through the tools of information technology and communication compared to teaching time in the auditorium.
10. Learning during the pandemic has had a positive impact on increasing students' self-efficacy regardless of their outcomes.

## CONCLUSIONS

Given the research conducted, we reach the following conclusions:

1. Student motivation in on-line teaching in pandemic time is lower than in classroom teaching.
2. The decrease in motivation is more pronounced in weaker students than in good and very good level students.
3. Student engagement in on-line teaching at the time of the pandemic for task solving was lower than in classroom teaching.
4. Students' self-efficacy to solve their own tasks and to provide their own sources and information materials in the time of isolation increases despite the decrease in engagement in teaching.
5. In the time of the pandemic, the effective use of computer equipment for learning has increased in relation to the time used for games and entertainment.

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# RISK LEVEL OF MALNUTRITION IN ALBANIA AND ITS RELATION WITH SOCIO-DEMOGRAPHIC FACTORS AND BMI DURING COVID-19 PANDEMIC

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**Abstract.** *Introduction: Malnutrition, in all its forms, is a global problem and continues to be one of the greatest challenges facing our generation. 'MUST' is a five-step screening tool to identify adults, who are malnourished, at risk of malnutrition or obese.*

*Purpose: Evaluation of the risk level of malnutrition and its relationship with socio-demographic factors and BMI during COVID-19 pandemic.*

*Methodology: This is an exploratory study, carried out in Albania during May 20 — June 20, 2020, using the 'MUST' since data such as: height, weight and weight before 3–6 months, was obtained through the AFQPHALS Survey (Adult Food Quality and Physical Activity Level Survey), which was distributed online on social networks during May 17–27, 2020 and completed by 545 adult subjects 18 years and older; including some Albanian cities with the predominance of the city of Vlora.*

*Results: The subjects of the city of Vlora constitute the main part of the study sample, with 55 %.*

*Most of the sample are women (75 %), age 30±11.5 years, with higher education (45 %) and master's degree (29 %), full-time employees (38 %) and students (35 %).*

*In Albania and Vlora results show that the major part of the study sample has a low level risk of malnutrition (73 %), but a part of the sample (16 %) has medium level risk and (11 %) high level risk of malnutrition.*

*Conclusions: The high risk for malnutrition according to gender, level of education and profession, prevails in gender females, at higher education and master's degrees, in students and full-time employees and also in the category of BMI underweight.*

**Keywords:** *malnutrition, socio-demographic factors, BMI, Covid-19, Albania.*

## INTRODUCTION

### Malnutrition

Malnutrition, in all its forms, is a global public health problem and one of the most serious threats to human health, as it is estimated to affect more than half of the world's population.

Malnutrition affects 1 in 3 people, including both genders, every age group, profession, socio-economic level and has great human, health and economic costs and continues to be one of the greatest challenges facing our generation.

The COVID-19 has changed the lifestyle and quality of life.

During the quarantine with the isolation of people at home, restriction of movement, social distancing, increased fear, anxiety stress and other mental health problems in the general population.

COVID-19 had a significant impact on the population, health systems, public health programs and economies around the world.

Paralysis of the economy and many other sectors, and also interruptions of some health services, giving priority to preventing the spread of the virus, early detection and immediate treatment of persons affected by COVID-19, increased fear, anxiety, stress and other mental health problems within the population (WHO, 2020).

The long weeks of social isolation due to the coronavirus pandemic have sown uncertainty about the future, one of the biggest challenges facing the population, and have left many people anxious, which could fuel long-term problems, according to psychologists (AA, 2020).

Various studies confirm the consequences of the pandemic on the mental health of the population (Kamberi, et al, 2020), (Mechili, et al., 2020), (Reyes, 2020), (United Nations, 2020).

The 130-country survey provides the first global data showing the devastating impact of COVID-19 on access to mental health services (WHO, 2020).

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### **Nutritional screening tool and Body Mass Index**

The ‘Malnutrition Universal Screening Tool’ (‘MUST’) is a five-step nutritional screening tool to identify adults, who are underweight and at risk of malnutrition, as well as those who are obese (BAPEN, 2011).

The ‘MUST’ is a good tool to discover subjects with different levels of risk, also in the BMI categories, normal weight or overweight, from data such as height, weight and weight before 3–6 months.

Based on the BMI and degree of weight loss, each subject was categorized into low, medium or high risk of malnutrition according to the Malnutrition Universal Screening Tool (Kvamme, 2011).

### **Purpose**

Evaluation of the risk level of malnutrition and its relationship with socio-demographic factors and BMI during COVID-19 pandemic.

### **Presentation of hypotheses**

- Age is related to the risk of malnutrition.
- Gender is related to the risk of malnutrition.
- Level of education is related to the risk of malnutrition.
- Profession is related to the risk of malnutrition.

## **METHODOLOGY**

### **Study design, timeframe and study population**

This is an exploratory study, carried out in Albania during May-June, 2020, in subjects 18 years and older, including some Albanian cities with the predominance of the city of Vlora.

### **Procedure**

Initially we evaluated the content and logic of the Adult Food Quality and Physical Activity Level Survey (AFQPHALS) by a group of experts and then the AFQPHALS survey pilot test was realized in an adult sample.

The data was obtained through the AFQPHALS Survey, which was distributed online on social networks during May 17–27, 2020 and completed by 545 adult subjects.

Participation was voluntary and each participant could complete the questionnaire only once.

Further during the period 20 May — 20 June 2020 the risk of malnutrition was calculated using MUST with data such as: height, weight and weight before 3–6 months

### **Questionnaire**

The AFQPHALS survey was used for data collection.

The AFQPHALS survey is a semi-structured instrument consisting of 35 questions that assess the quality of food and the level of physical activity in adults.

### **Data analysis**

The data analysis was performed through the SPSS program (version 23).

The analysis includes descriptive frequency statistics for each variable, as well as cross tables and ordinal regression. The level of significance was established at 5 % ( $p < 0.05$ ).

## **RESULTS**

### **Study participants’ characteristics**

The subjects of the city of Vlora constitute the main part of the study sample, with 55 %. Most of the sample are women (75 %), age  $30 \pm 11.5$  years, with higher education (45 %) and master’s degree (29 %), full-time employees (38 %) and students (35 %).

Do you suffer from any disorder or disease?	Absolute frequency	Relative frequency
Yes	82	15 %
No	463	85 %
Total	545	100 %

Table 1: Do you suffer from any disorder or disease?

The table shows the prevalence of problems or diseases from which study participants suffered or were previously diagnosed.

These problems are accompanied by fear, insecurity, anxiety, stress or depression created by the COVID-19 pandemic.

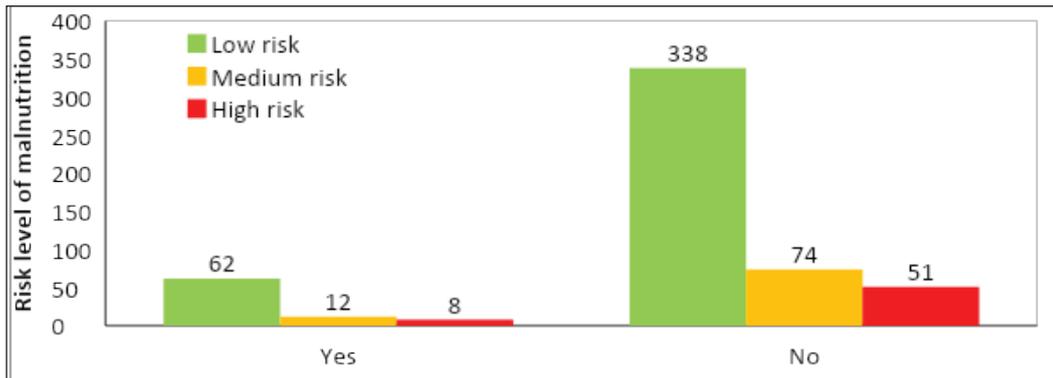


Figure 1: Presence of disorders or diseases and risk level of malnutrition

The chart 1 shows that 15 % suffer from diseases or disorders and 85 % do not.

Regarding the risk of malnutrition, 73 % of samples have low risk of malnutrition, 16 % have a moderate risk of malnutrition, and 11 % have high risk of malnutrition.

The average and high level of risk for malnutrition is present even in people who do not suffer from diseases or disorders.

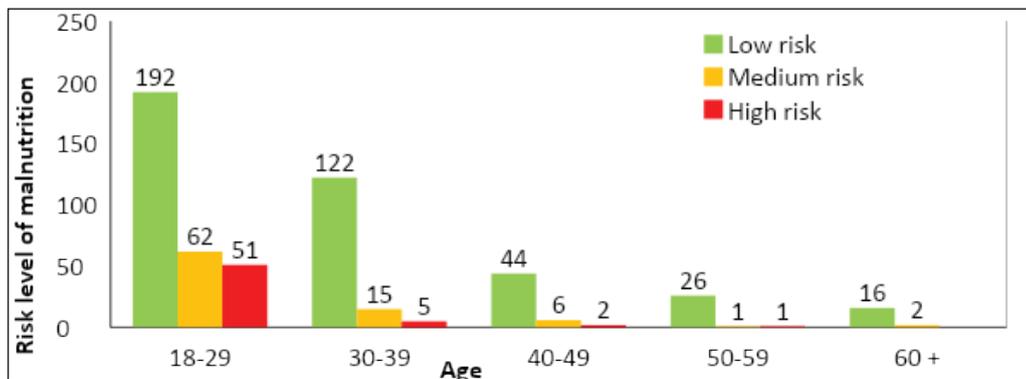


Figure 2: Age and risk level of malnutrition

The chart 2 shows that 16 % of the sample have moderate risk of malnutrition, of which 11 % are in the age group 18–29 years, while 11 % have high risk of malnutrition, of which 9 % are in the age group 18–29 years.

Moderate to high risk of malnutrition dominates in young age groups.

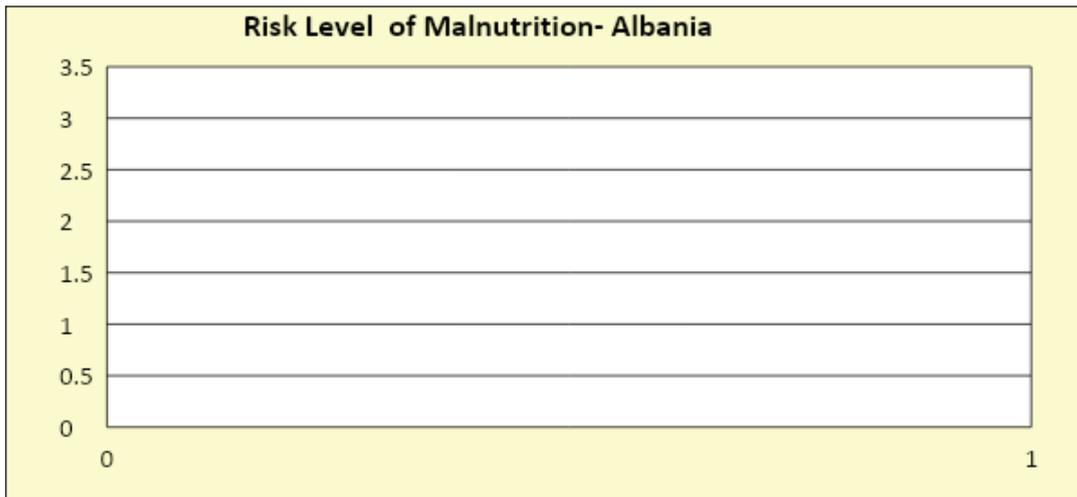


Figure 3: Risk Level of Malnutrition in Albania

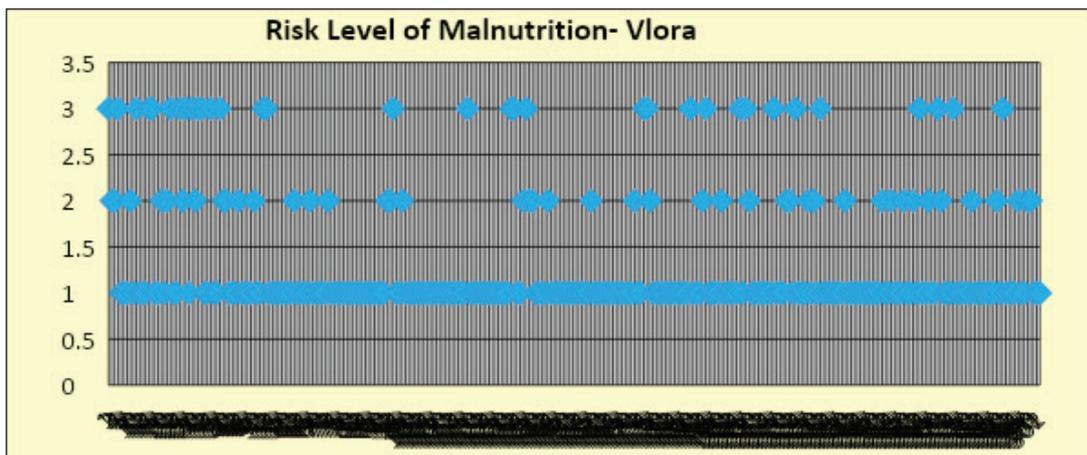


Figure 4: Risk Level of Malnutrition in Vlora

From the charts 3 and 4 (Albania and Vlora) it appears that most of the study sample has a low risk of malnutrition (1), but there is also a part of the sample with a medium (2) and high risk of malnutrition (3).

Albania and Vlora results show that the major part of the study sample has a low risk of malnutrition (73 %), but a part of the sample (16 %) has medium risk and (11 %) high risk of malnutrition.

The patterns of distribution of malnutrition in both charts are almost the same because the city of Vlora represents most of the study sample of Albania.

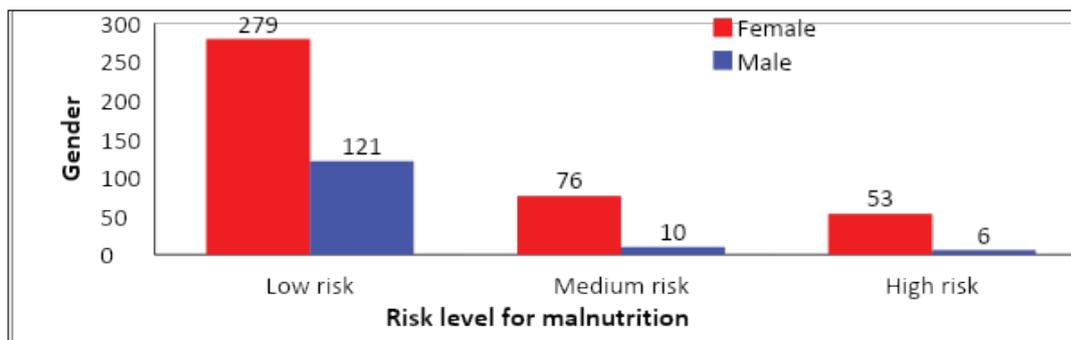


Figure 5: Gender and risk of malnutrition

The chart 5 shows that there are statistically significant differences between gender and the risk of malnutrition ( $p < 0.005$ ). This means that women are more vulnerable to the risk of malnutrition (low, medium and high risk).

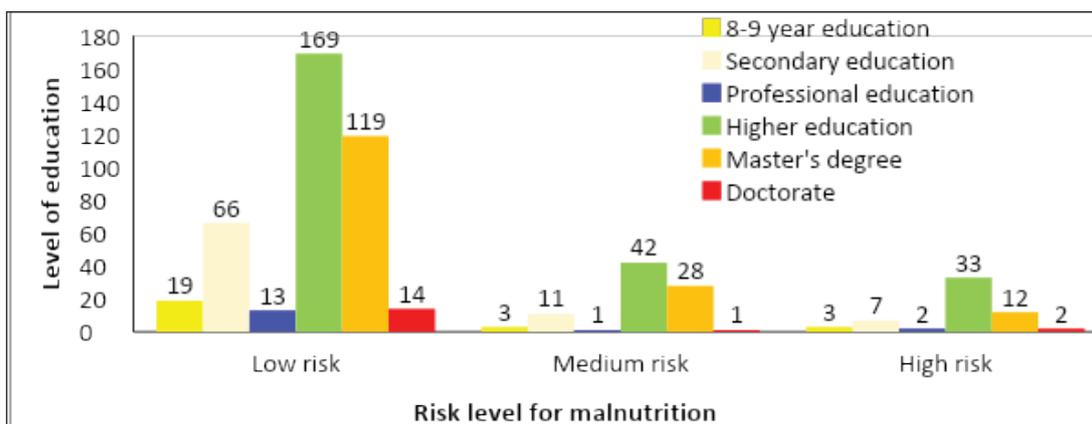


Figure 6: Level of education and risk of malnutrition

The chart 6 shows that there are no statistically significant differences between the level of education and the risk of malnutrition ( $p < 0.05$ ). Low, medium, and high risk of malnutrition predominates in higher education and master's degrees.

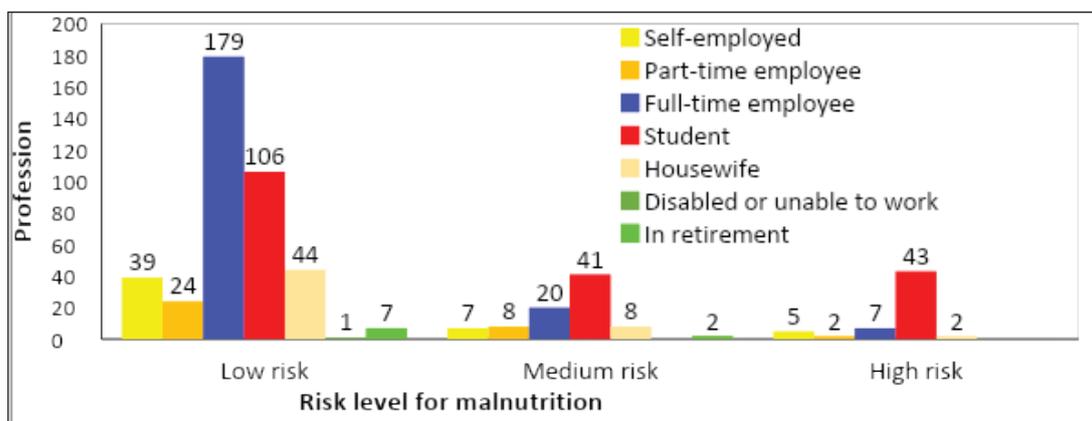


Figure 7: Profession and risk of malnutrition

The chart 7 shows that there are statistically significant differences between the profession and the risk of malnutrition ( $p < 0.005$ ). This means that students and full-time employees are more vulnerable to the risk of malnutrition (low, medium and high risk).

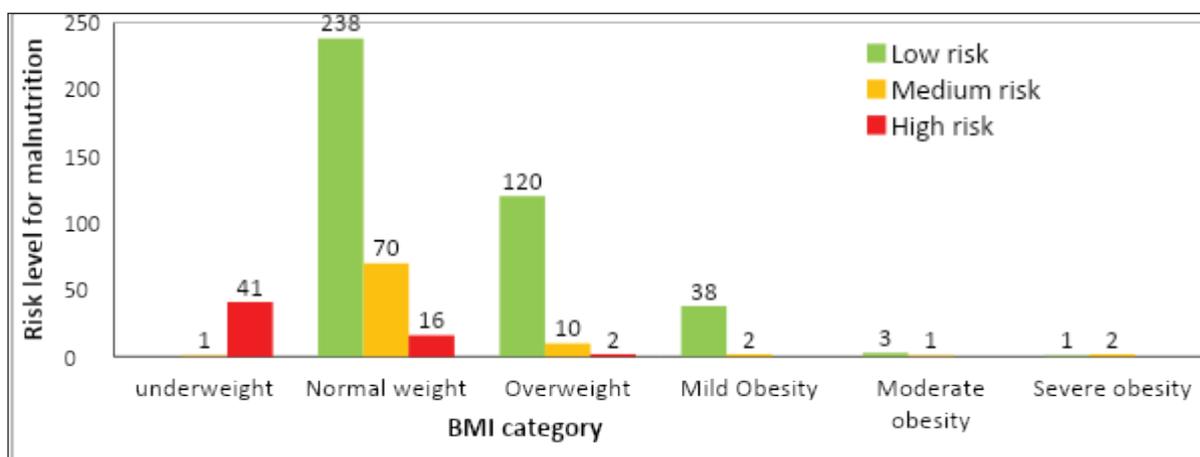


Figure 8: BMI category and risk of malnutrition

From the Chart 8 it appears that the medium risk of malnutrition is present in the categories of BMI normal weight, overweight and obesity, while the high risk of malnutrition is present in the categories of BMI underweight and normal weight.

The category of BMI underweight is almost always associated with a high risk of malnutrition.

The category of BMI normal weight is associated with low, medium and high risk of malnutrition.

The category of BMI overweight and obesity is mostly associated with low and moderate risk of malnutrition.

The risk of malnutrition related to BMI increases with decreasing BMI.

Related variables	Test	Sig. asintótica	Outcome
Age * Risk of malnutrition	Pearson's Chi-square	.000	There is relationship
Gender * Risk of malnutrition	Pearson's Chi-square	.000	There is relationship
Profession * Risk of malnutrition	Pearson's Chi-square	.000	There is relationship
Level of education * Risk of malnutrition	Pearson's Chi-square	.425	There is no relationship

Table 2: Relationship between variables of the AFQPHALS study

According to the results of the table of analysis of variables through Ordinal Regression:

**The hypothesis are accepted:**

- Age is related to the risk of malnutrition.
- Gender is related to the risk of malnutrition.
- Profession is related to the risk of malnutrition.

**The hypothesis is rejected:**

- Level of education is related to the risk of malnutrition.

## DISCUSSION

In this study malnutrition is also present in people without the presence of diagnosed disorders or diseases. This may be related to the measures taken to prevent the spread of the virus during the COVID-19 pandemic such as isolation, restriction of movement, social distancing, interruptions of some health services, passivity and also to the consequences on the mental health of the population such as demotivation, fear, anxiety and depression.

Although malnutrition affects all ages, the literature refers to the most vulnerable ages of children, adolescents, pregnant women, lactating women and the elderly.

However, in our study, young adults 18–29 years old also have a moderate and high risk of malnutrition compared to other adult age groups.

The results of the study on the high risk of malnutrition related to gender females are consistent with the results of the literature.

High risk of malnutrition predominates in higher education and master's degrees.

Numerous studies refer to the relationship between the level of knowledge on nutrition with good healthy eating practices and especially on the level of knowledge of students in high school and master degree students, which is higher compared to the general population.

Despite these facts, in our study the results show the opposite, so practices do not match their knowledge.

This study shows that the profession student and full-time employee are more vulnerable to the risk of malnutrition. These results may be related to the voluntary restriction of food, the lack of quick access to organic food and the provision of a variety of fast and processed food products in places where target groups live, study or work.

The risk of malnutrition related to BMI increases with decreasing BMI.

Studies show that low BMI was a major factor for malnutrition in both younger and older groups, and our study is consistent with this evidence.

## LIMITATIONS

The online study presented limitations regarding gender and age difference. There is a high participation of women compared to men and young people compared to the older people.

A larger sample and study extension is needed over time to obtain more reliable results.

However, this study, despite the limitations, has achieved the goal of identifying the risk of malnutrition in the study sample and has also identified the link between malnutrition and socio-demographic factors and BMI.

This study can further serve as a reference for investigators, and also can be used to inform the population about the groups most at risk for malnutrition as well as for self-screening of individuals about the risk of malnutrition if they undergo diets for weight loss, including not eating.

## CONCLUSIONS

Moderate and high risk of malnutrition during COVID-19 pandemic is present even in people who do not suffer from diseases or disorders and dominates in young age groups.

The high risk of malnutrition according prevails in gender female, higher education and master's degrees, students and full-time employees.

According to the BMI category the high risk of malnutrition prevails in the underweight BMI category.

## IMPLICATIONS AND RECOMMENDATIONS

Further studies are recommended to identify the causes of malnutrition in our country to reduce and prevent it.

Education on healthy eating of the population and in target groups is recommended and also self-screening for the risk of malnutrition of subjects undergoing various diets for weight loss.

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# COMPARATIVE STUDY ABOUT WASTE MANAGEMENT AND THE USE OF BIOSECURITY MEASURES OVER THE YEARS

**Denada Selfo\***

**Abstract.** Health care waste is every waste that is gained during the diagnosis, treatment or immunization of people or animals, whether it is dangerous or not. WHO has evaluated that 75 % of the produced waste is not dangerous and only 25 % is considered as dangerous. WHO has also classified the hospital waste into: infective, sharp, pathological, radioactive, chemical, pharmaceutical and general waste. **Aim of the study:** Recognizing the way of managing the hospital waste and the relationship evaluation between medical staff's knowledge, which is related to the safe execution of the work procedures and the number of biological risk accidents. Also make comparisons with previous years. **Results:** In this study there was noticed more awareness from the health staff about managing the hospital waste and use of biosecurity measures. In 2013, 56 % managed hospital waste and used biosecurity measures regularly. In 2014–2015, 65–75 % applied these procedures regularly. In 2017, 87 % managed hospital waste and used biosecurity measures regularly. The most endangered pavilions have been surgery and pediatrics. About 50 % of the accidents have happened because of drillings. In 2017 the number of the accidents has been low around 20 %. The least endangered pavilion has been ORL. Waste management and use of biosecurity measures affect significantly at health staff welfare ( $p < 0.005$ ). Working in turns trainings and education level also affect ( $p < 0.005$ ). Waste division is a key step to the reduction of infections spread in. Use of biosecurity measures is essential during hospital waste management. Hospital wastes have an important impact on health and the environment. Wastes division by the sources is a key step in infections reduction and spreading.

**Keywords:** health care waste, nurses, management, biosecurity measures.

## INTRODUCTION

Health care waste is: any waste, dangerous or not, generated during diagnosis, treatment or immunization of humans or animals or activity study / research. Health care waste is every waste that is gained during the diagnosis, treatment or immunization of people or animals, whether it is dangerous or not. WHO has evaluated that 75 % of the produced waste is not dangerous and only 25 % is considered as dangerous. WHO has also classified the hospital waste into: infective, sharp, pathological, radioactive, chemical, pharmaceutical and general waste. Waste types of health care: 75–90 % of them are safe. 10–25 % of them are dangerous. WHO has estimated that in 2000 accidents caused by contaminated syringes: 66,000 cases of infection with hepatitis B. 16,000 cases of infection with hepatitis C. 200 to 5,000 cases of HIV infection have infected health care personnel.

Infectious waste	Are materials that allegedly contain pathogens that cause disease in crowded environments
The sharp waste	Items that can cause drillings or cuts, including: syringes, scalpels, broken glasses and beakers
pathological wastes	Tissues, organs, body and blood parts, operations and autopsies' wastes, fetuses etc
radioactive waste	Liquids used in radiotherapies or laboratory research, contaminated glass etc
chemical waste	Expired laboratory reagent, disinfectants etj
Pharmaceutical Waste	Wastes which have expired, wastes with polluted packaging
General waste	Do not harm the people's health. These are : paper, cardboard, plastics and uncontaminated glass

*Table 1: Medical waste categories*

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Colours	Waste kinds
BLACK	Napkins, unpolluted wastes, general waste, plastic bottles, polluted packages, certain metals, uninfected fasciations
GREEN OR BLUE	Newspapers, cans, glass bottles, cardboard, clean packaging
YELLOW	Bandage and tampons, diapers, single-use urinal, hospital laboratory waste, sharp instruments, ampoules, polluted blood and liquids, undetectable tissues, dialysis waste, unsterilized wastes with high risk, polluted metal pieces
RED	Cytotoxic wastes, radioactive waste, mercury
BROWN	Distinct body parts, placenta

Table 2: Coding by colours

## MATERIAL AND METHODS

This cross-sectional, comparative study was realized during 2013–2017. Nurses of RHV at the departments of pathology, surgery, pediatrics, reanimation and urgency have participated in this study. There have been used two questionnaires for the realization of this study.

Questionnaire fulfillment was realized voluntarily by the nurses. The data processing was made by SPSS v 17.00

## RESULTS

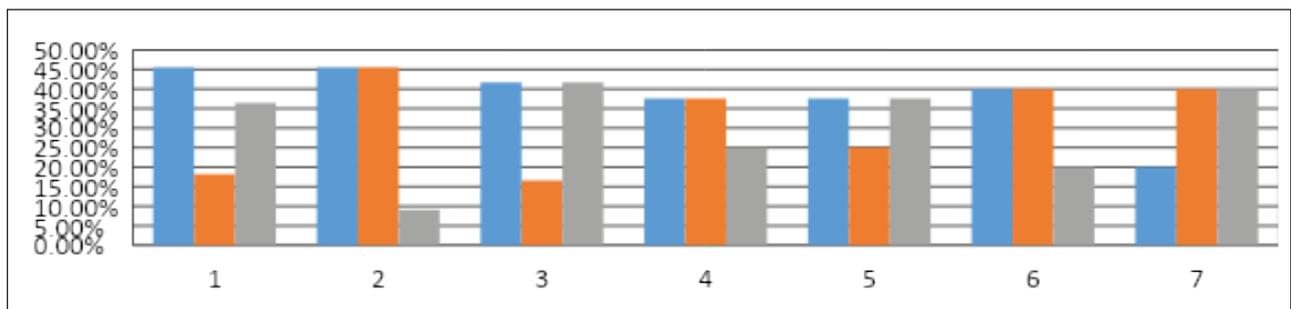


Figure 1: Distribution by age

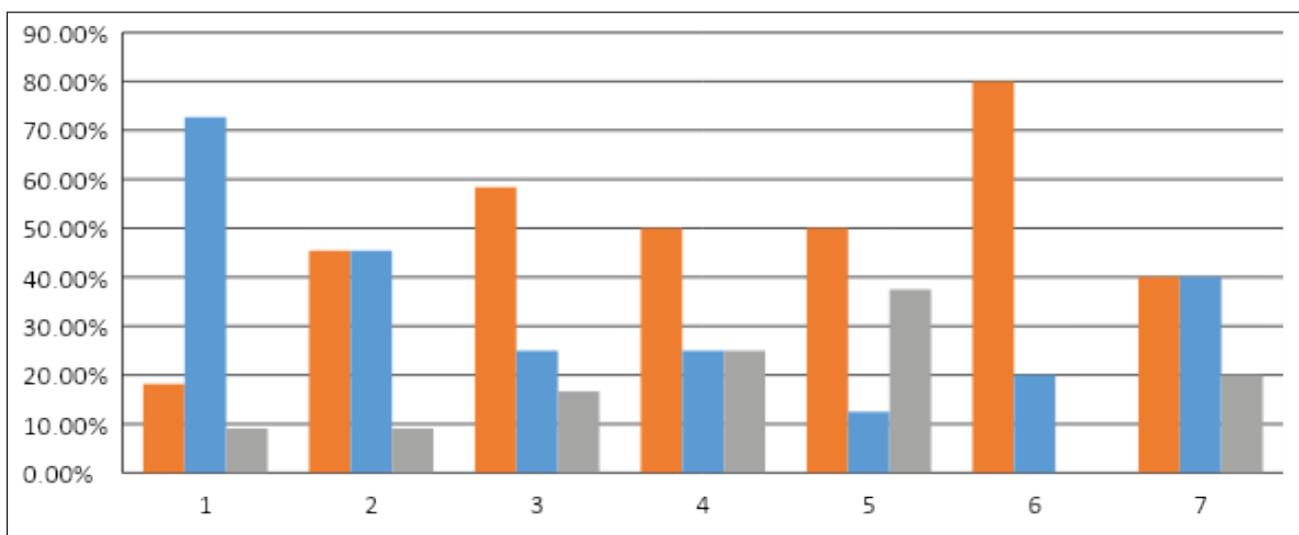


Figure 2: Have you ever shown a disease that was caused by the profession?

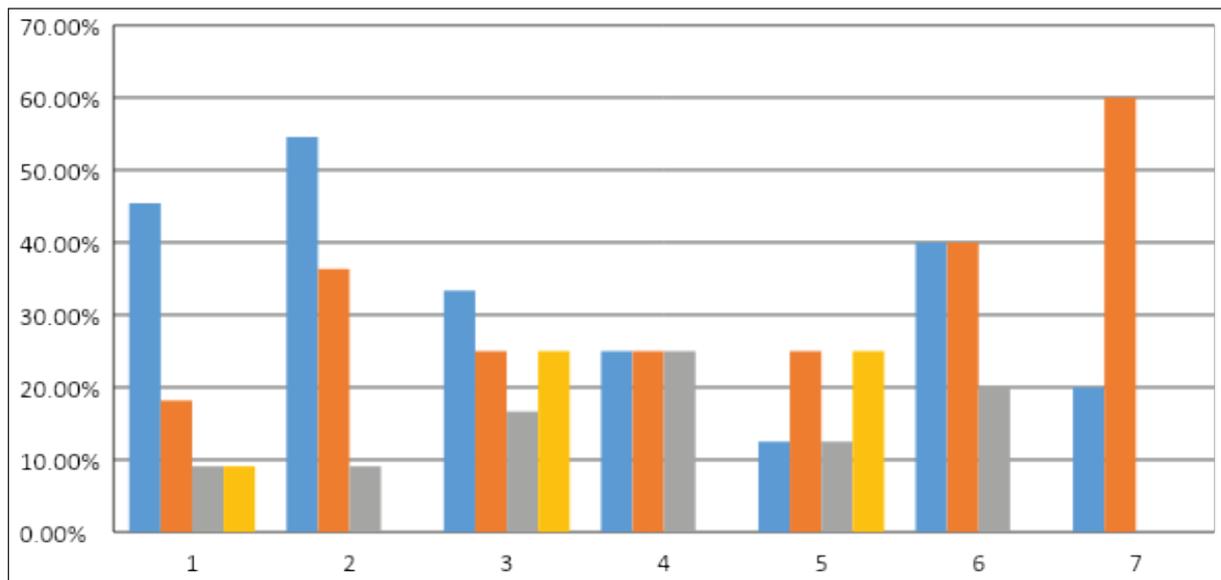


Figure 3: How many times have you had accidents with biological risk recently?

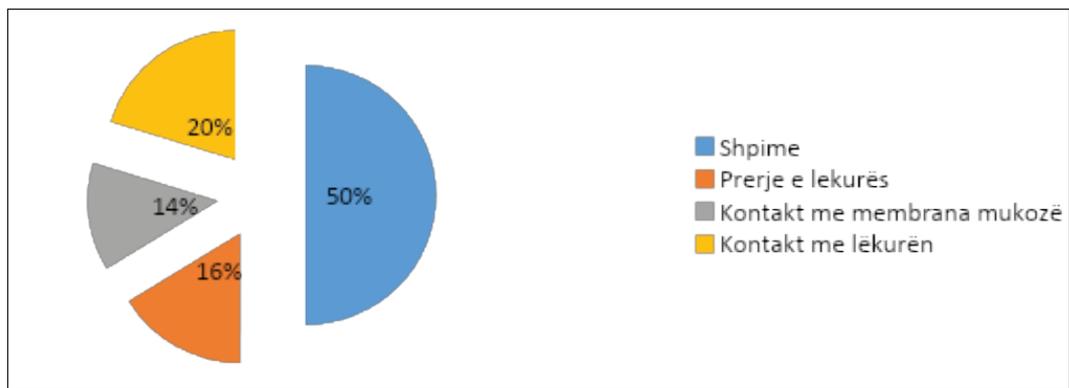


Figure 4: What kind was the exposure that caused the accident?

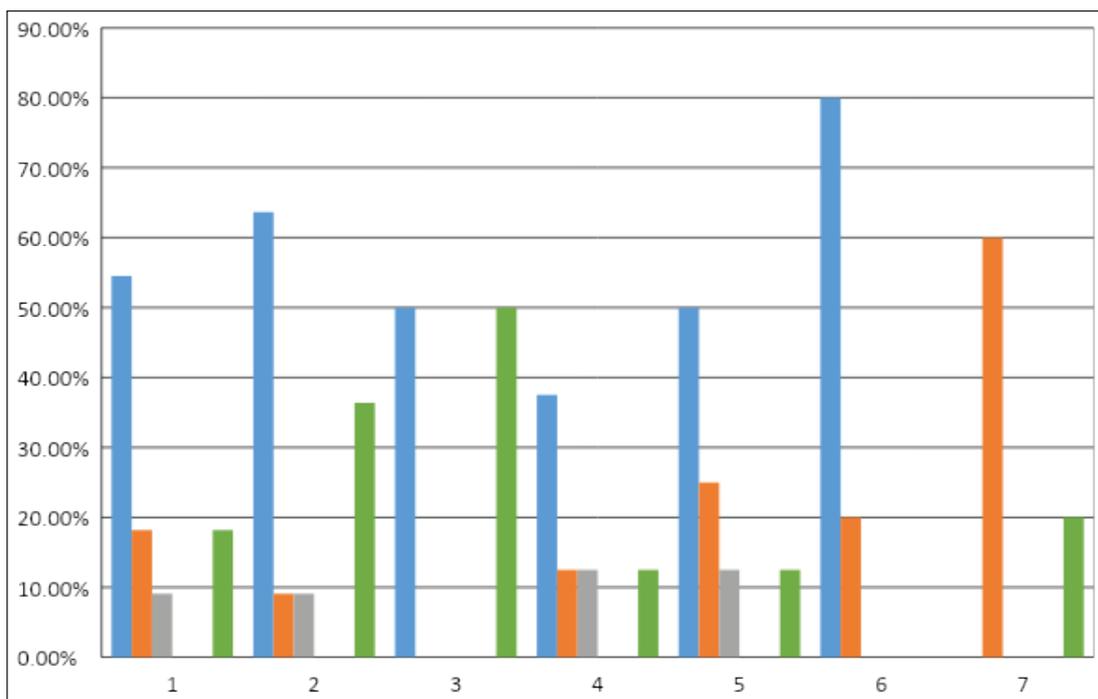


Figure 5: What kind of protection were you using when the accident happened?

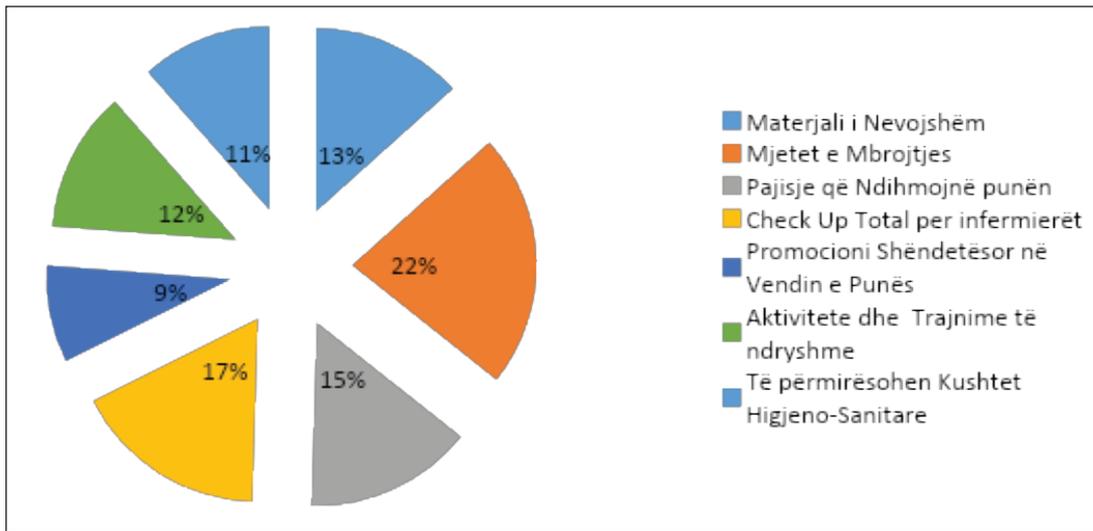


Figure 6: Which measures would you like to be improved in the future at the RHV relating to the Security and Health

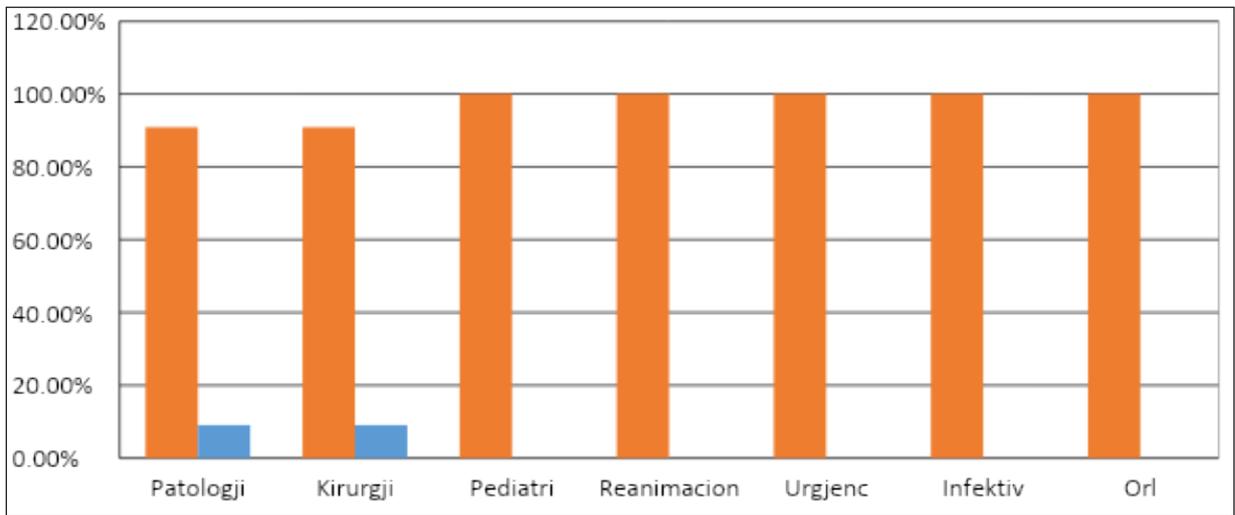


Figure 7: Do you consider hospital waste harmful for your health?

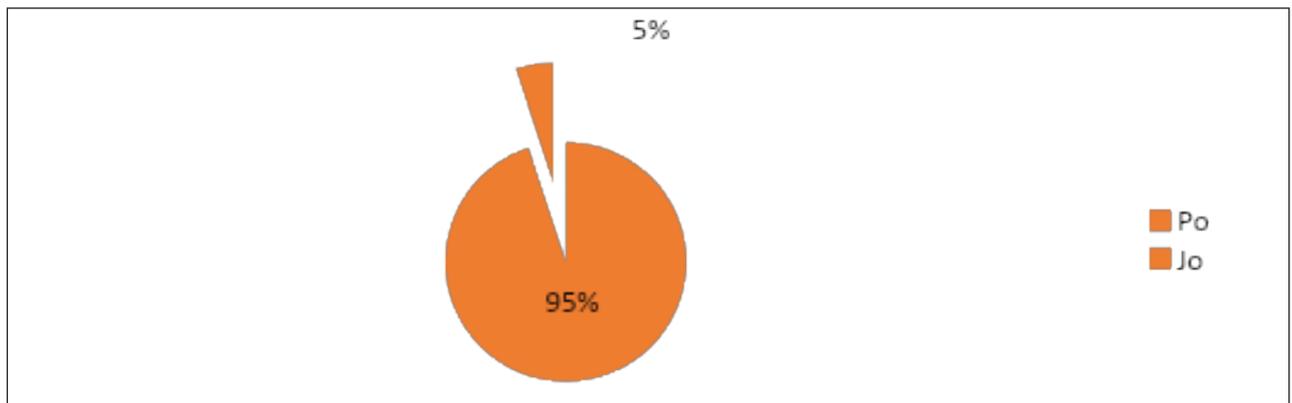


Figure 8: Do you think that there is non-management of hospital waste

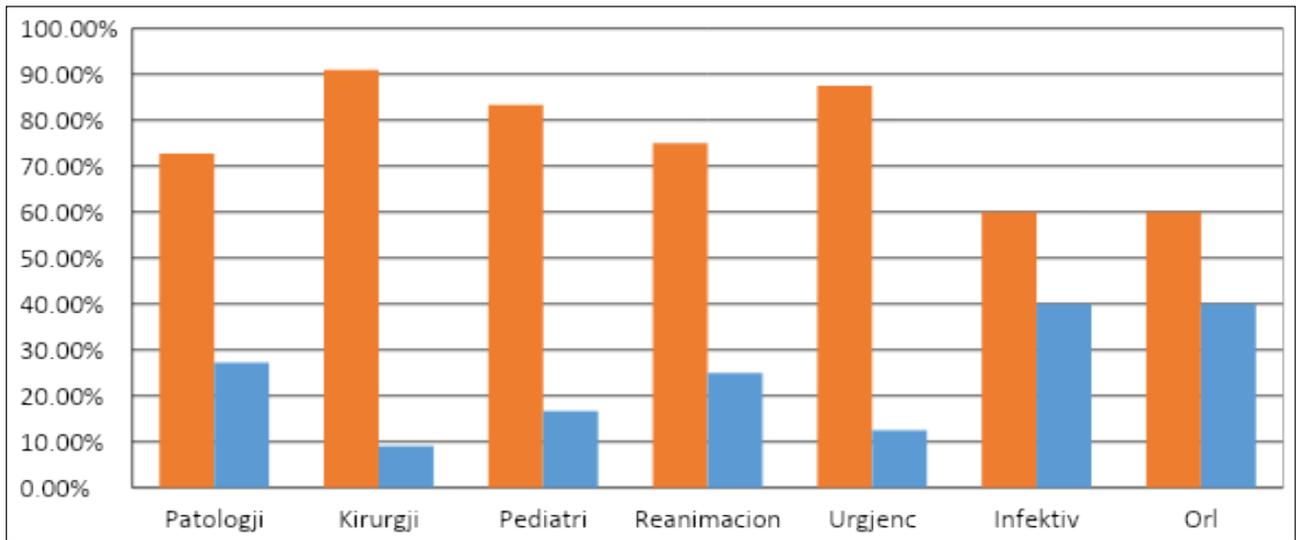


Figure 9: Do you think that accidents affect your solicitude to the patient?

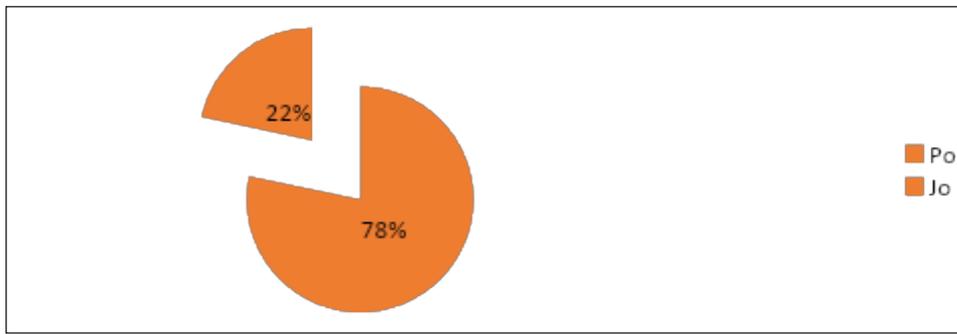


Figure 10: Do you know anything about biosecurity measures and aseptic technique?

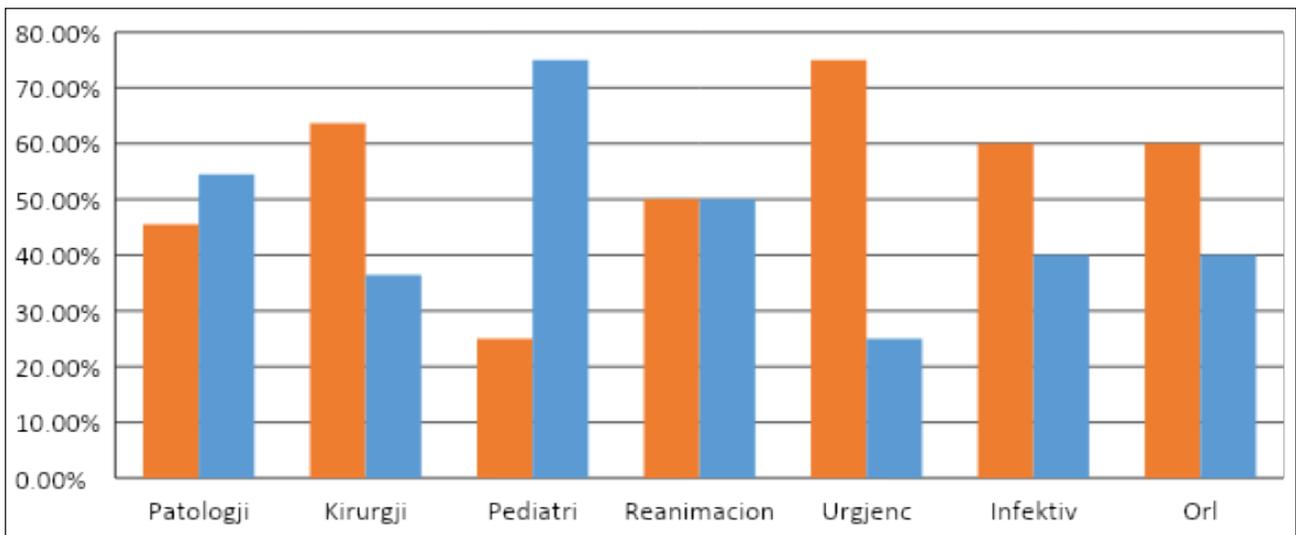


Figure 11: Do you always use the personal protective elements?

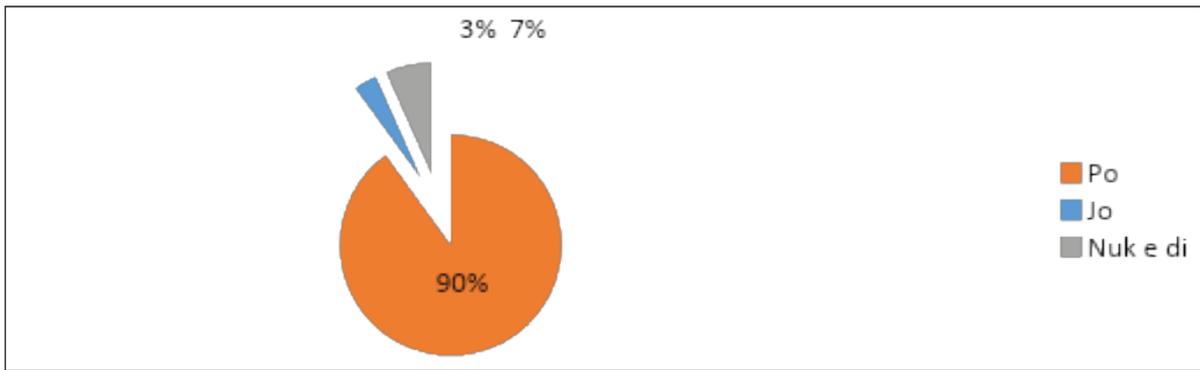


Figure 12: Is there a program applied for managing the waste produced in the workplace?

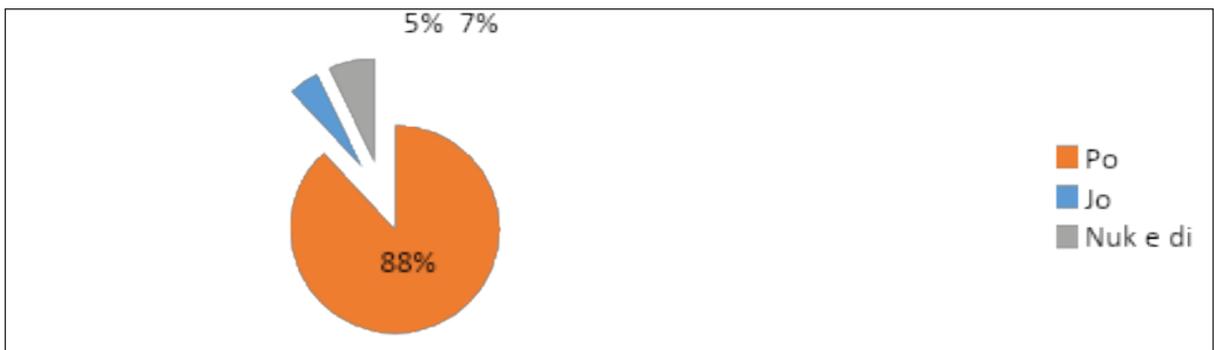


Figure 13: Is this process being documented and monitored?

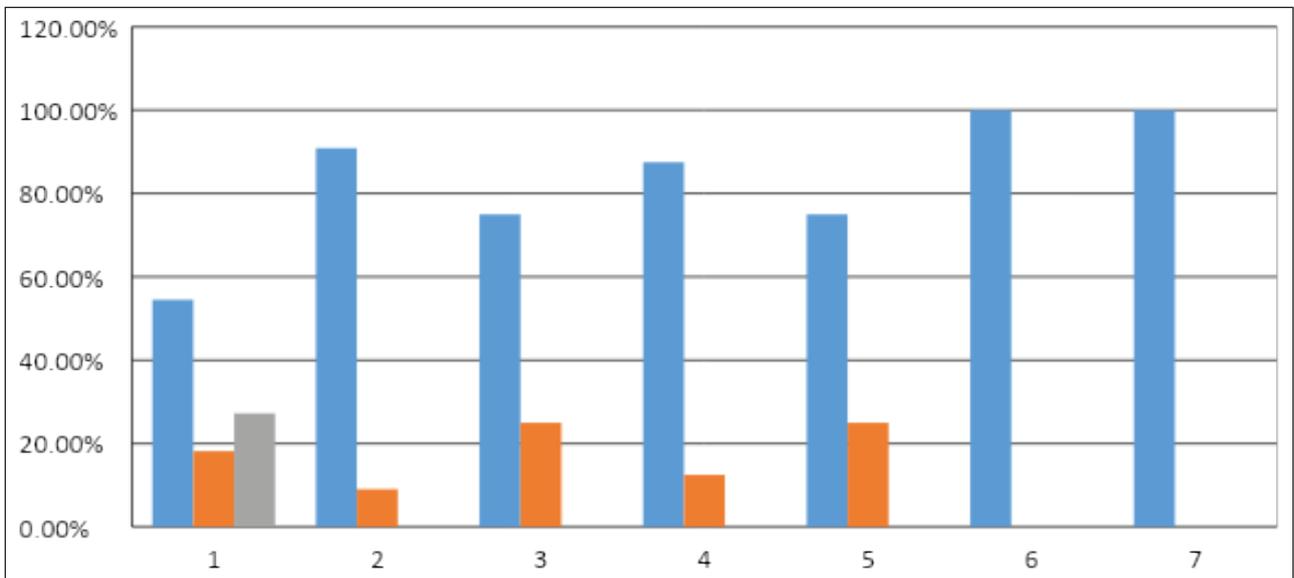


Figure 14: Are they collected?

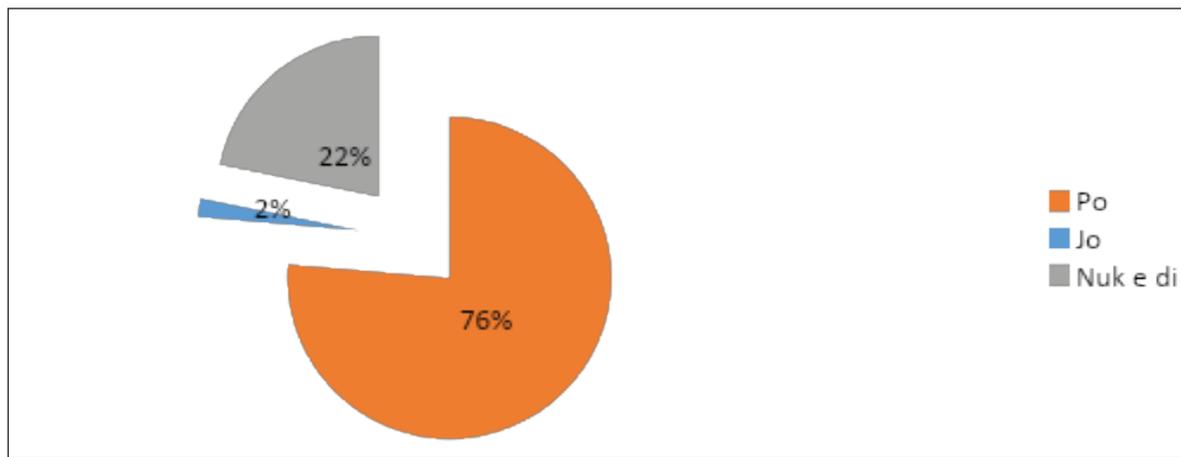


Figure 15: Does there a staff for hospital waste collecting exist

### **DATAS ABOUT HOW EDUCATION LEVEL AFFECTS**

Considering that Sigma's value in the examination table "One way Anova" is lower than  $p < 0.05$ , the dependent variable "Consider that you are exposed to ergonomic risk" is affected by the independent variable "Education level", which is this test for. We will refer to the respective table LSD Post Hoc Test to see which of its options affect more.

This study identified more awareness from the health staff about managing the hospital waste and use of biosecurity measures. In 2013, 56 % managed hospital waste and used biosecurity measures regularly. In 2014–2015, 65–75 % applied these procedures regularly. In 2017, 87 % managed hospital waste and used biosecurity measures regularly. The most endangered pavilions have been surgery and pediatrics. About 50 % of the accidents have happened because of drillings. In 2017 the number of the accidents has been low around 20 %. The least endangered pavilion has been ORL. Waste management and use of biosecurity measures affect significantly at health staff welfare ( $p < 0.005$ ). Working in turns trainings and education level also affect ( $p < 0.005$ ). Waste division is a key step to the reduction of infections spreading. Biosecurity measures are essential for the hospital waste management. Hospital wastes have an important impact on health and the environment. Wastes division by the sources is a key step in infections reduction and spreading.

### **RECOMMENDATIONS**

Protocol providing in case of work accidents so that those can be evaluated, reduced, managed, prevented and documented.

Health education about the risks and exposure prevention, including work practices control and use of security supplies.

Periodic health promotions in the workplace relating to the professional risks in the hospital.

Activities and training relating to the security and health during the job of the nurse, risk evaluation, exposure prevention, incidents, accidents and professional diseases.

Application of biosecurity measures correctly.

Immediate reporting in case of accidents.

Personal protection elements should be always provided and used.

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# MODERN ECONOMICS CHALLENGES AND ACADEMIC COMPETENCE IN ENGLISH LANGUAGE IN RUSSIA: ACADEMIC WRITING COURSE CASE

Diana Izmailyan\*, Olga Oparina\*\*

**Abstract.** *This paper seeks to examine the changing nature of teaching English for Specific Academic Purposes in the context of globalised science, education, and economy. English has become a lingua franca in many spheres, i.e. science, education, business, international relations etc. as more than 80 % of papers and books indexed in such databases as Scopus and Web of Science are in English and the working language of major international conferences and forums is also English. Creating a common database of scientific texts has therefore become top priority within academic communities. Such changes have significantly impacted economic science in Russia and posed serious problems for teachers of English for Specific Purposes including issues related to translating basic vocabulary, concept / term correspondence, and text comprehension and interpretation. These issues have become the focus in the corrected course of English at RANEPА's Institute of Economics, Mathematics and Information Technology. The authors of the course concentrate on the aspects being fundamentally different in English as compared with the Russian academic language and tradition. The aspects being in focus are the choice of article titles, summary and abstract as genres of academic writing. The method implemented in the course involves a combination of theory and fundamental approach inherent for Russian education with a special emphasis on practical application being the feature of Western tradition. It implies theoretical background and detailed algorithm development with its demonstration and step-by-step explanation using particular text examples. The suggested course provides both classroom classes conducted by the teacher using new teaching materials and other online materials accumulated as a result of project work which can be the basis of distant education. Ultimately, these aspects of written academic communication is expected to be mastered to increase the professional and research competitiveness of Russian economists in the world.*

**Keywords:** *English for academic purposes, economics, education, language for specific purposes.*

## INTRODUCTION

Education is the basis of any society willing to have professionally skilled, reliable and up-to-date manpower. The system of education in any country has been shaping for centuries. A wide variety of historical events, national traditions, cultural, religious and other peculiarities have influenced its organisation and principles. Another factor being important in its establishment and formation is the challenges of a certain epoch. It considers the prevailing tendencies in science, business, cultural and political communication. These factors correct the already established system making it more relevant for a certain moment as the main goal of any education is to give well-prepared, adequate and appropriate human resources able to develop the industry and the country.

The main purpose of the article is to suggest the principles of a new Academic English course for students of Economics taking into account the Russian tradition of education and its principles together with the new challenges originating in modern economic changes. These changes have caused novel requirements for language education in Russia.

The authors will focus on the following issues and discuss them in detail:

- the challenges and their consequences;
- the difference between educational principles in Russia and English speaking countries;
- academic communication tradition in Russia and English speaking countries;
- the structure and principles of the suggested course;
- a brief overview will be given regarding the essential aspects being fundamentally different in English as compared with the Russian academic language and tradition or presenting certain difficulties (titles, abstract and summary writing).

## BACKGROUND

It is impossible to deal with any problem without understanding its origins. Fundamental approach presupposes a wide study and consideration, which is the distinctive feature of Russian education dating back to the system of education in the Russian Empire, Soviet time and still preserved in the

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modern educational system. However, starting from the 1990s, the predominance of the English language, recently defined as linguistic imperialism, and the Anglophone tradition of academic communication, both of which have introduced and spread a different approach, have become a major concern for multilingual scholars and educators, including those in Russia.

One of the most significant results of globalisation in the area of science and education in the 21st century is the development of a single information space, which is characterised by an accelerated exchange of scientific data and the gradual unification of national higher education systems. The role of the English language — Latin of modern science, is difficult to overestimate in the current situation. Thus, according to recent studies, more than 80 % of scientific articles indexed in the Scopus and Web of Science databases have been published in English. In Germany, France and Spain, the number of scientific articles written in English significantly exceeds the number of articles published in national languages. Furthermore, English has become the working language of most international academic conferences and forums. Therefore, a successful career path for a young scholar largely depends on the complex skills of academic English proficiency. It is not surprising that more and more universities in non-English-speaking countries, including Russia in recent years, offer English-language educational programs, especially at a master's level.

The processes of globalisation and the rise of the informational society have also had a significant impact on the development of Economic Science. With regard to Russia, the transition from a planned economy to a market economy more than a quarter of a century ago caused a radical change in Economics programs and curricula. Due to the lack of Russian educational materials on the nature and principles of the market economy, a significant number of English-language textbooks were then translated into Russian. Most of them (e. g., course-books by American economists G. Mankiw, P. Krugman, H. Varian, R. Pyndyck, and others) are still central to economic disciplines on the national curriculum. However, the problem of accurate and exact translation of the new conceptual and terminological vocabulary, which did not originally exist in the Russian language, became vital. The tradition of translating economic terms and concepts in the Russian academic community has not yet been fully developed. In this vein, many textbooks, papers and lectures place original English-language equivalents along with Russian-language economic terms.

As a result of the English language dominance on the world academic arena as well as the generally low level of the English language competence in Russia<sup>1</sup>, Russian students often face the problem of correctly understanding scientific texts, efficiently organising information in texts, and accurately using complicated syntactic structures and academic vocabulary. The lack of such skills prevents them from successfully performing research work, and consequently presenting their papers in English-language scientific journals or at English-language conferences. It is important to note that mastering General English, as well as Business English, does not solve the problem of working effectively with scientific English-language sources due to the lack of appropriate academic literacy skills. These include the ability to analyse and interpret texts based on the principles of the Anglophone academic writing tradition and containing a complex conceptual framework.

### **DIFFERENCE BETWEEN EDUCATIONAL PRINCIPLES IN RUSSIA AND ENGLISH SPEAKING COUNTRIES**

As it has been mentioned above, the system of education in Russia differs from the system of education and its principles in English speaking countries. Its roots can be explained by different approaches being the mainstream in the education process. The educational process in English speaking countries is oriented to practical application of acquired knowledge and skills. The principles of 'effectiveness' concern the shortest possible gap between the information presentation, its comprehension and implementation. In contrast, Russian education is oriented at thorough understanding of the problem involving all the possible nuances and aspects (Oparina, 2019).

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<sup>1</sup> According to the EF EPI survey (2017), Russia is a country with low level of English (the 38th position among the 80 surveyed countries).

The best example to demonstrate the difference is Grammar Books. A classic example is as follows. Grammar topic *Complex Subject* in Russian tradition is usually given within a wider theme — the Infinitive. The preliminary issues are the forms of the Infinitive, their usage, their meaning; the syntactical functions of the Infinitive and their particularities and etc. Hence, when students come to the construction of Complex Subject they have already had an idea of Infinitive specificities. They understand the use of Infinitive forms and ways of their translation. On the other hand, some may regard ‘all these theories’ as unnecessary, willing to know only how to use Complex Subject. In that case, the other approach, popular in Grammar books published in the West, is more appropriate. Within the Western approach, certain models are given and improved by a step-by-step drill. The keyword in this approach is the *model* or *template* which is given, it must be memorised and followed.

It cannot be said for sure which system is preferable. We would rather state that each system, or approach, has its advantages and disadvantages bearing in mind the field of study, the level of knowledge and the particular purposes a trainee is facing.

While speaking about the course under development, the intended addressee is a student of university searching for ‘High’ education not only because it is the third stage of education but also the final outcome implies the specialist of a ‘high quality’. In such a case, both approaches should be involved. Russian traditional system will give understanding and thorough overview while the Western (English speaking) system will give the necessary drills and help get good at using them.

### **ACADEMIC COMMUNICATION TRADITION IN RUSSIA AND ENGLISH SPEAKING COUNTRIES**

Nowadays English has become the language of international communication in science and humanities. It is often considered as ‘*Lingua Franca*’ (ELF) uniting people with various national languages into one pool. As far as Academic Discourse is concerned, it is worth mentioning that ‘discourse reflexivity is central to academic discourse, and particularly relevant for academic ELF, where it can help increase clarity and explicitness among speakers from different linguistic and cultural backgrounds’ (Mauranen, 2016, p. 46).

The basic goal of academic discourse is to share information and knowledge. Hence, the task is to facilitate the process of knowledge acquisition and to make it more effective. Academic discourse in all native languages is highly standardised and formalised. These are the unified rules and requirements to insert the new content into a settled format. The reason for such unification is to work out universal rules aimed at simplifying the information exchange (i. e. perception, comprehension, interpretation, feedback) and presentation. Settled templates are conformed to a certain algorithm of information perception; in other words, ‘an addressee friendly algorithm’ is created.

There are various traditions of ‘intellectual styles’ originating from the history of academic style evolution. Many scientists focus on these differences (Bazerman, 1988; Booth, 2015; Lesiak-Bielawska, 2015; Wood, 2001; Zappen, 1991). As A. Duszak noted, referring to other scholars: “Western cultures are individualistic and hence supportive of direct, assertive, and explicit verbal styles. Oriental societies, on the other hand, emphasise collective values and group harmony; their members, rather than speaking boldly and unambiguously, engage in an effective style of communication, trying to defend themselves by vague expressions or by not talking at all. <...> Hinds claims that in Japan, it is the responsibility of the listener / reader to find out what the speaker / writer wants to communicate” (Duszak, 1994, p. 294). The author explained it by historic traditions in the country. As the illustration, A. Duszak highlighted the politeness of Japanese writing, and she added that they tried to avoid debate not to hurt the feelings of the opponent.

A. Duszak also takes into consideration M. Clyne’s ideas on differences concerning German and Anglo-Saxon traditions (Clyne, 1987). According to this concept, English — speaking styles of writing demonstrates that material has been thought out, while German style is ‘cryptic and elitistic, the reader must make an (extra) effort while engaging in academic communication’ (Clyne, 1981; Duszak 1994, p. 294). Speaking about Russian style of academic communication, A. Duszak

mentions the German impact on Russian Academic tradition, however the suggested reason of this influence is rather doubtful. She explained it by ‘long historic tradition, in particular of the philosophy of Karl Marx’ (Duszak 1994, p. 295). In fact, the reason is drastically different — Russian system of education, particularly higher education, was borrowed from the system of German universities. Lomonosov Moscow State University, established as the first university in Russia from the start, was founded in 1755, long before K.Marx and his philosophy. The system of university education formed the style of intellectual communication. Moreover, many other historical events influenced intellectual styles in the countries. Some of these events occurred in one country or a group of countries, others have international impact.

The interesting and paradoxical thing should be highlighted in this connection. The English academic discourse shows the process of thinking while the very system of education operates within certain frames and models. On the contrary, Russian academic discourse states the ideas escaping such things as doubts, language personality with its logic and reason, on the one side, and private experience and even feelings, on the other. However, currently we observe the tendency of working out certain templates in academic communication. Any publication is to follow these templates in order to be published. Moreover, these templates originated in Anglo-Saxon tradition have nothing to do with ‘thinking out’. They imply fixed stratification, organisation and explicit style of narration.

## COURSE DEVELOPMENT

**Method** The course under development takes into account all the aspects considered above. The method suggested by the authors combines the explanatory theoretical background and model oriented principle of material working out. Thus, theoretical fundamentals are given first to the students. The basic information gives a brief overview of the topic and its origin, clarifying the main notions. The next stage is the creation of a step-by-step algorithm provided with authentic examples from practical life, the materials already published and used in real science communication. These are the three pillars of the course: theory, real examples and elaborately formulated algorithms.

The aspects under consideration encompass Title, Abstract and Summary writing.

**Title Writing** Titles and Abstracts are of major importance; they present the focus of the paper, chapter, book or report clearly and concisely in order to get the addressee’s attention. Titles contain important points and key words; they use precise internationally accepted disciplinary terms; and unlike Russian-language titles which are often wordy, too general or ambiguous, contain no more than 20 words. Furthermore, English-language titles tend to avoid questions, describing methods and abbreviations (except for widely accepted in the discipline).

**Abstract Writing** The templates for writing Abstracts in Russian language have existed for quite a long time. As there are several types of abstracts, the abstract to a scientific article varies a lot in journals. The main recommendations are, on the one hand, to be correct and helpful, and on the other — as it is usually stated, should make the addressee be interested in the article. It should contain everything (the description of the problem, material, results, etc.) which may be interesting for a reader. English tradition is fundamentally different. The abstracts in English tradition should have strict structure and contain certain parts: background, objectives/goals, method (s), material, results and conclusions. Such a parameter as “being interesting and attractive” does not exist. Hence, students, while mastering western tradition of abstract writing, first have to be taught to write abstracts by highlighting the mentioned above parts and following the given algorithm. Second, it is essential to encourage students to get acquainted with the authentic articles with abstracts preceding them. The selected materials are to have already been published in respected international journals. At this stage, the students deal with the elaborately developed abstracts which are professionally edited and written by skilled scientists. They are served as the prototypes to be followed and analysed. The third thing is to help students master proper English language constructions typical in academic writing (e. g. Complex Subject).

**Summary Writing** The fundamental difference between Abstract and Summary is that the former is a brief representation of the main results and conclusions of the study, while the latter shows the argumentation structure of the text. In other words, the Summary's purpose is on the one hand to enable the writer to quickly reconstruct the core ideas of a text and to reproduce them concisely in his/her own words, and to enable the reader to determine if and why a paper, chapter or book is worth reading, on the other. Summarising is more than reducing the length of a text. It requires selecting, paraphrasing and presenting information in a logical and well-structured way using appropriate syntactic structures, academic vocabulary and precise disciplinary terminology (Izmailyan et al., 2018). To do this, the following strategies are adopted. Strategy 1 is aimed at identifying the main idea of the text or the topic sentence of the paragraph, and making sure that all paragraphs in the text and all sentences in the paragraph are about ONE topic. Strategy 2 focuses on the principles of Coherence and Cohesion, i. e. one paragraph or sentence smoothly leads into the next paragraph or sentence; all paragraphs and sentences are logically and grammatically arranged and well connected. Strategy 3 is related to clarity, precision and explicitness which is based on such effective rules as 'Less is more' or 'Simplicity breeds clarity'. Strategy 4 deals with developing discipline-specific terminology for students of Economics as well as academic vocabulary used in social sciences as part of academic English corpus in general.

## RESULTS

The preparatory study for the course development and practical experience have shown the difference between English and Russian academic tradition and education. The method implemented in the course tries to involve a combination of theory and fundamental approach inherent for Russian education with a special emphasis on practical application being the feature of the Western tradition. It implies theoretical background and a detailed algorithm development with its demonstration and step-by-step explanation using particular text examples. The aspects mentioned in the course respond to the main requests needed to increase the professional and research competitiveness of Russian economists in the world.

The course takes into consideration the challenges and the changes of the modern world to make the study materials up-to-date, interesting and professionally useful. The suggested course may provide both classroom classes conducted by the teacher using new teaching materials and other online materials accumulated as a result of project work which can be the basis of distant education.

After completion of the given course, the students will demonstrate the following inter-disciplinary and interdisciplinary competences. The interdisciplinary competences include the knowledge of principles behind the structure of academic texts and features of general academic English vocabulary; the ability to analyse, paraphrase and interpret complex scientific content as well as to relate graphic and textual information. The intra-disciplinary competences include the knowledge of and ability to employ economic terminology; navigate and analyse economic discourse; provide accurate economic definitions and build convincing economic arguments.

## CONCLUSIONS

Despite the predominance of the English language in global academic communication and the Russian language as 'Lingua Franca' in Russia, the problem is not the national language, but the lack of academic literacy and academic writing skills, as well as the attitude to the quality of language, which is traditionally connected with philology and neglected by other scientists. Similar problems were successfully overcome by Western academic communities when academic English and academic writing started to be taught in relation to disciplines.

Recent studies have shown that Russian courses and course books in ESP/EAP as well as academic writing in non-linguistic universities are too narrow and lower in quality than Western editions. However, 'both students and teachers see the need for materials produced in Russia', and therefore

materials development is seen as a key area, in which Russian EAP and ESP experts can demonstrate the value of their professional competences (Frumina, & West, 2012, p. 54).

This course may become a good attempt to combine pure linguistic studies and professionally oriented education. At the same time, it will be based on the Russian tradition of education including some aspects of Western achievements in the field.

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# INCREASING LIQUIDITY AND PROFITS AND DECREASING THE RISKS OF CROWDINVESTING USING SMART-CONTRACTS

Dmitry Nagornykh\*

**Abstract.** *In this paper a new approach to crowdinvesting is offered, based on step-by-step budget utilization by the start-up teams. Applied smart-contracts technology allows avoiding several risks and provides additional benefits like liquidity and ease of rights transferring. To prove the concept, the market data based calculation is provided.*

**Keywords:** *crowdinvesting, ICO, Ethereum, smart-contracts, stable-coins, DeFi.*

**JEL Classification:** *G24, O16, P33, P45.*

## INTRODUCTION AND RELATED STUDIES

The recent trends of globalization, automation and the innovative, knowledge-based economy led to demand for alternative ways of fundraising. As a response for that demand, the new ways of funding began to emerge — equity crowdinvesting [Haddad C., Hornuf L., 2019], [Böckel A., Hörisch J. & Tenner I., 2020], [Gimpel H., Rau D. & Röglinger M., 2018], [Hornuf L., Neuenkirch M., 2017] and ICO's [Xu M., Chen X. & Kou G., 2019], [Saiedi E., Broström A. & Ruiz F., 2020], as an alternative to traditional investing.

The main characteristics of the market are the following: extremely high risk and low trust between participants, low or even zero liquidity, global distribution and legal risks, potentially high profits. Obviously, start-ups are quite risky themselves, as an average new business. Add technical risks, common to innovative fields and risk of fraud, and the overall resulting risk seems tremendous.

To stay profitable, venture capital funds tend to track projects and their progress, sign legal agreements and obey “50 miles rule” — do not invest into teams and projects, located more than 50 miles away, which narrows a variety of projects in the portfolio. But what should a crowd investor do, if he has no time and no opportunity to control a project's progress, examine law and legal procedures of this or that particular country? On top of that, there is a need to trust the national legal and bank systems. To let individuals and institutions [Boreiko D., Risteski D., 2020] invest world-wide, the new way of crowdinvesting using Blockchain technology was offered — ICO's [Bons, R.W., Versendaal, J., Zavolokina, L. et al., 2020], [Block J. H., Groh A., Hornuf L. et al., 2020]. In spite of the hype, some point to certain limitations [Bons R. W., Versendaal J., Zavolokina L. et al., 2020] and fragility [De Domenico M., Baronchelli A. 2019] of that type of investment.

Others show other major issues — detecting the quality of ICO [Meyer A., Ante L., 2020], regulation questions [Hornuf L., Schwienbacher, 2017] and more [Li Y., 2019]. [Goethner M., Luettig S. & Regner, 2020] pointed out that investors world-wide are seeking for higher interest and lower risks and pay certain attention to crowdinvesting.

Of course, high risk of investment in start-ups leads to an obvious consequence — an effort to regulate this market. But that is not that easy as it may seem. One of the possible methodologies is offered in this paper.

## MAIN IDEA AND METHODOLOGY

### Usage of Ethereum blockchain as a base for crowdfunding platform

As many agree, one of the risks of collective investing through venture funds is the ability to manipulate the indicators of previous profits. If the ledger is public and keeps the historical data for all the transactions, you can easily check the actual profitability. That is why to maintain the ledger of tokenholders in consistent conditions, to keep it safe, fraud-resistant, public and decentralized, it is easier to use current basis, provided by Ethereum.

As [Xu M., Chen X. & Kou G., 2019] posit, in 2019 blockchain more than capable of meeting the needs of the finance industry. And it is not only technological, but infrastructural and community

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ground [Giudici G., Milne A. & Vinogradov D., 2020] also admit that cryptocurrencies may perform some useful functions and add economic value.

The market demand for crowdfunding platforms was fulfilled with players [Drasch B. J., Fridgen G., Manner-Romberg T. et al., 2020]. Benefits of multi-sided platforms are so important, that one can hardly imagine a crowdfunder market without them. But still, there is a risk of a fraud from the platform itself. That is why in this methodology, the platform just automatically generates the smart-contracts code with parameters, provided by the team and deploys it in the block-chain, so all the collected funds will be kept on the smart-contract's address without any possibility for the team, platform holders withdraw them.

In addition to parameters of emission — number of tokens emitted, team block-chain address, minimum and maximum amount of money needed for the project, team submits a road-map with a concrete KPI and values they are planning to achieve. As [Dorfleitner, G., Hornuf L. & Weber M., 2018] mention in their paper, communications with investors are crucial for success.

### **Step-by-step expenditure of funds using smart-contracts**

After a successful crowdfunder campaign, investors receive tokens, which reproduce a share in start-up's equity and the team receives the very first finance tranche. Let's say a start-up has 10 milestones in the road-map to pass. In that case, the first tranche will be only 10 % of the overall sum, so if something goes wrong and the team does not meet the requirements of the next stage and promised results, they will not be able to withdraw the next portion of money. If they meet the requirements, the smart-contract controls the procedure to be done. First, the team should emit an event that the milestone is passed and an intermediate goal is reached and the proof is provided on the platform in this or that format so investors will accept it. If the investor agrees, the next portion of money comes unlocked for the team. In two weeks by default the rest of the funds of the next round come unlocked. Otherwise, the investor can withdraw the money left on the contract by turning back his tokens. Some tokens will be converted back to money, and some will be kept at the investor's address, so he can sell them later for some remaining cost. Returned tokens can be sold from a smart-contract with a probably higher price, according to the readiness of the project.

### **Integrating stable-coin concept to reduce volatility of base crypto-currency**

One of the risks of investing with blockchain is a severely high volatility, which is a real obstacle in front of long-term investment. Though volatility doesn't play a significant role in ICO returns [Masiak C., Block J. H., Masiak, T. et al., 2020] it plays a crucial role in the way projects make their promises come true.

Stable-coins are invented to overcome that problem — special ERC20 tokens, which price is linked to the price of fiat currencies [Alt R. 2020] The mechanisms of that “sticking” may vary, but if it is centralized (*Tether* and the like), there is a need for trust to its' emission center. The more promising way to assure stability is a lending protocol like makerDAO [Ante L., 2020]. Unfortunately, they had to list another centralized stable-coin (USDC) as collateral, thus becoming quasi-decentralized and vulnerable itself.

But still, it is not that difficult to reproduce makerDAO basic concepts and build a bunch of interconnected smart-contracts, which can automatically maintain the price of a token on a certain level. The main idea of that concept is to emit stable-coins like a credit with some, say 9 % a year, interest. To receive stable-coins, you need to provide some liquid asset to the smart-contract, traded on crypto exchanges. User's assets will be accepted with a certain discount. It is mostly like traditional leverage credit works. If the price of the underlying asset changes, the margin call can occur and the assets will be automatically realized on the market to obtain stable-coins.

### **Receiving additional interest on locked funds**

So, if the stable-coin concept is integrated with the crowdfunding platform, there is an additional interest, which the investor can earn on the funds, which are kept locked on the smart-contract the same way they were kept on the traditional bank deposit.

## DATA SOURCES

ERC20 token can be traded on several exchanges at the same time, as the standard doesn't contain any restrictions on that part. Thus, there is a need to summarize all the trading data from different sources. Fortunately, this part of work is done by one of the well-known web resources — coinmarketcap.com, which provides aggregated market data from biggest crypto exchanges for popular crypto currencies and tokens. It was decided to take 2 arrays of market data, consisting of 20 and 50 ICO's respectively, which collected, as it was said, the biggest funds during the campaign. So they were top-20 and top-50 Ethereum ICO's of 2017. The first array included following instruments:

	name	symbol	since	Price	Market Cap
0	BANKEX	BKX	2018-01-14	\$0.003925 USD	\$1,314,919 USD
1	Gatechain Token	GT	2019-08-27	\$0.565060 USD	\$27,781,989 USD
2	Chainlink	LINK	2017-09-21	\$3.37 USD	\$1,180,238,448 USD
3	Maker	MKR	2017-01-30	\$589.25 USD	\$582,115,983 USD
4	HedgeTrade	HEDG	2019-01-04	\$2.62 USD	\$755,773,835 USD
5	Huobi Token	HT	2018-02-04	\$3.93 USD	\$929,574,491 USD
6	Status	SNT	2017-06-29	\$0.017995 USD	\$62,452,307 USD
7	QASH	QASH	2017-11-22	\$0.057658 USD	\$20,180,146 USD
8	Bankera	BNK	2018-06-06	\$0.002022 USD	\$49,781,998 USD
9	UNUS SED LEO	LEO	2019-05-22	\$0.970197 USD	\$969,711,085 USD
10	Dragonchain	DRGN	2017-12-04	\$0.043867 USD	\$10,458,822 USD
11	SIRIN LABS Token	SRN	2017-12-28	\$0.007295 USD	\$3,587,646 USD
12	Bancor	BNT	2017-06-23	\$0.308733 USD	\$21,348,496 USD
13	Envion	EVN	2018-02-16	\$0.147176 USD	\$18,753,945 USD
14	Polymath	POLY	2018-02-02	\$0.029183 USD	\$14,059,231 USD
15	TenX	PAY	2017-07-08	\$0.061649 USD	\$8,860,017 USD
16	Neurotoken	NTK	2018-02-20	\$0.016911 USD	\$1,334,394 USD
17	MobileGo	MGO	2017-06-12	\$0.006484 USD	\$648,350 USD
18	DomRaider	DRT	2017-10-20	\$0.001263 USD	\$747,193 USD
19	Holo	HOT	2018-05-01	\$0.000836 USD	\$135,813,447 USD

And the second array included: *chainlink, maker, aragon, gnosis-gno, naga,paragon, kyber-network, salt, loopring, hedge trade, bankex, huobi-token, status, qash, bankera, unus-sed-leo, dragonchain, sirin-labs-token, bancor, envion, polymath-network, tenx, neurotoken, mobilego, domraider, holo, enigma, indahash, grid, stox, ripio-credit-network, storj, rlc, airswap, singularity net, basic-attention-token, c20, power-ledger, etherparty, raiden-network-token, request, unikoin-gold, amber, storm, bread, utoken, polybius, OmiseGO, moss-coin, brat.*

After grabbing data and filling the spaces the 50-array looked as follows:

	chainlink	maker	aragon	gnosis-gno	naga	paragon	kyber-network	salt	loopring	hedgetrade	...	request	unikoin-gold	amber	storm	bread	uttoken
0	0.18913	288.00	1.50	78.00	1.54000	1.89000	1.85000	6.91000	0.11885	0.14168	...	0.06070	0.31835	0.16286	0.02536	1.91000	1.83000
1	0.16983	288.00	1.33	90.12	1.48000	0.65899	2.39000	4.18000	0.10480	0.13858	...	0.05262	0.20861	0.26660	0.02621	1.76000	2.38000
2	0.14956	288.00	1.45	78.64	1.39000	0.50891	1.88000	5.78000	0.13350	0.13926	...	0.05182	0.20714	0.21342	0.02332	1.71000	2.32000
3	0.13111	291.42	1.40	88.58	1.27000	0.37104	1.75000	7.27000	0.07532	0.14050	...	0.05102	0.22658	0.24044	0.02330	1.91000	1.79000
4	0.17064	285.85	1.47	86.70	1.25000	0.47194	1.74000	6.52000	0.06212	0.14037	...	0.04327	0.22720	0.21816	0.02384	1.71000	1.51000
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
360	0.27114	439.38	4.58	102.86	0.12050	0.03984	0.37341	0.51556	0.10644	1.68000	...	0.05478	0.04340	0.18038	0.00249	0.19527	0.29042
361	0.27490	439.38	4.33	104.20	0.12210	0.03973	0.38875	0.47012	0.10934	1.68000	...	0.05963	0.04506	0.18643	0.00280	0.21769	0.24422
362	0.26889	439.38	4.12	109.98	0.12990	0.04054	0.41695	0.46888	0.11495	1.68000	...	0.05800	0.04728	0.21774	0.00312	0.20551	0.24357
363	0.29102	439.38	4.25	107.84	0.12043	0.04091	0.39850	0.46236	0.13022	1.68000	...	0.06069	0.04587	0.20121	0.00309	0.21439	0.24489
364	0.33188	439.38	4.00	115.46	0.12406	0.04046	0.40322	0.48461	0.13316	1.68000	...	0.06734	0.04654	0.20711	0.00302	0.21622	0.25682

365 rows x 50 columns

To normalize the data, each column should be divided by the price of the token in the first day:

	chainlink	maker	aragon	gnosis-gno	naga	paragon	kyber-network	salt	loopring	hedgetrade	...	request	unikoin-gold	amber	storm	bread	uttoken	polybius
0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	...	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1	0.90	1.00	0.89	1.16	0.96	0.35	1.29	0.60	0.88	0.98	...	0.87	0.66	1.64	1.03	0.92	1.30	0.76
2	0.79	1.00	0.97	1.01	0.90	0.27	1.02	0.84	1.12	0.98	...	0.85	0.65	1.31	0.92	0.90	1.27	0.84
3	0.69	1.01	0.93	1.14	0.82	0.20	0.95	1.05	0.63	0.99	...	0.84	0.71	1.48	0.92	1.00	0.98	0.75
4	0.90	0.99	0.98	1.11	0.81	0.25	0.94	0.94	0.52	0.99	...	0.71	0.71	1.34	0.94	0.90	0.83	0.54
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
360	1.43	1.53	3.05	1.32	0.08	0.02	0.20	0.07	0.90	11.86	...	0.90	0.14	1.11	0.10	0.10	0.16	0.35
361	1.45	1.53	2.89	1.34	0.08	0.02	0.21	0.07	0.92	11.86	...	0.98	0.14	1.14	0.11	0.11	0.13	0.37
362	1.42	1.53	2.75	1.41	0.08	0.02	0.23	0.07	0.97	11.86	...	0.96	0.15	1.34	0.12	0.11	0.13	0.36
363	1.54	1.53	2.83	1.38	0.08	0.02	0.22	0.07	1.10	11.86	...	1.00	0.14	1.24	0.12	0.11	0.13	0.35
364	1.75	1.53	2.67	1.48	0.08	0.02	0.22	0.07	1.12	11.86	...	1.11	0.15	1.27	0.12	0.11	0.14	0.35

365 rows x 50 columns

The quotes were taken from 30 of January as a start of the earliest token trade.

So if the value of prices falls below the  $1-0.1*n$  level, where  $n$  — is the number of the stage in the roadmap, we assume that investors will make a decision to return the rest of the funds. Here we assume that each start-up has 10 stages and each of them takes 10 % of overall funds collected.

Results and conclusion

The balanced diversified portfolio of 50 tokens (2 % each) and “buy and hold” strategy will show 18.56 % profit, while with the method proposed with 10 steps it will show 45.98 % profit and the clause of return will take place in 27 cases. The remaining value of tokens will give additional 2.75 % to overall profit, so it will be 48.73 %. On an array of 20 tokens, strategy with 8 stages will show 50.4 % profitability against 16.2 % with “buy and hold”.

It should be mentioned that in the strategy in this or that way there is a belief that if the price of the asset falls down, it will not return back. This strategy could probably work on markets with very high risks and the proposed methodology, based on ethereum smart-contracts, could be the key for transparent, low-risk world-wide crowd investment.

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# TECHNOCRATIC UTOPISM AND HUMAN POTENTIAL OF THE “AKADEMGORODOK 2.0” PROJECT

Elena Erokhina\*

**Abstract.** *The article presents an analysis of two potential scenarios for the development of the “Akademgorodok 2.0” Project. The optimistic scenario is focused on preserving the subjectivity of the local community of the Novosibirsk Scientific Center (NSC), relying on the “local authority” of NSC, the power of identity and traditions, the international reputation of Novosibirsk Akademgorodok in the global scientific community in implementation of the project objectives. The pessimistic scenario assumes further peripheralization of the Siberian science. The article raises the question of the possibility of peripheral communities to defend the right to subjectivity, articulating their request for autonomy by referring to the “local authority”. To show the fierce character of dispute as to the future of the Project, we shall cite a respectable expert. Experts’ estimates contain a clear contradiction between great goals and unfavorable initial conditions which is set by concepts of participants in the Project concerning a desired future of improved copy of «yesterday». If the strategic affirmation level implies creation of a principally new eco-environment, the level of interests of individual subjects contains an expectation that the project will solve the problems accumulated in the past. Though NSC employees and Novosibirsk Akademgorodok dwellers demonstrate a clear-cut positive identity, there is a problem of secondary NSC perception “from outside”. Such belief correlates to the Skolkovo model as the only successful Stanford’s clone in Russian realities. Within the mobilizing modernization paradigm any other examples including Akademgorodok come to be “secondary” to a certain extent. The innovative environment which is favorable for new ideas and projects originates advances of technological science and projects of mega science level. The mobilization strategy produces a simulated effect similar to an explosive growth of low-quality articles in international scientific publications caused by introduction of quality indicators of scientific work performance.*

**Keywords:** *Novosibirsk Akademgorodok, institute, infrastructure, social epistemology.*

**JEL Classification:** *H12.*

We are witnessing profound social changes stemming from a new way of life and the ability of people with the help of technical means to overcome physical distance, mobilize people, goods, financial flows, as they say, “remotely”. At the same time, the “brave new world” brings, among other things, new forms of control over the individual, and preservation of the old contradictions, caused by previous inequalities. One of these contradictions is the imbalance in spatial development. The proximity or remoteness from the center is evident when considering citizens’ access to social benefits and opportunities that come unevenly to different territories. However, the contradiction between the center and the periphery is not so obvious when we talk about the development of innovative products, knowledge-intensive technologies and science itself as such. Nowadays it seems obvious that the networked nature of scientific knowledge production allows “doing science” almost everywhere. However, this is unlikely to be true in all cases.

The focus of this research case is the “Akademgorodok 2.0” Project. Just like any other innovative project, it requires an assessment of development risks. This circumstance initiated a number of public discussions, including in Novosibirsk Akademgorodok itself. Based on the content of these discussions, centered around the talks over the list of instructions of President of the Russian Federation “On Drawing up a Development Plan for Novosibirsk Akademgorodok” and the instructions of the Government of the Russian Federation with the same name dated February 8, 2018, it seems to be critical to identify the opportunities and risks of this project.

The article presents an analysis of two potential scenarios for the development of the “Akademgorodok 2.0” Project. The optimistic scenario is focused on preserving the subjectivity of the local community of the Novosibirsk Scientific Center (NSC), relying on the “local authority” of NSC, the power of identity and traditions, the international reputation of Novosibirsk Akademgorodok in the global scientific community in implementation of the project objectives. The pessimistic scenario assumes further peripheralization of the Siberian science. The article raises the question of the possibility of peripheral communities to defend the right to subjectivity, articulating their request for autonomy by referring to the “local authority”. “The local authority” of the community under

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consideration goes back to the memory of the Khrushchev Thaw, one of the fruits of which was the creation of the Siberian Branch of the USSR Academy of Sciences by its “founding fathers”: M. A. Lavrentiev, S. A. Khristianovich, S. L. Sobolev. However, there are a number of discursive problems caused by ambivalence of the representation of Novosibirsk Akademgorodok: on the one hand, this is a place of “power and freedom” associated with technological breakthroughs and free thinking, on the other hand, NSC is perceived from the outside as a clone of already existing science polises.

The first inconsistency that may attract attention even of an ordinary individual refers to a historical aspect. The mobilization version in the development of regions and technological policies on their territories might be appropriate in the mid 20-th century. But the reality of the first third of the XXI century is different and requires an innovative scenario. As is known, innovations are more than a technostucture. They are, first of all, social institutions responsible for human development.

The strong point in the Akademgorodok 2.0 Project comprises its promising goals, including new opportunities, capabilities, competences, and new human’s qualities which make it possible to adapt and develop in a sophisticated environment. The most appreciable risk of the Project implementation consists in too much attention paid to the technocratic aspect, in pursuit of yesterday, in an attempt to copy successful models used in other social and cultural environments, in indifference to that constitutes the nature of the Akademgorodok, power of its identity and traditions. Thus, the main inconsistency comes as a dilemma of two scenarios — mobilized and innovative. Former is aimed at growth of actors’ subjectivity, i. e. individuals, groups and communities which create aggregate public wealth: scientific knowledge of the Russian and global level and human potential of Novosibirsk Research Center (Erokhina, Prikhodko, 2019, p. 125–130).

This allows various models for Akademgorodok 2.0 Project implementation to be viewed as alternatives in further NSC development. If the scenario of which implementation implies conservation of its subjectivity in relations with the “project operators”, i. e. ministries, departments, and agencies, makes it possible to decrease standing behind the leading global research and innovation centers in the post-Soviet period, the opposite scenario retains potential further peripheralization of Siberian science.

To represent the both Project’s mobilization and innovation scenarios, we used the frontier and trading zone metaphors needed in historical studies. There is no doubt that NSC infrastructure is to be improved. We only concern that infrastructure comes into the focus of transformations and becomes the key element in the renovation discourse in which case the general rules of game and conditions for “entry” into the Project remain nontransparent.

For the description of the lasting competitive uncertainty situation the frontier concept as a moving boundary seems to be the foremost. This term was coined by F. Turner, the American researcher, to show specific development of the USA as a migration community of a specific kind. The term was taken by Russian researchers of colonization processes in the east of Russia (Ageev, 2005). Ambivalence and conflict as frontier’s attributes best of all characterize the struggle for resources “which are not enough for all”. Examination of the Akademgorodok 2.0 Project as an infrastructural one gives rise to prerequisites for the only efficient mobilization model as its would-be participants suppose if the scenario for implementation of a major and ambitious scheme will be aimed at meeting the interests of individual structures, institutions, and organizations.

The second trading zone metaphor was taken from anthropology and was developed in the history of science due to the “trading zones” concept of Peter Galison (Galison, 1999; Kasavin, 2014). In addition to the description of cooperation between various scientific disciplines, the “trading zones” concept is used in discussions of problems in politics and public values in reference to science and application of scientific knowledge to address public problems (Peters, 2014; Shipovalova, 2019).

Nowadays, science historians widely recognize the role of public expert review in taking important decisions and they underline the importance of laymen’s participation in the production of expert knowledge (Irwin, 2014). In the case under study the “public” party of trading zone where interests of scientific community, civil society and power meet comprises academic community and residents

of the Akademgorodok. Their “laymen” discourse clearly shows two positions: skeptical alertness and cautious optimism.

To show the fierce character of dispute as to the future of the Project, we shall cite a respectable expert. In his interview to RBC of August 19, 2019 Michail Epov, the RAN academician, stated the following: *«They want to convert the Akademgorodok from an international research center to Akademgorodok of Novosibirsk Region. All discussions end in the problem: what to erect on the territory of Novosibirsk Akademgorodok? Science which is to be integrated is divided between “apartments” of different wealth .... In this sense the Akademgorodok 2.0 project is the way to nowhere, the way to erection of a science campus of Novosibirsk Region.*

*Akademgorodok 1.0 is available. A large number of its former researchers work across the world. Only in Houston over 1,200 former employees of RAN Siberian Division and NGU do their jobs. When talking with these people you understand they come from Akademgorodok and they remain such people. I would like Akademgorodok 2.0 to develop in this direction...»* (Points of view: Akademgorodok 2.0 — a myth or a practicable project? August 19, 2019).

Thus, experts’ estimates contain a clear contradiction between great goals and unfavorable initial conditions which is set by concepts of participants in the Project concerning a desired future of improved copy of «yesterday». If the strategic affirmation level implies creation of a principally new eco-environment, the level of interests of individual subjects contains an expectation that the project will solve the problems accumulated in the past.

We do not contest the significance of infrastructural elements in the innovation ecosystem to reproduce knowledge, technologies and finished products, yet we emphasize the key role of rule-institutions. In examining the experience of Stanford and comparing it with the history of Akademgorodok our attention was drawn to nearly similar initial infrastructural conditions. Like development of Stanford, Novosibirsk polis was formed within post-war model of mobilizing modernization (Kuznetsov, 2011, p. 91). The specific ethos of a local community was the last but not the least in emergence by Stanford’s innovative ecosystem of an absolutely new environment (Fyodorov, 2017, p. 125–127). Is Akademgorodok able to develop own ethos using local resources and positive images and go all the way to the end?

To resist pressure from outside players is possible only being supported by a powerful resource. Such a resource for Akademgorodok dwellers comprises memory of its fathers and founders including academicians M. A. Lavrentiev, S. A. Christianovich, S. L. Sobolev, and the unique spirit of Akademgorodok which was clearly demonstrated in free thinking of representatives of NSC’s local community (Case 46, 1968 bard fest, Novosibirsk manifest).

Though NSC employees and Novosibirsk Akademgorodok dwellers demonstrate a clear-cut positive identity, there is a problem of secondary NSC perception “from outside”. To a great extent the problem became more acute in the post-Soviet period because of structural peripheralization of regions in Russia. However, this problem is also measured mentally due to the othering of Siberia and stable belief that science beyond capital centers and globally recognized foreign universities in Europe and North America has the “indigenous” character. Such belief correlates to the Skolkovo model as the only successful Stanford’s clone in Russian realities. Within the mobilizing modernization paradigm any other examples including Akademgorodok come to be “secondary” to a certain extent.

The innovative environment which is favorable for new ideas and projects originates advances of technological science and projects of mega science level. Evolutionary activity is to be introduced at the highest managerial level and self-organization and local government level. The mobilization strategy produces a simulated effect similar to an explosive growth of low-quality articles in international scientific publications caused by introduction of quality indicators of scientific work performance.

In addition, what is needed includes a humanitarian expert review of Akademgorodok 2.0 Project prospects and risks and self-organization of the research community and local NSC community using institutions of academic reputation, civil self-organization, collective memory and commemoration. These structures being the source of the “local authority” may contribute to conservation of NSC

subjectivity as a science policy of the new generation. The near future will show how they will show themselves, whether they will be able to be integrated or will be drawn into the “war of all against all”.

The problem of institutional transformation of the innovative environment must be solved jointly by efforts “from below” and “from above”. To do so, new “trading zones” need to be created, humanitarian expert review procedures are to be initiated, and discussion process is to involve representatives from the local community, including people whose activity is not directly connected to science and innovations. Hence, rest on the “local authority”, power of identity and traditions implies legitimation of the “low-level” institutions of which symbolic capital works for the reputation of the Akademgorodok. Otherwise, ban from taking decisions concerning the future creates conditions for collective deprivation.

Regarding the contradiction between institutional and infrastructural orientations hidden in the project as basic and the conflict between alternative scenarios as the key one we would like to emphasize the role of the “local authority”. In our opinion, the said role consists in protection of community’s interests and reproduction of NSC’s academic subjectivity. The Akademgorodok case shows how social and epistemological problems may be involved in a wider discussion of hegemony and domination. Addressing the case illustrates the ability of peripheral communities, which NSC’s local community undoubtedly belongs to, to stand up for the right to the “big science” and overcome deprivation caused by regional inequality.

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# UNIVERSITY ACADEMIC MOBILITY AS A FORM OF SOCIAL MOBILITY

Elena Klimkina\*

**Abstract.** *This work is aimed at investigation on academic mobility as one of the forms of social mobility of actors of research and educational processes — students, teachers and scientific personnel. The author considers the diversity of social mobility processes in educational, scientific and labor migration, as well as basic parameters that determine these processes. The dependence of a direction of social mobility in the process of academic mobility implementation on the social class of its agents, as well as on other determining social factors, such as gender, age, national identity, race, religion, language, is described. The results of studies of social mobility in the context of academic and scientific migration in different countries are analyzed.*

**Keywords:** *academic mobility, social mobility, social stratification, social institution, labor migration, higher education, class, globalization, social capital.*

Academic mobility in today's world is one of the defining factors of internationalization of higher education, and at the same time it leads to a variety of social movements within educational systems. Fitting into P. A. Sorokins's theory of mobility, academic mobility is not only geographical in nature, but also serves to move individuals from one social stratum to another depending on external and internal factors. Changes occur both in social structures and in the position of individual mobility participants within these or other structures. This problem has been widely examined by the researchers from Russia and all around the world, especially in the last decade, when globalization of the educational space and overall internationalization of education have become one of the key directions of development in this field. The question of higher education internationalization is investigated using different approaches and in the context of various sciences — economics, geopolitics, pedagogy, sociology, political science, etc., and in this paper it is proposed to analyze its sociological aspect.

The process of activation of academic mobility and the growth of the number of students, teachers and researchers, who leave for universities in foreign countries for the purpose of studies, research and teaching, goes gradually, which is reflected in analytical reviews and statistics. Annual data on the number of international students in the world are collected, analyzed and presented in the open sources by such organizations as The UNESCO Institute of statistics, The UN Statistics Division, OECD, etc. According to UNESCO data for 2018 (5), the number of international students of higher education institutions in the world increased by more than a million people from 2013 to 2017 (Fig. 1).

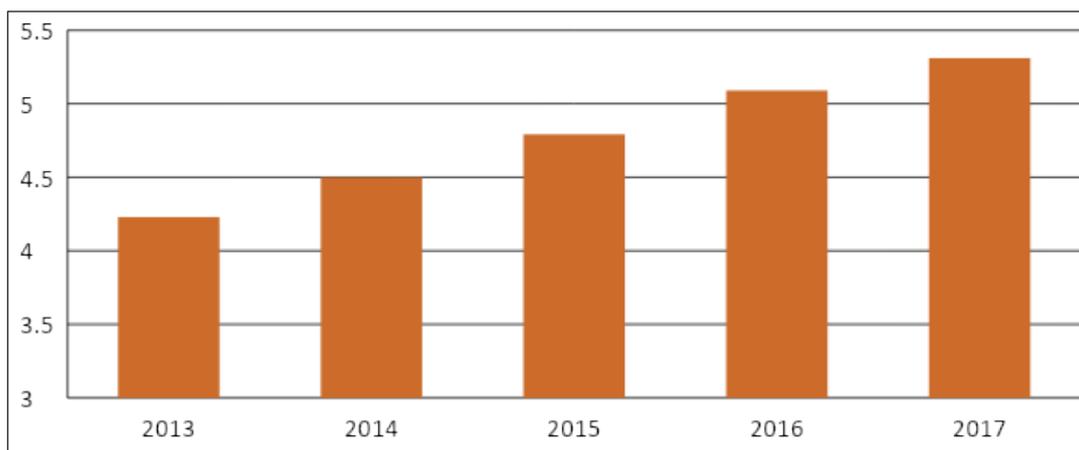
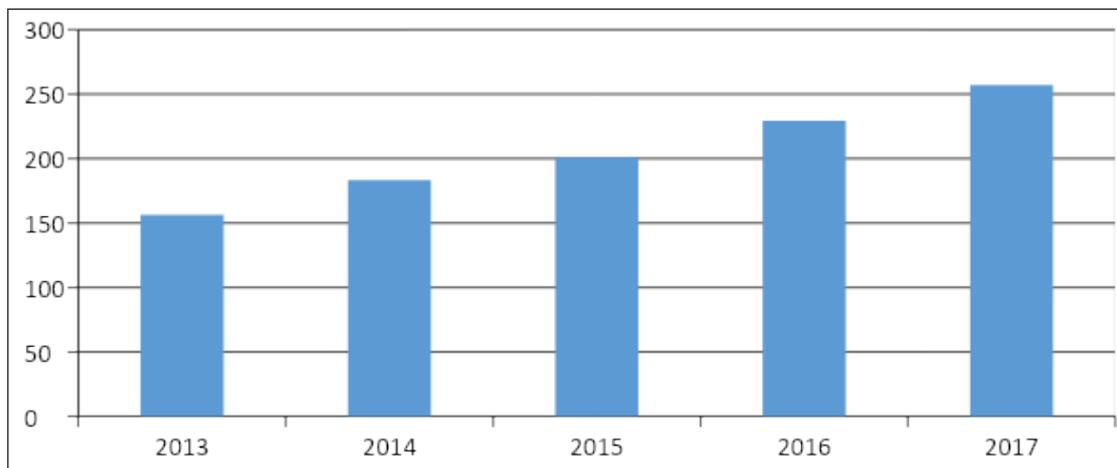


Figure 1: Number of international university students in the world, years 2013–2017, million people (UNESCO Annual Report on Education, 2018)

Though the presented data include only university students enrolled in educational institutions in a foreign country to complete a full educational program (degree program). Participants of short-term mobility programs, students of educational institutions of secondary vocational education, additional

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education, including language courses, were not included in this statistics, neither were professors and research staff. Nevertheless, these indicators demonstrate high growth rates of mobility processes in education and science, which confirms the relevance of the study of this topic both in Russia and in the world. In Russia there is also a positive trend of internationalization of higher education: the number of foreign students is growing every year, which is confirmed by the data of the Center for Statistical Research of the Ministry of Science and Higher Education of the Russian Federation (Fig. 2), and the number of universities accepting international students has grown from 693 to 703 (21) over the past year.



*Figure 2:* Number of international university students in Russia, years 2013–2017, thousand people (Annual report of the Center for Statistical Research of the Ministry of Science and Higher Education of the Russian Federation)

In this study, the topic of mobility is also revealed in the context of socio-cultural and geographical features of different countries in order to analyze and predict the impact of academic mobility processes on individuals, social structures and institutions, as well as on global processes in the society. The processes of mobility in higher education and science in different countries may be fundamentally different due to the fact that a social structure of the educational community depends on many social factors, including presence and degree of influence of different social groups. It should be noted that the processes of academic mobility in different countries can be characterized by the influence of the same principles that operate in social life in general. In particular, cleaving the community into simple and complex social groups, such as racial, family, language, religious, property, professional, etc., is relevant for both academic mobility and the society (2). Thus, in multi religious countries, belonging of an individual, who enters the educational environment from the outside, to a certain religious group will have a less significant impact on his position in the community in general and in the educational environment in particular, comparing to mono religious countries, provided that he belongs to a religious group that is not dominant in this community. The fact that in most Arab countries the social status of women and men differs due to religious dogmas and cultural characteristics is also significant in relation to foreigners, respectively, their position in the educational environment and the attitude of members of the local community will depend crucially on the gender and age of the incoming participants of the mobility. Belonging of individuals to a certain language group is also a very significant factor, since this factor underlies the possibility or impossibility of establishing language communications and is often a barrier to positive dynamics in the process of adaptation in a new environment and, consequently, leads to a decrease in the social status of mobility participants. Taking into account the ideas of J. Habermas (3) about the informational and rational nature of modern society and the primacy of communication by means of language among other social processes, it is possible to assess the factor of belonging of an agent of academic mobility to a particular language group and his ability to dynamics within this group as one of the determining factors in the process of social mobility.

The research is carried out by theoretical analysis of the results of scientific activities of Russian and foreign scientists working in this field, synthesis and analysis of the information received, as well as using quantitative data provided by Russian and foreign institutions that collect and analyze statistical information in the field of internationalization of higher education and academic mobility.

The generally accepted idea of the social orientation of the process of academic mobility for an individual (subject of mobility) is that academic mobility is always followed by upward social mobility, which is a direct consequence of the growth of the internal potential of the subject of mobility, its social skills and professional competencies. However, many researchers question this fact and indicate the need for a more detailed study of this issue. In particular, in the works of Professor M. Leung (4), the reverse processes observed in the implementation of academic mobility are studied, confirmed by empirical research, and clearly illustrated. In particular, the researcher questions the unambiguous nature of academic mobility as a social process that leads to an increase in the social status of its participants, and presents data on the multilayered social impact on mobility participants and their families. Students and young scientists who came to the Northern hemisphere from Asian countries were selected as the main group of respondents. This sampling is based upon the fact that the number of mobile students from Asian countries is 53 % of all international students in the world, the main donor countries are China, India and Korea (6). Since the nature of social mobility among the participants of academic mobility has not been studied much, data on labor migration, especially the migration of qualified personnel, which is characterized by similar social processes, are taken as a theoretical basis. The author describes the phenomena observed during migration through the concepts of the class structure of society, explaining the concepts of “class” through the theories of Marx, Weber, Bourdieu and poststructuralists, and generalizing these theories in order to give his own formulation of this concept. From the point of view of social mobility research, it is important to identify intersections of classes with other social categories, such as gender, national identity (8), belonging to an ethnic group, race, and religion of the subject of mobility. Studies of labor migration show that there are different types of mobility in the structure of social processes — ascending, descending, and mixed, depending on who migrates to where and when. The opposite process is also observed — the ability or inability to migrate depends on the class and other social properties of the subject (9).

Similar research principles apply to the study of the phenomenon of academic mobility, since the phenomenon itself is almost identical to the migration of skilled labor. Thus, the works of American sociologists (15, 16) confirm the fact that international academic mobility is not only useless for harmonization of the social structure, but also generates and multiplies social inequality. However, the authors believe that this phenomenon is typical for the entire higher education system as a whole. It is noted that young people from higher social strata have more opportunities to enjoy the privileges of academic mobility compared to people from lower social strata. Therefore, mobility is often elitist. Participants from more privileged strata, participating in it, accumulate more social capital, which further serves to strengthen class inequality. These conclusions are confirmed and can be based on the Bourdieu capital model (7), according to which education is the main engine of the transfer of cultural capital, which serves as the basis for the accumulation of other types of capital by generations (10). Empirical data on this issue is given in his work by J. L. Waters (11), who studies the motivation of middle-class Hong Kong families who send their children to study at leading international universities in Canada; he notes the accumulation of social capital by the next generation with subsequent ascent of the social ladder as the main motive. In addition, according to some sociologists (12, 13), active participants in academic mobility develop a so-called cosmopolitan identity instead of a national one, which is proposed to be considered as a new form of class identity in the modern era of globalization. These processes are observed not only for representatives of Asian countries moving to Western universities, but are typical for the majority of mobile students in the world (14).

However, returning to the question of the ambiguous orientation of the process of social mobility in academic mobility, it is important to note the need to consider the process in a context, including geographical. Often, the class affiliation of a mobile student in his home country before the beginning

of the mobility is higher than during study abroad, for example, if the student has to perform low-skilled work to pay for education or live in the country of study. Inability to establish a language communication also “declassifies” the mobility subject and, consequently, so does the loss of social connections or the inability to establish such connections with subjects of their usual social status. Social status can also be lowered if there are cultural differences, for example, if an individual’s activity is considered to be a sign of low social status in one society, but it is not considered as such in the society of another country. This effect in labor migration can be defined as dequalification, and in academic migration — as a temporary decrease in social status. As a rule, it is of temporary nature and does not reflect the life, career or academic trajectory of the subject affected by it. Learning individuals in the process of academic migration enter into a number of class transitions and transformations, which, as research shows, ultimately in most cases lead to the accumulation of social capital and the availability of greater material and social benefits in the future than before the beginning of mobility.

In general, research works suggest paying attention to the impact of mobility processes, including academic mobility, on individuals at the micro level and organizations and states at the macro level. However, the impact of academic mobility on the institution of the family is often overlooked. This also includes research related to gender contradictions, which are directly related to the role of women in the family. Research papers show (17, 18) that the “dual” role of women in society, which is established by traditional tenors of life, is one of the main reasons leading to gender segregation, including in labor, scientific and educational migration. It is not uncommon for women to sacrifice their education and career in favor of a partner or children, or to refuse possible mobility for fear of breaking family ties. Gender segregation between members of the programs of academic mobility among young people is less noticeable, while among the older people (30–50 years), who took the decision on mobility for a degree or research activities, the number of women is much lower due to the inability to reconcile such life changes with the life trajectory of the partner, need to take care of children, and fear of a significant change in the usual social and material standard of living downward (19). The problem of gender differences as a socio-cultural phenomenon that affects social structures, institutions, and the lives of individuals is characteristic of different cultures, and is described in the works of both Russian and foreign authors (19, 20).

In general, the study reveals the ambiguous nature of academic mobility in terms of social mobility during or after the mobile period. It is obvious that, despite the variety of possible effects depending on the social group to which the participating subjects belong, academic mobility as a global phenomenon in the field of higher education and science is constantly developing, which is evidenced by the annual increase in the number of inbound and outbound mobile students, teachers and scientists in most countries of the world. Further research on the prospects of academic mobility is important not only from the point of view of macrosociology, which assesses the effects of mobility, its organization and implementation at the level of countries and organizations, but also from the point of view of microsociology and the impact of this phenomenon on individual participants and their families. Working on this topic will allow us to develop more favorable conditions in the future and partially offset the contradictions and negative social effects on participants in the mobility process, thereby creating conditions for the development of this process in the field of internationalization of education.

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# THE STRUCTURE OF SOCIO-SPATIAL IDENTITY: THEORETICAL-METHODOLOGICAL ANALYSIS

Elnara Dumnova\*

**Abstract.** *The article presents a conception of structural relationship and specificity of mentality and mentalité phenomena within the framework of forming socio-spatial identity. A common root of forming mentality and mentalité as socio-cultural phenomena, operating on different levels of social organization was found out; its essence is the need for identification, as an explication of the feature of sociality. Socio-philosophical analysis of mental constructs made it possible to find out general and specific features in the process of mentality and mentalité functioning. Their structures are revealed and the correlation between their structural features and characteristics of constancy/dynamics of mentality and mentalité and their role in forming the components of socio-spatial identity: national and social identities is established.*

**Keywords:** *socio-spatial identity, national identity, social identity, structure, mentality, mentalité, structural levels, structural components, constancy, dynamics.*

## INTRODUCTION

The article has the following structure: first, a short overview of history of studying the problematique, analyzed below, is presented. Secondly, the relevance of exploring the problem of methodological substantiation of treating the terms mentality and mentalité on the basis of systematic-integrative approach is justified. For mental constructs, objectified on the macro-social level, whose subject is the ethnic group (people), the term “mentality” will be in the context of this study. Mental constructs, objectified on the meso- and micro-levels, whose bearers are social groups and individuals, will be labelled mentalité. Thirdly, a theoretical model of the structure of socio-spatial identity is presented, its main components being national and social identities. These kinds of identity are positioned as a result of mentality and mentalité forming and functioning on the different levels of social organization. Fourthly, conclusions, concerning theoretical-methodological comprehension of the mental phenomenon, are put forward, where mentality and mentalité are interdependent, but not interchangeable components. The difference of their structures and structural components, determining specific features of development and transformation of mentality and mentalité under the influence of a number of factors, is substantiated.

## OVERVIEW OF THE RESEARCH LITERATURE

Mental constructs, specific for every society, are one of the most important characteristics of socio-cultural space. This determined scholarly interest in the problem of the mental phenomenon, which developed into a number of trends in studying this problematique since the XX century. The tradition of studying mental constructs takes its origins in the Western social and political philosophy. Within its framework, first, the practice of methodological pluralism in understanding the mental phenomenon arises, through the use of the following concepts: “collective mentalities” (L. Lévi-Bruhl, E. Cassirer, M. Bloch, L. Febvre), “social character” (E. Fromm), “mentality” (J. Le Goff, G. Duby, A. Dupront, Ph. Ariès, P. Burke, Ф. Грэйс, А. Бypo...). Secondly, the mental phenomenon is conceived as a psychological, historical and, later, social one. The socio-philosophical tradition of exploring the peculiarity of the Russian mentality was laid by a constellation of Russian scholars, including N. Y. Danilevsky, V. S. Solovyov, V. V. Rozanov, N. A. Berdyaev, S. L. Frank, B. P. Vysheslavtsev, L. N. Gumilev, I. A. Ilyin, N. O. Lossky, K. G. Manstein, O. A. Platonov, A. I. Solzhenitsyn. Later mentality as a socio-philosophical phenomenon was analyzed in works of E. I. Anufrieva, L. V. Lesnaya, F. T. Autleeva, J. V. Kolesnichenko, G. G. Diligensky et al. The problem of indeterminacy of terminological interrelation between mentality and mentalité was revealed. It is analyzed in studies of G. N. Drepa, A. N. Dmitriev, E. J. Dmitrieva, E. J. Zubkova, A. I. Kuprijanov, T. V. Ivanova et al.

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In contemporary West European and Russian humanities a common approach to defining mentality and mentalité and their structure has not been formulated. Thus there is a need in further theoretical investigation of the mental phenomenon.

There is no doubt that mentality is a system, possessing its specific structure. The analysis of several approaches (D. V. Polezhaev, V. Liubchak, P. Smirnov et al.) to define the structure of mentality reveals a number of contradictions in their views and their limitations with respect to structural components and insufficient theoretical elaboration of structural interrelations between the components and levels of mentality. It is worth mentioning that there is no common opinion with respect to these issues. This makes the further investigation of the field even more pertinent.

The analysis of a number of conceptions of mentality and mentalité makes it possible to present them as interrelated, but not identical concepts and phenomena. Mentality and mentalité are formed on different levels of the social organization, though they possess a similar two-level structure. Mentality is formed and developed on the macro-social level. Its bearers are the ethnic group, people, and nation. Mentalité is made explicit on the meso- and micro-social levels, in the activities of social groups and individuals.

To ground our point of view, it makes sense to ask a question: what is the source and reason for forming mentality and mentalité? Because of sociality, characteristic for humans, i. e. the need for participation, belonging to some social community, their identity is formed. As the contemporary researcher P. Smirnov notes, a measure of group homogeneity or *identity* is formed. The group identity forms in the process of socialization, acculturation, etc. The definition of the term “identity” is being elaborated by a number of sciences, including psychology, social psychology, ethnopsychology. On the other hand, there is no common understanding of this term. Thus it is reasonable to take notice of its sources. This issue was first discussed in works of the American psychologist E. Erikson (Erikson E. H., 2005). Later the term “identity” was analyzed by P. Berger (Berger P., 1995), who identified it with such concepts as “self-description”, “image of “I”.

The author of this article shares the view of the Russian scholar K. S. Gadzhiev (Gadzhiev K. S., 2011) that an integral image that the individual (agent) makes of herself, immutable in all life circumstances where she is conscious of herself is what is meant by identity. Identity is formed in the process of social identification. Contemporary humanities describe many types of identity. The structural-functional approach makes it possible to structure these types, having singled out the basic and minor ones. Their coordination is determined by the level of social organization a type fits.

Taking into account the specific features of structuring the types of identity I think it necessary to introduce the term *socio-spatial identity*. *Socio-spatial identity* is the agent’s identification with a nation, social group and territory, natural-geographical conditions of their development as an indissoluble whole. Consequently, socio-spatial identity, being the end result of identification, i. e. of people’s step by step realization of their belonging to a nation or a social group, has *national* and *social* identities as directions in its structure. It is formed on the macro-social level and has an integrative character. Mentality and mentalité are stages in the process of forming, correspondingly, national and social identities.

Conceptual definition of national identity is complicated by its multifacetedness, expressed in socio-philosophical, psychological, political, cultural, anthropological, ethnic and natural-geographical aspects. The subject of national identity is the individual, belonging to a nation, differentiating itself from the surrounding social environment and opposing itself to the external world. This is expressed in “we” — “they (not we)” antithesis (Medova J. A., 2010). National identity takes shape on the basis of a set of components, including cultural originality of the nation, ethnic and civic bases.

In socio-philosophical aspects national identity can be defined as identification of individuals and groups with the community of the citizens of the state (Medova J. A., 2010). National identification takes place on the basis of mental constructs, acting as criteria for national identity formation. Thus, mentality is the foundation of national identity. Slackening of society’s mental structures in periods of social stagnation and decline causes national identity crisis. This, consequently, makes urgent

social identity, in particular, its various types (personal, group, gender, religious, political, ethnic, professional identities).

Social identity is formed on micro- and meso social levels. Social identity formation is assisted by fixing individual and group uniqueness in corresponding mentality types.

In view of high dynamics of modern society, negatively affecting social feelings of individuals, particularly those of low social status, one can observe a tendency (fragmentarily realized) towards decrease in social activity, paralleled by low self-esteem. This, in turn, determines the problem of personal self-identification on the background of psychical inflation. Personal self-identification can be strengthened and restored by means of group and national identities.

The above stated analysis of identity makes it possible to draw a conclusion about the compensatory function of group and national identities with respect to personal identity. A number of authors point out some structural components of national identity, including worldview, national consciousness, national character, historical memory, etc. (Gadzhiev K. S., 2011). Mentality, as well as mentalité are born and formed on the basis of the foundational need, which we define as the need for self-development and self-identification.

Mentality and mentalité combine static character and dynamics. First of all, they are different with respect to these characteristics ratios. In this light I suggest identifying two levels in their structures: psycho-genetic and psycho-social ones. The first, *psycho-genetic* level, is deeper, more static and resistant to change. The second, *psycho-social* level, is external, more dynamic and predisposed to transformation.

The psycho-genetic structural level is represented by a set of archetypes, stored in genetic memory and transmitted from generation to generation on the subconscious level. Archetypes are the foundation for forming national character, which is also a component of the psycho-genetic level.

The psycho-social level is represented by such components as worldview attitudes, including frames (select forms of behavior), socio-cultural attitudes and values; social action, represented by the whole complex of behavioral stereotypes and social agency (Table 1).

Socio-Spatial Identity							
Structural Components of Socio-Spatial Identity			National Identity			Social Identity	
			Traditional Russian Mentality	Soviet Mentality	Contemporary Russian Mentality	Socio-group Mentalité	Individual Mentalité
Psycho-Genetic (Deep) level	Archetypes		+	+	+	+	+
	National Character		+	+	+		
Psycho-Social (External) Level	Worldview Attitudes	Frames				+	+
		Socio-cultural Attitudes	+	+	+		
		Values	+	+	+	+	+
	Socially Directed Action	Behavioral Stereotypes	+	+	+	+	+
		Social Agency	+	+	+	+	+

Table 1: The Structure of Socio-Spatial Identity

On the basis of the historical and logical criterion I identify three distinct, but interrelated types of mentality: the *traditional Russian*, the *Soviet* and the *contemporary Russian* ones. They have taken shape in the process of social development within the changing borders of the Russian state. Russia has consolidated more than one hundred peoples and ethnic groups on the supra-national level. Thus, in my view, the Russian mentality is identical with the multi-ethnic society, unified by the common statehood. According to L. N. Gumilev, this is the (ethnic) Russian and the Russian multinational *superethnos* (supra-ethnic group). It is worth mentioning that each ethnic group, in parallel with forming its own mentality, is influenced by main features of the dominant one, i. e. the Russian

mentality. In the suggested structure of mentality these types are viewed as stages in the development of the Russian people mentality, giving place to each other and each having its substantial peculiarity.

Mentality is significantly determined by the nation's historical memory, a set of archetypal images and a number of objective factors, determining its stability. But this does not exclude some dynamics under the influence of changing social space.

Considering the suggested mentality structure, it should be started with the archetypes as the deep and stable components of the mass, group and individual consciousness.

The archetypes underlie perception of the world and attitudes towards it. They also form groups of motives, characteristic for representatives of the whole community. This is the reason to view the archetypes as the foundation of the national character.

The Russian social philosophers, thinking about the Russian mentality, often use the term “the national character” (I. A. Ilyin, N. O. Lossky et al.). I will use the following definition: the national character is the sum total of external representations of the national mentality, observed characteristics of the representatives of a community, as a rule compared with and in contrast to other national communities (Rozov N. S., 2010).

The features of the national character represent deeper structures of mentality. The national character is the relatively constant sum total of the social qualities of the nation, shaped under the influence of external factors, which are preserved for many centuries irrespective of social change. These are natural-climatic, geographical and religious factors. Both in the Western and the Russian scholarship the term “national character” can be replaced by the synonymous concept of “national spirit”. The foundation for the national character formation is the collective unconscious, expressed in archetypes, i.e. in socio-genetic matrices. The ethno-social archetypes reproduce the social temperament of the people, peculiarities of its perception of the world, stable models of behavior in different generations. In other words, the national character is determined by deep psychic layers, thus expressing the psychological character of the people.

Despite the relative stability of the first structural level of mentality, in recent studies of psychologists, anthropologists and ethnographers there is an opinion that the structure of consciousness changes in parallel with historical development.

The second structural level of mentality has a greater degree of mobility and flexibility, as it is represented on the level of collective consciousness. As the bearer of mentality is the ethnic group (nation), later I will discuss the ethnic self-consciousness.

The concepts of the ethnic and national consciousness are not interchangeable, though they are synonymous to a great extent. The explanation is that, taking account of the phasic character of the development of the ethnic consciousness, described by J. V. Bromley in his book “*Ethnos I etnografia*” (“*The Ethnic Group and Ethnography*”), the national self-consciousness is a part of the ethnic self-consciousness (Bromley J., 1973).

Another approach to this issue has developed in social philosophy. Phasic character in the development of ethnic communities is not taken into account; in this connection the ethnic self-consciousness is equated with the national one. Thus the national (ethnic) self-consciousness is the property of the ethnic community as a type of collectivity. Ethnic integration on the basis of common material and spiritual culture, including language, customs, and traditions is the foundation of social solidarity and, accordingly, of social order, as it was noted by E. Durkheim. Archetypes, determining frames, attitudes, evaluations, values, various behavioral stereotypes, characteristic for a society, underlie its national ethos.

The difference in the degree of stability between the two structural levels is determined, in this light, by lack of reflective abilities on the level of the unconscious. Thus a set of archetypal images is relatively stable, while on the level of consciousness comprehension of various social changes and phenomena goes on. They in their sum total are the factors of mentality transformation (more precisely — the transformation of its psycho-social (external) level). This level is represented by worldview attitudes and social direction of action, determined by them.

The internal logic of the structure, presented here, presupposes the composite character of worldview attitudes, expressed in a set of social attitudes, frames (select forms of behavior) and values.

Socio-cultural attitudes are formed within an external social environment, characterized by a degree of instability. The consequence is the transformation of life conditions, in particular — societal needs, underlying socio-cultural attitudes.

The specificity of socio-cultural space and peculiarities of economic systems within the framework of a social structure shape the so-called image of the epoch. The product of it man of the epoch. Her image is represented in different historical periods by a changing set of needs and social qualities. Touching upon the vital needs, it might seem that, because of their objective biological determination, they must be immutable and independent of external circumstances. The deeper comprehension of this phenomenon leads to the conclusion that the set of vital needs has really remained the same, but the level of their satisfaction has increased. This concerns the constantly growing standards of food, comfort, security, leisure.

The society today has achieved the post-industrial developmental level. It has moulded a new type of Philistine, centering to a greater degree upon consumption, not production. The post-industrial society creates artificial needs and skillfully instills them in mass consciousness with the final end of making profits. This process is not limited by biological needs, it also involves social needs.

At the same time, social needs are in many respects dependent upon socio-cultural and deep psychological attitudes, which, in their sum total, represent worldview attitudes, according to the conception of the scholar N. S. Rozov (Rozov N. S., 2010). The definition of the social (socio-cultural) attitude is used in philosophy in the context of signifying subjective orientations of the individual, as a group member, towards values, prescribing socially accepted ways of behavior to individuals (Polezhaev D. V., 2003). Not only an individual, but also a social group, a nation, and a society can be the bearer of an attitude or a system of attitudes. How the presence of this component in the structure of mentality and mentalité can be explained? It is characteristic for attitudes to change that they change under the influence of internal and external determining factors.

The problem of mentalité here is naturally linked to the problem of values. Agents' social needs give birth to the system of values on micro- and macro-social levels. When a need must be necessarily satisfied, this presupposes that there is an object, providing for its satisfaction. These objects are of interest for the individual or society. In this connection, the ideal or material objects, existing in social reality, can potentially become values. In that way, in contemporary society social and material needs are to some degree determined by socio-cultural attitudes. Due to them, values, existing on micro- and macro-social levels, take shape.

The basic function of values is integration of individuals with similar life orientations and values into a common system.

Consequently, the concept of values is a characteristic of the agent herself, as values always exist for agents as bearers of activities. This means that they are relative, i.e. are not values generally, but always only in relation to an agent. The structure of mentality includes national values, whose bearer is the nation. I view values as a structural component of mentality, as a supra-individual value system of the whole society or people.

Values, which exist in the contemporary world, according to the basic classification, consist of two sets: terminal and instrumental ones. M. Rokeach has endorsed this classification (Rokeach M., 1973). According to his definition, instrumental values are conceptions of preferable modes of behavior; terminal values are desirable end-state of existence. Terminal values are abstract beliefs of what's most desirable for man. Instrumental values are viewed as the most desirable ways of action. Besides that, basic values exist in every society. They can be terminal or instrumental. The criterion for a basic value is indication of the final preference, logically not derivative from others. Family values are fundamental terminal values. Russian philosophers and sociologists used to view values as natural or social phenomena, or aspects of them, which are useful and necessary for people of a historical epoch or belonging to a social class as an end or ideal. An objective aspect is always present in value

attitudes, as man always values something, an object with some qualities. A subjective aspect of a value attitude an individual or a social group is mediated by personal features of the valuing agent, which also influence evaluation. Thus, values are determined by e. g. a historical epoch, the status of an individual or a social group in the economic, political and cultural societal systems. Some regularities of the process of value change were discovered by K. Manheim and P. Sorokin. They formulated the conclusion that the process of value formation is permanent, but in contemporary society this conclusion has some peculiarities. K. Manheim notes that with social organization and the social communicative system becoming more complex, the transition to more complex values goes in parallel. As a result, values turn from the just creative principle to the system of exploitation and social coercion. One more characteristic feature of contemporary society is the conscious character of value formation and acceptance, while in traditional societies value structures were formed to a greater degree on the irrational basis of traditional culture.

Depending on the type of identification, man can perceive common national values, as well as values, characteristic for a social group. At the same time, a common system of social values is not in contradiction with a system of individual values, which take shape within individual life space. In the context of this study values are understood as a universal component, present in the structure of both directions of identity.

The sum total of attitudes, values and value orientations determines the direction of the individual social action, based on purpose setting and achieving. A theoretical analysis of social direction of action is given by R. Merton in his model of types of adaptation (Merton R., 1966), where social direction of action includes behavioral stereotypes and social agency.

The correlation between a socially approved goal and a socially approved way of achieving it turns the result into a behavioral stereotype, accepted in a society, and following it. Behavioral stereotypes - structural components of the second level of mentality, are the governing physical structures, closely linked to accepted *mental* components and *identities*, programming social action of the actor. These are the repeated, routine *practices* and purposive, progressive strategies, including various types of action (V. Tomas, F. Znaniecki, G. Allport, D. Uznadze). They are liable to transformation, correlated with change and development of socio-cultural space, including norms, regulating the existing behavioral patterns and determining the new ones. The norms explicate, on the one hand, spiritual components of society and, on the other hand, state and social institutions action. In general, this limits individual freedom, setting bounds for its action. The agents of social conditions described are both the individual and the social group, a society as a whole relative to other societies.

Thus, the psycho-genetic level mentality level, reflected in the unconscious, is the foundation of mentality, not susceptible to changing social environment. The psycho-social level of mentality is, on the contrary, is a build on its foundation, reflecting socio-cultural, political and economic change. The psycho-social level of mentality is explicated in mass consciousness. Mentality embraces both the unconscious and consciousness. This makes it possible to establish its synthetic feature with respect to the sum total of characteristics of the people.

The human need for self-identification is expressed on macro- and micro-social levels, resulting in national identity and social identity, respectively, expressed in mentality and mentalité. As we relate the concept of mentality to the whole people, nation, which are its bearers, we need, taking into account social differentiation, an additional category, which can reflect a socio-psychological constitution of a social stratum, cast, social group, etc., being components of society and nation, while expressing differences in their worldviews, values, behavioral stereotypes, etc.

Having studied society on the basis of the systems approach, I come to a conclusion that contemporary society is organized into a complex spatial and hierarchical structure. The basic element of the system is man, while the initial elementary system of society is a social group. In this connection it makes sense to introduce the concept of “mentalité” and to identify its two main types in contemporary society: the *individual* and *socio-group* one. The individual mentalité takes roots in ancestral memory and is complemented with social conditions. I use the criterion of social group (as the bearer of mentalité) functionality to classify the socio-group mentalité. In connection with this

basis for classification, it is possible to identify three types of social groups, each having its mental specificity and peculiarities of the process of its formation and manifestation. These are: (1) socio-genetic group (family); (2) socio-professional group (collective body); (3) multi-functional interest groups.

Thus, mentality and mentalité are related not only as a whole and a part, but also as two directions, having a common root — socio-spatial identity. Their similarities and differences will be considered below.

Mentalité, like mentality, has a two-layer structure, distinguished by a set of structural components. The psycho-genetic (deeper) level is represented by an archetypical set, peculiar to a bearer of mentalité (a social group, a community, an individual). The psycho-social (external) level contains a set of components: frames (select forms of behavior), values, behavioral stereotypes, social agency.

Mentalité is to a greater degree changed under the influence of new socio-economic, political and cultural circumstances on the personality, social groups and communities. It is a more dynamic component of socio-spatial identity, compared to mentality. At the same time, while not denying the interdependence of mentalité and mentality, it is necessary to clarify that mentalité is to be thought of as the result of identification on a micro-social level. As for individual attitudes, this process is correlated with the process of socialization, which continues for the whole lifespan, primarily because of constant change of living conditions. Man accepts new social roles, builds new social contacts, getting new information in this process. At the same time, a mechanism for selecting information and its partial interiorization works. In consequence of that, the formation of attitudes is regulated not only by society, but by man herself. A system of attitudes determines the social orientation of the person, underlies her social action.

The system of individual/group values as a structural component of mentalité has an important structural characteristic, i. e. ranging individual values when they line up in the order of priorities. Thus, the most significant values are defined as value orientations. They are realized on a micro-social level only, can be possessed by the individual as well as the social group. Because of that they are in the structure of mentalité only.

Unlike the structure of mentality, the structure of mentalité contains an additional second-level component — frames (select behavioral schemes). The bearer of mentalité possesses the frames, which fit her ends and values and are guided by expectations of other individuals or social groups, where the select frames are realized. As N. Rozov notes, realization of a set of frames (i. e. cognitive structures for schematization of experience, for “definition of the situation” (G. Mead, H. Blumer) goes by comprehension of social milieu phenomena through bringing what’s going on to something familiar and habitual) by building a behavioral model which can be expressed in the choice of words, gestures, tone, etc. In case of positive external reaction “all behavioral stereotypes and components of mentality, positively backed in this way, will become firmly established in her soul (psychics, personality — whatever you like) as attitudes — foundations of the developing habitus” (Rozov N. S., 2010). Having approved a behavioral model, man defines his/her *social identity*, i. e. individual, group or community beliefs about their place in a social environment, understood through a set of *frames* and *attitudes*. These are the roles, accepted in main spheres of life, as well as the type of relating oneself to accepted *symbols* (G. Mead, C. Cooley, E. Erikson, E. Goffman) (quotation from: Rozov N. S., 2010).

Due to the mosaic structure of contemporary Russian society, quite different mentalités take shape there; born by social groups or strata. Of no small importance is the fact that, together with economic and spiritual crises, the Russian society today is experiencing an identity crisis, bound up with instability of socio-economic development results. The consequence is, on the one hand, mentality transformation and, on the other hand, strengthening of the second direction of socio-spatial identity, i. e. socio-group mentalité. Social identity is no less important identity type, often even more needed by the individual, particularly in the social culture of individualism.

Mentality, which reflects national socio-psychological characteristics, and mentalité, its main point being the specificity of socio-cultural and behavioral aspects of a socio-cultural group, can

exist autonomously. Mentality is notable for its dualistic character, as it contains the traditional basis and innovations. The “tradition-innovation” dichotomy, underlying mentality, reflects its capacity to preserve the accumulated socio-cultural experience, maintaining its transgenerational translation. This makes it possible to freely renovate social relations, as well as to develop social progress in general.

The discrepancy between the psycho-genetic and the psycho-social levels of mentality is inherent in them, thus allowing it to keep its traditional characteristics. At the same time, axial periods in societal development, with their concentration of social change, are the critical zones in the development of mentality. In these zones the accumulation of innovations is going on and overruns the measure of traditions/innovations ratio, thus determining a qualitative leap in the development of mentality, manifesting in the transition from one mentality type to another one. In this connection I identify three types of mentality in the structure of socio-spatial identity: the traditional Russian, the Soviet and the contemporary Russian mentalities.

Now, having analyzed the structure of mentality and mentalité, it is necessary to identify, in parallel with their common structural characteristics, their distinctive features.

As mentalité develops and exists as a result of socio-group identification, it has the property to function on the levels of the individual and group consciousness. Mentality cannot be presented as a sum of mentalités. The presence of mentalités in a society in a historical period is determined by the social structure of this society, by social differentiation on the basis of some criteria. A social stratum or community is present in the same society for the course of its whole history, but its mentalité is marked by social time. The most vivid example is the youth. Comparing mentalité of the Soviet youth, which was young in the time of the Great Patriotic War, and the contemporary youth, it is unlikely that significant common characteristics, from attitudes to behavioral stereotypes, will be found. Demographic and morphological characteristics in many respects are passed through time, but social time leaves its impression on spiritual, moral qualities and outward appearance of the bearer of socio-group mentalité.

Society is multi-mental. But exceeding the threshold level of mentalité diversity in a society leads to the growth of social tension and potential conflicts. At the same time, coexistence of various mentalités can be realized by the way of tolerant dialogue, resulting in innovations. On the background of a static mentality the more dynamic process of mentalités formation can be observed. The archetypes, representing the psycho-genetic level in the structure of mentalité and mentality, are developed and translated on micro-social level, then projecting at the macro-social level. An individual acquires her archetypical set through translation of genetic memory in family.

Thus, having revealed the interrelation between the structure of mentality and mentalité, I come to a conclusion that mentality and mentalité function on different social levels. For all this, it is necessary to emphasize that in different spaces of time one of the two directions of socio-spatial identity is becoming dominant by turns.

In times of social stability national identity, developed in favorable conditions of state development, is the dominant one. In periods of the social system destabilization due to inter-state and ethnic conflicts, we are witnessing the crisis of national identity. In these very periods social identity becomes the dominant one. Mentalité is liable to transformation to a greater degree. This can be explained by its dependence upon socio-economic, political and other circumstances, characteristic for a space of social time. Mentality (particularly its deeper level) has a greater resistance to external influences, though its external structural level is also influenced by social environment.

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# AIR QUALITY ISSUES IN ALBANIAN PORTS

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**Abstract.** *In Albania, as in other countries around the world, ports have long been gateways for global trade and are critical to the national economy. Ports are situated close to heavily populated urban areas, thus creating a major source of air pollution for the inhabitants. The atmosphere in port areas is polluted not only by ordinary sources, such as industry, road and rail traffic but also by ships emissions, dust and harbour activities. Since ships engines run on heavy fuel oil, rich in Sulphur, the contribution of ship engines emissions to air pollution in port areas is considerable. In addition, a wide range of diesel powered machinery, straddle carriers, terminal tractors and cranes, contributes to more air pollution through air emissions and dust. As environmental agencies look to improve air quality, ports are becoming a target for air pollution control measures. In this respect, measures must be taken not only at global level, as the new Sulphur cap limit endorsed by IMO from 1 January 2020 promises, but also at national level. The aim of this paper is to give an outlook on the measures to reduce air pollution, taken in Albanian ports. The author emphasizes the need of additional contemporary measures and practices to reduce air pollution in port areas. Consequently, improving life quality of inhabitants and further strengthening port and urban community relations.*

**Keywords:** *ports, ships, energy, air, pollution.*

**JEL Classifications:** *L, O, R, Y.*

## INTRODUCTION

The air quality impacts of ports are significant, with particularly large emissions of diesel exhaust, particulate matter and nitrogen oxides. The health effects of these air pollutants to residents of local communities include asthma and other respiratory diseases, cardiovascular disease and premature mortality (Bailey & Solomon, 2004). Due to increasing global trade, activity in ports has been steadily increasing and will continue to increase in the future. Ports are increasingly becoming sources of local and regional air pollution, impacting the health of workers and people living in communities near ports and major transport corridors. Therefore is of paramount importance the evaluation of air pollutants in ports and their sources. Among the numerous sources of air pollution are marine vessels, trucks, locomotives, and cargo handling equipment used for moving cargo. Several studies in ports around the world have demonstrated the detrimental effects of air pollution in residents around port areas. Moretti & Neidell, (2011) estimate that ozone causes at least \$ 44 million in annual costs in Los Angeles from respiratory related hospitalizations alone and that the cost of avoidance behavior is at least \$11 million per year. Emissions from ships engaged in international trade in the seas around Europe, the Baltic, North, Mediterranean and Black seas, as well as the northeastern Atlantic were estimated to be 2.6 million tons of SO<sub>x</sub> and 3.6 million tons of NO<sub>x</sub> a year in 2000, according to Quantification of Emissions from Ships Associated with Ship Movements Between Ports in the European Community, a 2002 study commissioned by the European Commission, (Sharma, 2006). Up to date there are no significant studies conducted to measure the impact of air toxins released in port areas in Albania. However, due to the high concentration of residents around ports areas, the location of ports in Albania — adjacent to urban areas — measures must be taken as soon as possible to mitigate the negative impacts of air pollution caused from port activities.

## SOURCES OF AIR POLLUTION IN PORT AREAS

Ocean-going vessels typically use the least expensive and often the dirtiest fuels available, HFO. On a technical level, HFO which is often referred to as “refinery residual”, is a complex group of hydrocarbon products that consist of the highly viscous and tar-like residues of the crude oil refining process. On a less technical level, HFO which is the world’s dirtiest and most polluting ship fuel, is a tar-like residual waste from the oil refining process (Deere-Jones, 2016). As a result, marine transportation has been referred to as an incineration service for a waste product. It is evident that the quality of fuel used for ocean-going vessels is not comparable to the quality of fuels used in the automotive sector. The combustion of this refinery residual (HFO) releases in the atmosphere high

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levels of pollutants such as particulate matter, carbon monoxide, sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), volatile hydrocarbons, and low-molecular-weight polyaromatic hydrocarbons and their derivatives (Sharma, 2006). Furthermore, the lifetime of ocean-going vessels is longer compared to the automotive sector, which means older engines are common and therefore more air toxins are propagated in the atmosphere. Ships spend a sizable proportion of time moored in harbours and ports. During this time, ships have to keep their lighting, systems, air conditioning and sanitation running and their auxiliary engines are constantly in operation. Therefore, ships are producing emissions the whole time and even near densely populated areas.

In addition, various and multiple operations in ports, mainly cargo handling operations, require the use of heavy equipment and machinery, such as cranes, reach stackers, straddle carriers, forklift, tractors, trailers, locomotives, ... etc. Altogether, these diesel-driven equipment, often operating 24/7, adds to the load of diesel emissions in port areas. We must also consider the harbor crafts used in port operations, such as, pilot boats, tugs, bunker vessels, harbor master crafts, ...etc, which are powered by diesel engines. About 98 % of the particles emitted from diesel engines are less than 10 microns in diameter (PM<sub>10</sub>), 94 % are less than 2.5 microns in diameter (PM<sub>2.5</sub>), and 92 % are less than 1 micron in diameter (PM<sub>1</sub>) (Sharma, 2006). Particulate Matter (PM) is strongly associated with heart and cardiopulmonary disease.

### MARPOL CONVENTION AND AIR POLLUTION FROM SHIPS

Environmental issues for shipping are regulated globally with uniform standards and others with stricter regulations in specific areas. When it comes to air pollution from ships, environmental regulations enforce strict limits to the sulphur emissions. Annex VI of the MARPOL Convention aims for a reduction in sulphur oxide emissions from ships. Sulphur emissions are strictly regulated in areas in North America and North Europe. The limits applicable at sea in Emission Control Areas (ECAs) were reduced from 1.5 % to 1 % in 2010 and furthermore reduced to 0.1 %, effective from 1 January 2015. The ECA area represents about 0.3 % of the world's water surface. The ECAs do not include any other European waters such as the Irish Sea, Mediterranean Sea and Black Sea (Notteboom, 2011). In addition, China has already applied the 0.50 % cap for some ports, with possible expansion to all coastal waters from January 2019. With the revised Annex VI, the sulphur content of bunker fuels is set to be reduced progressively from 2010 to 2020 as illustrated in Figure 1.1. In 2016, the International Maritime Organization (IMO) decided on global regulations to reduce sulphur emissions to air from maritime shipping starting from 1 January 2020.

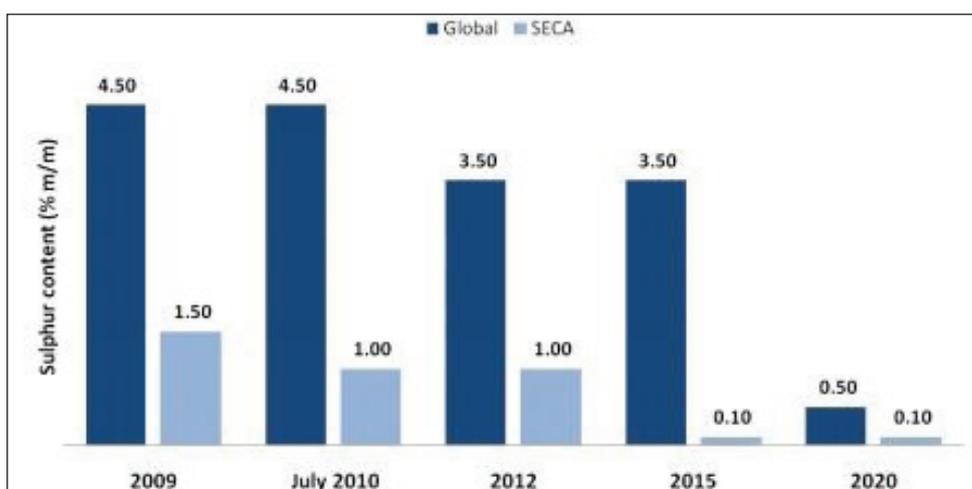


Figure 1: Revised MARPOL Annex VI Sulphur Limits for Bunker Fuels (Svensson, 2014)

The sulphur content in fuel oil has a large impact on the particle level in the exhaust gas. Ships which are already in service have three options to reduce sulphur emissions in the ECAs: 1) switch to low sulphur fuel oil with less than 0.5 % sulphur, such as desulphurised HFO, 2) use scrubbers,

ships can fit an exhaust gas cleaning system or 3) retrofit the vessel to use alternative fuels, such as liquefied natural gas (LNG).

In order to comply with the new 2020 IMO's sulphur regulation, ship owners must evaluate options and strategies to have the best competitive edge in the market. It is evident that the options of lighter fuels and desulphurisation through employment of scrubbers entail costs, including higher energy consumption at refineries. Furthermore, retrofitting vessels to use alternative fuels (LNG) is expensive and requires additional tank space. Whatsoever the choice, the low sulphur fuel requirements of 2020 has come with increasing operational costs for shipowners. However, since the MARPOL Annex VI is implemented at a global level, IMO is leveling the play field for shipowners.

### **MITIGATING AIR POLLUTION IN PORT AREAS**

Whereas, MARPOL Annex VI Sulphur Limits for Bunker Fuels Annex VI aims for a reduction in SO<sub>x</sub> emissions from ships, significant developments have already taken place in ports around the world. Alternative Maritime Power or Cold Ironing is an anti-pollution measure which helps in reducing air pollution generated from diesel generators by connecting ships to the onshore power supply (OPS) and shut down generator sets in order to decrease exhaust emissions and noise. Cold Ironing is used when the ship is at a port so that the diesel engines of the ship do not need to be used. Initially launched in Los Angeles in 2004, Cold Ironing has found a wide use in ports around the world. Challenges in the use of onshore power supply (OPS) result from several small berths needing individual units, long cables and cable reel storage, as well as the need for several vessels to install the onboard technology.

An additional source of port operations regarding high air pollution emissions are cargo handling equipment: yard tractors, cranes, reach stackers, forklifts, trailers, etc. For the reason that all these heavy equipment is mainly powered by diesel engines, they are one of the most significant sources of port emissions contributing to regional pollution. Some emission reduction strategies adopted in various ports are: use of less polluting diesel fuels in ports, installation of pollution control retrofit equipment on diesel engines, modernisation of fleets and use of cleaner alternative fuels, such as, natural gas (LNG) and electricity. The installation of pollution control retrofit equipment on diesel engines, known as diesel particulate filter (DPF), is highly effective in the elimination of particulate matter (PM) or soot from diesel exhaust. DPF is a cost effective method to improve air quality in ports works sites. Furthermore, measures can be taken also at the regulatory level. In the Ports of Los Angeles and Long Beach, the California Assembly Bill (AB) 2650 permitted terminals to adopt either gate appointments or off-peak operating hours as a means of reducing truck queues at gates (Giuliano & O'Brien, 2007). In addition, both ports approved a San Pedro Bay Ports Clean Air Action Plan (CAAP) in November 2006 setting a goal to ban pre-1989 trucks and have a fleet of compliant drayage trucks meeting 2007 emissions standards before the 1 January 2012. All trucks that did not meet the 2007 Federal Clean Truck Emissions standards would be banned from the port. To help subsidise the cost of newer, cleaner drayage, a fee of \$35 per TEU was instituted in November 2008 for non-2007 compliant trucks (Clott & Hartman, 2013).

### **GREEN POLICIES IN ALBANIAN PORTS**

Air quality is a priority of the Albanian ports considering that the majority of them are in close proximity to urban areas. This is especially accurate, regarding the main and largest Albanian port, the port of Durres. Due to the proximity to the urban and dense populated area — the port is located in the city of Durres — environmental policies are crucial in the sustainable development of the port.

The port of Durres handles all kinds of goods, including dry and liquid bulk cargo, pallets, general cargo, chemicals, dangerous cargo, containers, passengers ...etc. Various commodities are imported through the port, such as wheat, cement, fuels, construction material, foodstuffs, containers, and exports minerals such as chrome, iron-chrome, scrap, containers, ...etc. The port processes ships up to 30,000 DWT with a maximum length of 220 meters, in four specialized terminals (DPA, 2020). Cargo types and volumes are shown in Tab. 1.

YEAR	2014	2015	2016	2017	2018	2019
Tons	3,717,992	3,496,366	3,463,946	3,683,773	3,614,605	4,072,541
Cargo Ships Total	1,702	1,617	1,552	1,572	1,561	1,655
TEU Total	99,350	104,060	118,829	118,270	134,526	145,762
Container Ships	165	184	200	206	185	191
Passengers Total	774,682	774,411	839,598	879,905	854,637	878,687
Ferries Total	1,133	1,090	1,036	1,012	1,010	1,052
Autos Total	215,081	216,918	240,473	258,754	256,061	259,175

Table 1: Cargo flow 2014–2019 in the port of Durres (DPA, 2020)

The port of Durres has participated in several projects regarding green policies, so the port can act as a driver for the implementation of more efficient and greener transport policies. For example, the SUPAIR project supports port authorities in the implementation of low-carbon and multimodal transport and mobility solutions within a macro-regional context. The transnational dimension is ensured by the partnership, which pulls together 7 ports of the Adriatic-Ionian region: port of Trieste, Venice, Koper, Bar, Durres, Thessaloniki and Piraeus. The aim is to establish a network of low carbon emission ports in the Adriatic and Ionian Sea through the exchange of good practices and solutions on greener, safer and more efficient transport systems. In this respect, some of the solutions include: green upgrading of port machinery, installation of emission control systems, truck flow management, green shipping...etc. The port has developed its Environmental Management System, identifying vulnerabilities from specific issues and risks within the port and the city. In addition, the port implements its Action Plan as a tool for timely resolution of critical issues, as well for monitoring the effectiveness of the processes selected for sustainable development.

The port of Durres is one of the biggest energy consumption entities in Albania and until now, there has been no significant effort to switch to renewable sustainable energy (Alite, 2019). The Durres Port Authority (DPA) has taken some behavioral steps such as control of HVAC by a central office, which monitors energy consumption. Additionally, awareness campaigns have been carried out so that energy savings are brought into attention of staff and energy-demanding equipment are now being switched off while idle or after working hours (Power, 2020).

The DPA main objective is to shift by 2030 to 50 % of the electric energy consumption to renewable energy sources (Alite, 2019). To achieve this objective the DPA is considering investing within the Port area in the construction of Solar panels sites, in order to shift part of the energy consumption. Renewable energy sources, in this case Solar, offer new possibilities in efficiency improvements and energy bill cost cutting. The generation of electricity from Solar panels installations within the Port area can be utilized to provide electric power in areas such as yards lightings, port building lightings, including offices, workshops and air condition systems. On the other hand, Solar technology offers the best option, as it addresses complex concerns including Energy Efficiency, GHG emissions and Environmental Sustainability. Table 2 shows the evaluated available areas within the port for installation of Solar panels and the respective annual energy output.

	Area	Installed Power (KWP)	Annual Production (KWH/KWP)	CO2 emission avoided (kg/year)
1.	Zone 18 — Administrative Building Roofs	1,027.40	1,361.00	839,409
2.	Zone Parking 1	1,718.25	1,388.38	1,431,350
3.	Zone Parking 2	2,388.96	1,396.60	2,000,560

Table 2: Planned areas for Solar PV installations (Alite, 2019)

The DPA plans to provide onshore power supply in all terminals. Onshore power supply (OPS) will reduce emissions from the ships by enabling them to shut down their auxiliary power generators while at berth, avoiding GHG, air and noise pollution from ships located at berth. The provisions of OPS to ships come with its issues and challenges, mostly financial and technical. In order to realize OPS infrastructure in ports, high investment is required, related to the installation of transformer

stations, frequency converters, cable management systems and grid extension. On the other hand, the ships located at berth must have the suitable equipment, such as connection panel and control systems or on-board transformers. Considering the fact that 50 % of the port energy demand is expected to be obtained through renewable energy sources until 2030, the implementation of OPS in the port of Durres is expected to have a high impact on the reduction of GHG emissions.

In addition, another measure included in the action plan, aimed at mitigating the negative externalities of port operations, is the reduction of port carbon emissions by converting all vehicles and machines that are used for port operations into electric ones (Tab. 3). It is important to mention that the main challenge for the DPA is the higher investments required for the shifting to electric vehicles.

Equipment on containers terminal	Reach stacker	x2
	Forklift (16 tons)	x2
	Forklift (32 tons)	
	ECH (7 tons)	
	Trailers	x5
Equipment on ferry terminal	Tyre crane (100 Tons)	
	Towing Heads MAFI	x3
	Towing Head SCANIA Lifter	
Equipment on eastern terminal	Grifera at different capacities	x25
Equipment on western terminal	Grejfera (5–10 tons)	x16
	Auto cranes (45 tons)	x2

Table 3: Diesel equipment to be replaced with electric vehicles (DPA, 2020)

Replacement of all the equipment (tab. 3) with energy efficient electric vehicles will contribute to reduce the GHG emissions but also noise emissions considerably. Ideally, an advanced level of electrification should go hand in hand with the increasing use of renewable energy to ensure real emission-free port operations (Schmidt, 2019). Moreover, electricity can be recuperated and reused, example: capturing the energy released during the braking for subsequent storage and utilization in the powertrain. In electric vehicles, the control of energy recuperation is one of the most demanded and challenging research and technological tasks contributing both to performance and safety (Shyrokau, Wang, Savitski, & Ivanov, 2013).

Other measures to improve the energy efficiency of the operating vehicles include the use of low rolling resistance tires to save fuel and proper tire inflation pressure. Promising energy and emission savings are possible since tires account for 20–30 % of a vehicle’s fuel consumption. Through the usage of energy saving tires, up to 10 % fuel savings are possible (Schmidt, 2019). On the other hand, proper tire inflation pressure improves energy consumption, reduces braking distance, improves handling, and increases tire life.

In order to attain the expected outcomes, the Durres Port Authority will have the main role to monitor the implementation of the measures and based on the data collected to make the needed corrections. As Capehart et al, (2012) notes, for an energy management plan to be set up, top management must exhibit will and commitment in providing leadership and resources to implement studies, projects and programs and the integration of energy management functions in the company organizational structure. This is precisely what is expected from the top management of DPA. Furthermore, the DPA must release every six months a periodic report on the Action Plan Measures (Alite, 2019). Table 4 shows the timeline for each measure of energy efficiency investment.

ENERGY EFFICIENCY INVESTMENT	TIMELINE
Installation of Photovoltaic Plant	2 years
Conversion of all port vehicles from diesel engine to electrical ones	5 years
On-shore power supply to ships (OPS)	15 years

Table 4: Timeline of implementation (Alite, 2019)

## CONCLUSIONS

At a global level, new shipping regulations aim to tackle air pollution and climate change issues. Nevertheless, measures must be taken also at the regional and local level. The future success of the Albanian Port, is not exclusively linked to their excellence in the marketplace and to sound financial performance. The Port's success also is directly connected to its responsible environmental practices. Sustainability is a key to the future. The Albanian ports must develop and operate to meet current needs without compromising the ability of future generations to meet their needs. In general, the port authorities are active to enhance the environmental performance of ports. This is more evident in the case of the port of Durres. Previous assessment shows that Port of Durres has the potential to mitigate air pollution and GHG by introducing measures such as Green Port Policy, new technologies and renewable energy sources. The DPA needs to address and overcome capacity challenges affecting the progress, such as, organizational structure, resources, technology and institutional barriers. Regarding the organizational structure the Port of Durres already has an Environment Directorate reporting directly to the Port Authority.

However, backing further enhancement of environmental standards requires incentives and support from the government. For example, a significant barrier can arise from OPS infrastructure at port terminals. These terminals need extra electrical capacity, conduits, and the infrastructure, in order to accept power cables from vessels. Incentives from the government are required to make the system work efficiently. On the other hand, the use of shore energy to power the ships berthed in the port, can be increased through practices as the exclusion of the V. A. T tax from the electricity bill of ships using the service.

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# THE ROLE OF WOMEN ENTREPRENEURS IN THE ALBANIAN ECONOMY. HOW TO OVERCOME BARRIERS

Eri Gjoka\*, Raimonda Duka\*\*

**Abstract.** *In recent years, women's entrepreneurship in Albania has been growing. However, great disparities continue to exist between regions, and in many districts, start-ups continue to be dominated by men. According to INSTAT recent data, 25.7 percent of the enterprises are managed by females. Women's businesses tend to be located in the large urban areas and to cluster around providing services. So women manage one third of enterprises in Tirana, the capital of the country. The paper explores the understanding of barriers encountered by women entrepreneurs in Albania and examines to what extent an enabling environment is currently present or under development in Albania. The main tools that we used to collect data were a questionnaire with women entrepreneurs in 12 districts of Albania. The findings of this study show that, despite the many advances made by women in entrepreneurship, barriers remain. The analysis in the paper identifies the main areas where more work is needed in order to reduce and avoid the barriers encountered by women entrepreneurs in Albania. The paper also provides recommendations that can be adopted by the Government of Albania to further overcome the barriers that inhibit women entrepreneurs reaching their full potential.*

**Keywords:** *women's economic empowerment, women entrepreneurs, barriers.*

**JEL Classifications:** *J22, L26, J16.*

## INTRODUCTION

The private sector in Albania is operating under the conditions of a fully open-oriented economy. Most businesses in Albania are Small and Medium Enterprises. Referring to the statistics of INSTAT, the numbers of active subjects by the end of 2018 reached 162.835 and 57.1 percent of the enterprises have only self-employed.

Albanian Government has implemented a broad regulatory reform in the last two decades in the framework of improving the business and investment climate, aiming at reducing maximally the administrative barriers and the cost of the businesses. Some of the reforms undertaken are: (i) reform in the area of business registration; (ii) reform in the area of licensing; (iii) reduction of fiscal burden for businesses; (iv) using the e-procurement and e-filing.

Albania's progress in recent years in respecting and promoting gender equality is also highlighted in a series of international commitments as well as in its national legal and policy frameworks. To promote gender equality, since 2008, Albania passed the Gender Equality in Society Law, established the national gender machinery, improved the Law on Measures against Violence in Family Relations, opened the first national shelter for survivors of domestic violence, established the mechanism of coordination and referral of domestic violence cases in several municipalities, and approved the new National Strategy on Gender Equality (2016–2020).

In recent years, women's entrepreneurship has been growing; women-owned businesses, as well as female self-employment, currently constitute an important and growing share of the business population in a significant number of districts. According to a recent data, 25.7 percent of the enterprises are managed by females<sup>1</sup>. Women's businesses tend to be located in the large urban areas such as Tirana, Durres and to cluster around providing services such as hair-dressing, child care, tailoring, dentistry, pharmacies, and legal counseling. It can be difficult to accurately gauge the number of women run business because some businesses that are officially registered in the husband's name are actually run by the wife<sup>2</sup>. However, great disparities continue to exist between regions, and in many districts, start-ups continue to be dominated by men.

The Government of Albania, recognises that women's economic empowerment constitutes a necessary condition to promote gender equality and address gender-based violence. And for that

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<sup>1</sup> INSTAT Register of Economic Enterprises, 2019, pg. 1–2.

<sup>2</sup> Gender Alliance for Development Centre. (2010). Women's Labour Rights in Albania. Financed by the European Union.

reason has put a special emphasis on promoting women entrepreneurs, by supporting them through access to credit, providing training and information.

## **DEVELOPMENT OF PRIVATE SECTOR IN ALBANIA**

The private sector contributes with about four-fifths of GDP and 82 % of total employment<sup>1</sup>, and it currently constitutes the main factor and contributor to the economic growth, employment and alleviation of poverty<sup>2</sup>.

Albania's transition process has resulted in a business sector dominated by SMEs which have a share of more than three-fifths of GDP and employ around four-fifths of total workers. Micro and small enterprises dominate the services and trade sectors, while medium-sized firms are concentrated in construction and industry<sup>3</sup>.

Referring to the statistics of INSTAT, the numbers of active subjects by the end of 2018 reached 162 835 and 50 % of the enterprises have their main center of activity in the districts of Tirana and Elbasan. 50 % of the active enterprises have been created during 2005–2009. 62.7 % of the enterprises have only self-employed and 26.4 % of the enterprises are managed by females, from which 50 % are trade activity<sup>4</sup>. As per INSTAT, 90.9 % of enterprises employ 1–4 employees.

The distribution of enterprises according to the economy's sectors is: trade (28.6.2 %), agriculture (25.9 %), other services (18.6 %), accommodation and food (12.4 %) and transport (10 %)<sup>5</sup>. 65 % of the enterprises are producers of services mainly dominated from commercial activity, hotels, coffee shops and restaurants, information and communication.

A broad regulatory reform is being implemented in the framework of improving the business and investment climate, aiming at reducing maximally the administrative barriers and the cost of the businesses.

## **POLICIES FOR THE DEVELOPMENT OF PRIVATE SECTOR**

The Albanian Government launched a comprehensive reform for the improvement of the business climate, the reduction of administrative barriers and the implementation of the European Charter of SME-s. The main reforms implemented during the last decade to improve the business climate are as following:

- Reform in the area of business registration: A new law on business registration was enacted by Parliament on 3 May 2007<sup>6</sup>. Registration offices located throughout Albania enable a business to complete all the registration procedures locally and it provides several important benefits for businesses: a simpler, faster and less costly process of registering a new business.
- Reform in the area of licensing: The new law reduced the number of licenses and permits from 200 to only 65 categories and subcategories. With its one stop shop services and shortened, transparent, and fast procedures the NBC has reduced the administrative barriers to free initiative, cuts down the costs related to the licensing process for businesses, and minimized the level of informality, thus improving noticeably the business climate in Albania.
- Abolition of Profit Tax for businesses with a turnover of up to 14 million ALL, until 2029. The purpose of this change was to relieve the tax burden for certain categories and promote production.

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<sup>1</sup> EU progress report for Albania 2011, pg. 43.

<sup>2</sup> Economic and fiscal program, 2008–2011, pg. 55.

<sup>3</sup> EU progress report for Albania 2011, pg. 48.

<sup>4</sup> Register of Economic Enterprises, 2019, pg. 8–9.

<sup>5</sup> Register of Economic Enterprises, 2019, pg. 32.

<sup>6</sup> The Law no. 9723 “On the National Registration Center” established the National Registration Center as a new central public institution.

- Currently, Albania uses e-procurement, which is a web-based application supporting the automation of tendering activities of the various public authorities. The e-procurement became mandatory from January 2009.
- The Albanian General Department of Taxation introduced electronic filing in October 2007 as part of the reform efforts to establish a new modern, efficient and fair tax administration in Albania. Starting March 2010, the Government of Albania made it obligatory to e-file for all taxpayers subject to VAT and profit tax. Electronic filing is also introduced for income tax and social security contribution.
- According to the report of the EU commission (2020) the development of private-sector in Albania remains below its potential, because the efforts to improve the business environment lack effective policy instruments and a more strategic approach.
- The business environment is vulnerable by structural weaknesses. The lack of business know-how, low financial literacy and high degree of informality hamper access to financial resources for the private sector, especially for agro, micro and small businesses. The other obstacles to doing business are an inadequately educated workforce, inefficient public transport, and corruption.

## LITERATURE REVIEW

Research into the field of female entrepreneurship is a relatively new phenomenon. Until the late 1970s, research focused solely on entrepreneurship without recognising the impact of gender as a factor. The 1980s saw the first exploratory studies of female entrepreneurship although these sought to develop their characteristics (i. e. demographic characteristics, motivation) and developing typologies of women entrepreneurs. More recent studies (1990s onwards) saw a shift of interest towards more specialised issues such as management, access to finance, or the impact of networks and support agencies on female-owned companies.

A great proportion of the literature on female entrepreneurship focuses on the obstacles encountered by women when they start/run a business. Attention was on identifying these barriers with a view to removing them and hence promoting an increase in female entrepreneurship.

In the early literature on female entrepreneurship, women were seen as having more difficulties than their male counterparts in obtaining start-up funding. In some cases this drove women entrepreneurs to work with a male business partner, to have their husband/partner co-sign a loan application, or to use their own personal assets — particularly their home (Goffee and Scase, 1985; Hirisch and Brush, 1986; Marlow, 1997; Carter, 2000). As a consequence, women tend to seek small personal loans in turn leading to the creation of smaller ventures.

Overall, securing finance remains a strongly problematic issue for many women entrepreneurs (Carter *et al.*, 2002; McClelland, 2003; Stevenson, 2003). Carter *et al.* (2002) argue that, very often, growth orientated women entrepreneurs will resort to ‘bootstrapping techniques’ in the early years of the business, while they consolidate the company and gain more experience. ‘Bootstrapping techniques’ rely on raising financial resources from their own personal assets (i. e. (re)mortgage, private loan, loan from family or friends) and/or relying solely on the internal revenues of the business.

Lack of business knowledge and training was often reported in the literature: women tend to have less work experience related to the area in which they set-up their business, while the opposite tended to be observed for men (Watkins and Watkins, 1982; Hirisch and Brush, 1986; Carter, 2000). This inexperience can have a negative impact on the start-up of their businesses (Carter, 2000).

For Stevenson (2003), lack of management skills and opportunities to learn practical issues of starting, surviving and growing their own enterprises were significant for women entrepreneurs.

Establishing credibility is reported as a major gender related obstacle to women entrepreneurs. As Goffee and Scase (1985) state, “clearly many of the difficulties faced by female proprietors stem from the fact that they are seen to lack the credibility that men have as business owners. Bank managers, customers, employees and husbands do not always grant business women the same esteem and competence they accord to men” (Goffee and Scase, 1985).

Similarly, Marlow reports that even though credibility is a problem encountered by both men and women entrepreneurs, women identified it as a gender related problem. Over half the women reported feeling that their authority was undermined when they were assumed to be ‘the secretary’ or ‘wife’ (Marlow, 1997).

Literature on female entrepreneurship confirms that family responsibilities cause much concern and act as a massive barrier for women when setting-up or running a business. Carter and Allen (1997) assert that the performance of a business will be linked to the manner in which its owner chooses to balance home and work. It is, therefore, claimed that most women’s businesses tend to remain small because “women continue to take full responsibility for the reconciliation of paid work and household labour, including housework, childcare and care of adult dependants” (Marlow, 1997; Drew, 1999).

The literature also highlights some gender related obstacles to the setting-up and running of a business. One such obstacle is that women in business tend to lack confidence. The impact of this lack of credit, lack of capital, late payments and undercharging, was claimed to have an important impact on the rate of growth of new businesses.

In addition to the lack of experience and skills, women are disadvantaged in relation to access to networks and business support agencies (Rees, 1992; Marlow, 1997). Networking continues to be a barrier for women entrepreneurs since the strong male business culture that prevails relies heavily on ‘old boys’ networks’ and informal networking.

Kjeldsen and Nielsen (2000) point out the fact that women tend to be less growth-orientated than their male counterparts. They argue that this is to a large extent due to the fact that women are seeking more flexibility and freedom to juggle the many aspects of their life, such as work, leisure and family life. Furthermore, Kjeldsen and Nielsen (2000) report that some women tend not to want any growth from their business because they argue that this would conflict with their purpose of choosing the entrepreneurial way to obtain greater flexibility.

## EMPIRICAL DATA

### Objectives and methodology

This study has been undertaken in recognition of the growing interest and efforts to promote and strengthen Women’s Entrepreneurship in Albania. The study explores the understanding of barriers encountered by women entrepreneurs in Albania and examines to what extent an enabling environment is currently present or under development in Albania.

The study used both quantitative and qualitative research methods. The literature review examined documentation through library access and the use of internet facilities to track information on female entrepreneurship from national and international sources.

Quantitative information for this study was gathered through interviews. The survey instrument was a standard questionnaire and interviewing method was a face-to-face interview with 109 women entrepreneurs in 12 districts of Albania. To generate the sample<sup>1</sup> an online database of the National Business Center was used. Businesses were randomly selected. The margin of error for a sample size of 109 is  $\pm 5.5\%$  at a 95% confidence level.

### Findings on barriers and government performance

The major barriers that women have in Albania are centered on the issues of tax policy, lack of favorable sources of financing and difficult access to loans. While the less important barriers evaluated by them are corruption and organized crime, inability of access to new markets and the customs (*table 1*).

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<sup>1</sup> The methodology used is Judgmental sampling or Purposive sampling — We choose the sample based on what we thought was appropriate for the study, because there is a limited number of people that have expertise in the area researched.

Types of barriers	Ranking
Tax Policy (high taxes and fees)	1
Lack of favorable sources of financing	2
Difficult access to loans (high interest rates)	3
Excessive bureaucracy adding to cost and time of starting/ expanding business	4
Social security contribution	5
Poor efficiency of state administration and judiciary	6
Poor infrastructure	7
The level of pressure on business, bribery, arbitrariness and controls for the pressure effects	8
Price of energy (electricity, fuel)	9
Lack of incentive measures	10
Number of licenses required to start/expand a business	11
Lack of loyalty in competition	12
Poor coordination government and private sector	13
Competition of foreign and services (cheap imports)	14
Customs	15
Inability of access to new markets	16
Corruption and organized crime	17

*Table 1: Biggest barriers to conduct business effectively*

According to the respondents the government should work on the following issues in order to reduce the barriers for women entrepreneurs:

- increasing the financial resources for business by proving soft loans for small business and facilitating loans for women entrepreneurs;
- reducing the tax burden;
- increasing the control of tax authorities against businesses that work without licenses;
- reducing the fines imposed by the various controls;
- eliminating bureaucracy in local and central level;
- law Enforcement in all areas;
- ensuring conditions for fair competition.

The respondents are not optimistic about the economic development in the year 2021. About half of them said that the investments will be reduced and 62 % of the respondents said that the number of employees will be decreased due to the pandemic situation (Covid-19).

56 % of the total respondents are not satisfied with the reforms undertaken by the government during the period 2015–2020 to improve the business and investment climate. The respondents from non Tirana are less satisfied than the respondents from Tirana. There is no difference at the level of satisfaction when we analyze the data by economic activity and by legal status of the company.

About one third of the respondents said that the Council of Ministers is ready to remove the barriers that slow down the economic development and decrease the burden of doing business. But 36 % of respondents that belong to the group “non Tirana” said that the government is not ready to act in this way.

The majority of respondents believe that the best way for removing the barrier encountered by women entrepreneurs is lobbying with women MPs. However the small business has no capacity to lobby. More than half of respondents (53 %) claim that the council of ministers has not consulted properly the business community in the preparation and the implementation of the main economic reforms.

## CONCLUSIONS AND RECOMMENDATIONS

Entrepreneurship among women, no doubt improves the wealth of the nation in general and of the family in particular. Women today are more willing to take up activities that were once considered the preserve of men, and have proved that they are second to no one with respect to contribution to the growth of the economy.

The findings of this study show that, despite the many advances made by women in entrepreneurship, barriers remain. The analysis identifies the following areas as targets where more work is needed in order to reduce and avoid the barriers encountered by women entrepreneurs in Albania.

- Plan and enforce mainstreaming strategies carefully.
- Strengthen government capacity to deal with women entrepreneurs issues.
- Improve access, participation and the role of women entrepreneurs in decision making.
- Set up a functional monitoring and evaluation system based on relevant, reliable and up-to-date equality data.

*Some issues that should be addressed in the near future from Government are:*

- Increasing the capacities of the line Ministries to integrate gender issues into the initial planning stages of strategy design and government policies.
- Support or carry out ex ante impact assessments of economic and fiscal policies, determine the extent of adverse impacts on women entrepreneurs and redesign policies accordingly.
- Support the Ministry of Finance and Economy to establish instruments and methodologies that incorporate gender in all business data.

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# DICHOTOMY OF POSITIVE AND NORMATIVE IN RELATION WITH THE CRISIS OF ECONOMICS

Gennadiy Lyaskin\*

**Abstract.** *The paper demonstrates the inconsistency of normative and positive distinction with traditional criteria. The author argues that this contradiction should be considered as an immunizing stratagem of the neoclassical paradigm of economics. Proponents of behavioral economics tend to avoid the direct falsification of canonical concepts by the dichotomy of normative and positive analysis. The author substantiates the need to overcome defensive methodological strategies in the search for a new paradigm of economic theory that is more adequate and closer to reality. Solving this problem has become a priority with the onset of the global economic crisis, the intellectual response to which should be a new stage in the evolution of fundamental economic knowledge.*

**Keywords:** *behavioural economics, immunising stratagems, methodology of economics, normative science, positive science.*

**JEL Classifications:** *D90, B49.*

## INTRODUCTION

The economic theory is going through hard times, if not a period of systemic crisis. The manifestations and causes of the crisis in fundamental economics are a serious problem, the full analysis of which is beyond the scope of this research. However, it is impossible to ignore the most difficult questions posed to modern economic theory. The academic community, as well as politicians and the public can be highly critical about the current state of things in economic theory. Main areas of modern economic theory criticism being that:

1. The theory is logical contradictory.
2. And it is out of touch with reality. It has a very weak degree of corroboration (K. Popper's terminology).
3. It does not perform a cognitive function.
4. It operates with axiomatic assumptions that are disconnected from the reality.
5. It unconditionally trusts in the self-regulation of the economic system.
6. The political application of the orthodox neoclassical doctrine in the Russian Federation during the post-Soviet period led to disastrous consequences.
7. It has a weak predictive potential.

The most striking political fiasco that undermined the authority of generally accepted macroeconomic concepts is associated with a failure in the predictive function. Authoritative economists working for the governments failed to predict any of the devastating crises of the 21st century that undermine social stability. Public bewilderment was expressed by Queen Elizabeth the II at the briefing at the London School of Economics: "Why did nobody notice it" (Chorafas, 2013).

Here I share the position of a group of unorthodox economists, such as Steeve Keen, who claim that economic theory needs systemic reform (Keen, 2011). In our opinion, a qualitative improvement of the existing theoretical base will not be enough. We are talking about profound transformations, Thomas Kuhn called scientific revolutions. Using his terminology, we will point out that the emergence of a new paradigm requires at least two conditions:

1. Accumulation of a critical volume of anomalies, which means observed facts that cannot be explained by the existing paradigm;
2. Development of competing scientific schools that offer alternative approaches that can explain a bigger number of phenomena.

At the moment, there are several competing schools that are in opposition to neoclassical orthodoxy. These include Marxian political economy, Behavioral Economics, Institutionalism, Econophysics, and Post-Keynesian Economics. Marxism is based on a most powerful philosophical foundation, but

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it is unacceptable from an ideological point of view. Unfortunately, the remaining areas have not yet reached the level of universality the neoclassical program offers.

However, alternative schools are developing new approaches and accumulating an arsenal of critical arguments. More and more phenomena are being registered that traditional theories are powerless to overcome, which in Kuhn's terms indicates the accumulation of anomalies. Again, the failure to predict systemic macroeconomic crises, such as the Great Depression and the Great Recession, has been a severe blow to the reputation of mainstream science. At the moment, during the 'Great Lockdown' period, we can observe the falsification of some macroeconomic theories firsthand.

## DICHOTOMY OF POSITIVE AND NORMATIVE SCIENCE

At the micro-level, observations show multiple cases of inconsistency between real behavior patterns and the mainstream economic theories. In this regard, significant results have been achieved within the framework of a relatively new scientific school -behavioral economics.

A general conclusion that can be made based on the published results of observations and experiments is that people rarely behave in accordance with the canonical axiom of complete rationality. This is an exception rather than a rule.

This might serve as a basis for the revision of neoclassical theories, at least some of them. However, the representatives of behavioral economics try to refrain from the aggravation of academic controversy. According to the methodological principle introduced by Daniel Kahneman and Amos Twersky, neoclassical theories are recognized by the behavioral school as valid, but within strict limits — as a **normative** theory (Kahneman, 2011).

Economists have been distinguishing normative theories from positive since at least the middle of the 19th century. At the moment, the scientific community has come to a generally accepted opinion about their criteria. Let's look at how neoclassical economists divide positive science and normative attitudes. This methodological element became the canon that characterizes the neoclassical vision of the social sciences principles.

Positive analysis suggests answers to "What is" question? This is a descriptive analysis that deals with the facts of the real world, reveals regular relationships between them, and explains their existence. Positive theories are objective, refutable in principle, and according to Karl Popper, they make a full-fledged science. In contrast, normative statements answer the question "what ought to be" and represent theses of the *desired* state of the world. Normative analysis according to this well-established criterion includes recommendations, moral attitudes, and value judgments *having non-economic grounds*. Normative statements are subjective and scientific methods are irrefutable. Although methodologists recognize that there are no clear boundaries between these types of theories, strict standards of a scientific study prescribe the most objective research procedures for social scientists.

Now, please pay attention to the meaning attributed to the positive — normative dichotomy in behavioral economics. To demonstrate the originality of the interpretation, I will quote the founding fathers of behavioral economics, Daniel Kahneman and Amos Twersky (Kahneman, 2011, p. 431).

"The normative analysis is concerned with the nature of rationality and the logic of decision making. The descriptive analysis, in contrast, is concerned with people's beliefs and preferences as they are, not as they should be. The tension between normative and descriptive considerations characterizes much of the study of judgment and choice".

As can be seen from the above quotation, behavioral economists refer to normative theories that are based on the axiom of rational decisions. That is, all the micro and macroeconomics theories. But this obviously does not coincide with the role attributed by economists and methodologists to the main economic theory. Throughout the history of the neoclassical tradition of economic research, its representatives have unhesitatingly applied their theories to real human behavior.

Economics does not prescribe economic behavior based on the premise of rationality, it describes it. In other words, the main part of the theoretical corpus of neoclassical theory (with the exception of welfare theory) is positive social science.

I'd like to quote the famous work by Milton Friedman, *Essays in Positive Economics* (Friedman, 1953, p. 39).

“Economics as a **positive science** is a body of tentatively accepted generalizations about economic phenomena that can be used to predict the consequences of changes in circumstances”.

Let's return to the behavioral version of the dichotomy between positive and normative science. There are a few more statements that show that this version of the concept of normative analysis contradicts the Orthodox one (Thaler, 2020, p. 290–291).

“By normative here I mean a theory of what is considered to be rational choice (**rather than a statement about morality**). In contrast, a descriptive theory just predicts what people will do in various circumstances”.

The originality of the behavioral interpretation of normative economic analysis is highlighted by a quote from Eric Angner and George Loewenstein (Angner, Loewenstein, 2012, p. 680). “They (behavioral economists) retain neoclassical theory as a **normative ideal and source of null hypotheses**”.

Thus, a normative theory is an unattainable ideal, a point of reference from which descriptive theories of real human behavior grow. This is significantly at odds with the traditional content of normative science: prescriptions and recommendations derived from subjective values of a moral or political nature. It is quite logical that behavioral economics utilized the system of models that originate from the ideal model of absolute rationality as its normative basis. That is, the neoclassical theory.

In behavioral economics, we see the substitution of the concept of “normative science”, thus attributing an unusual content to the term. Then the question “why?” arises.

The demarcation of the fields of the neoclassical and behavioral schools of economics make it possible to avoid the conflict of scientific approaches and hope for their further coexistence. This conciliatory position was voiced by Richard Thaler (Thaler, 2020, p. 494): “The lesson here is not that we should discard neoclassical theories. They are essential both in characterizing optimal choices and in serving as benchmarks on which to build descriptive theories”.

These considerations can reason to regard the revision of the positive-normative dichotomy as immunizing stratagems. We should highlight one distinctive feature in this case. The stratagem is not born in the depths of the dominant paradigm, but is proposed by a competing current. Isn't it amazing?

It seems that there are no hopes for a paradigm revolution in economic theory on the part of the behavioral school. Approaches can coexist, neoclassical based on normative roles, behavioral as a descriptive theory that meets the criteria of positive science.

Regardless of serious criticism, neoclassical economics will remain a dominant trend. As Alan Kirman put it (Kirman, 1989), the economic theory has seen off many attacks, not because it has been strong enough to withstand them, but because it has been strong enough to ignore them.

There is a possibility that the scientific revolution in economics is unacceptable for ideological reasons. Neoclassical economics for the Western world performs exactly the same function as the political economy of socialism performed for the USSR, which means the function of a worldview platform.

## CONCLUSION

Economic theory is in desperate need of a new paradigm. Fundamental economics should offer a better explanation of the nature of real life in society. It is necessary to increase the predictive potential of economic science, especially in relation to crisis phenomena. A full-fledged scientific revolution requires the accumulation of a critical volume of anomalies. This requires a conscious policy of the scientific community to reject immunizing stratagems. Here we have analyzed one of them — the substitution of the traditional dichotomy of positive-normative science in the framework of behavioral theory. In our view, social scientists should not shy away from direct refutations of mainstream theories. This methodological doctrine may be overly aggressive, but it is the only way to accelerate the emergence of a new paradigm in economic theory.

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# ANALYZING THE COMPETITION IN PUBLIC PROCUREMENT PROCEDURES USING GRAPH ANALYTICS

Ioannis Fountoukidis\*, Ioannis E. Antoniou\*\*, Nikos C. Varsakelis\*\*\*

**Abstract.** *The aim of this work was the analysis of the competition in public procurement procedures for a specific group of health goods with network analysis. By using graph analytics, the presented work intends to support the better understanding of the market function. The data were retrieved from the platform “Opentender” for the period 2009–2019 from 33 EU countries and institutions. Graph indicators as network’s density, centrality, entropy and conditional entropy were used to assess the competition on the part of the buyer and the sellers also. Net analysis contributes to the exploration of possible existence of oligopolies at the specific market and focuses on the big buyers’ behavior. The data visualization explains the role that economic operators and hospitals play in the market. This methodology presents for the first time how the oligopsony, the monopsony interacts with the oligopoly, the monopoly or the competition in a specific market sector. Using real data, the whole methodology is presented in order to identify further or lost opportunities for economic operators, or situations in which the public sector should intervene to regulate competition issues. The results revealed heterogeneity in the behavior of contracting authorities and in the behavior of economic operators, which is not proportionally related to the economic value of the products to be supplied. The study of competition, which is the main concern of the present, leads us to a similar conclusion. On the part of sellers, there has been a decrease in weighted entropy in the recent years indicating that companies choose to conclude contracts with less randomness than the contracting authorities. The market behavior on the part of the buyer presents a similar picture, but with smoother fluctuations. Finally, contracting authorities in the recent years tend to have a lower diversity in contracting with companies.*

**Keywords:** *competition, entropy, graph analytics, network, public procurement.*

**JEL Classification:** *C88, I18, L14, L38.*

## INTRODUCTION

Public procurement is the process applied by the public sector entities to purchase goods, services or works from economic operators, usually private firms (European Commission 2017). According to OECD, public authorities spend around US \$ 9,5 trillion of public money each year to purchase goods and services through the procurement process (Futia et al. 2017). The public procurement market is a steadily growing market that has a strong interest for the contracting authorities and the economic operators since its share in the GDP is around 14 % for the OECD member countries and 12 % for the EU member states. Therefore, public procurements provided constitute a significant opportunity for economic operators and public contracts might be important for their turnover (OECD 2007). Due to its importance the public procurement process should be characterized by transparency and competitive conditions must prevail. Competition is not only important for the efficient and transparent distribution of public spending, but is also a prerequisite for the strengthening of healthy companies with the competence and the qualifications to contract with the public.

As the development of competitive conditions in every market and the elimination of obstacles to the free movement of goods and services have been the main objective of the EU legislature, this study is called to investigate whether big data analysis tools could contribute to the achievement of this goal. The public sector authorities are directly or indirectly buyers for many businesses, especially SMEs. The buyer is obliged to examine prospective sellers and analyze the risks of competitive processes (not bidding, cost overruns, creating collusion, preventing corruption phenomena, etc). On the other hand, the seller should know the potential buyers, the planning of the buyers’ needs, the competitors and the potential partners who may sell additional goods.

Empirical research has examined the public procurement market, but their scope is limited to a geographical area of a state (Paulo et al. 2015; Van Erven et al. 2017; Mamavi et al. 2017; Storsjö et al. 2017; Kapil 2017; Ibrahim et al. 2017). The lack of reliable and consistent data accessible

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to researchers and the lack of a tool that would be able to process and analyze big data might be a reason for not reaching such a universal market analysis. However, in the last years some structured studies were carried out under EU programs and resulted in the production and free disposal of large databases for tendering procedures for a number of countries, mainly members of the EU. Besides, graph analytics offers the opportunity to create dynamic models to the process, analyze and create visualizations of big data.

This paper aims to cover part of the gap of the literature in the fields of economic and decision-making in the market and the competition by applying graph theory to create a relational graph database, which works as a semantic database, from open data of public procurement, in which the linked data will be described and they will be defined with metadata. We employ the proposed methodology in the health sector and in particular the market of the pacemakers, which are goods with high economic value. The data were retrieved from the platform “*Opentender*” for the period 2009–2019. We employ graph analytics indicators as the graph density, the centrality and the weighted centrality, the entropy and the conditional entropy. Our results revealed heterogeneity in the behavior of contracting authorities and in the behavior of economic operators, which is not proportionally related to the economic value of the products to be supplied. The study of competition, which is the main concern of the present, leads us to a similar conclusion. On the part of sellers, there has been a decrease in weighted entropy in the recent years indicating that companies choose to conclude contracts with less randomness than the contracting authorities. The market behavior on the part of the buyer presents a similar picture, but with smoother fluctuations. Contracting authorities also in recent years tend to have a lower diversity in contracting with companies.

The rest of the paper is organized as follows. Section 2 provides a review of the relevant literature and posits the three research questions. Section 3 presents the data and methodology. Section 4 presents the empirical findings and the discussion. Section 5 offers some concluding remarks.

## LITERATURE REVIEW AND HYPOTHESES SETTING

The public procurement market is of particular interest because in many markets monopsonies, oligopsonies, monopolies and oligopolies interact with each other. Unfair competition, collusion or corruption come adversely and affect competition (Lorentziadis 2019). On the other hand, the bureaucracy, the diverse legal framework and the low expertise of public authorities’ agents create barriers to the free entrance in the market. Non-incumbents, especially small and medium-sized enterprises (SME), are impotent to participate in a malfunctioning public procurement market (Ferguson 2018). However, since competition in public procurement markets could drive down the bid prices to levels below the budget value, as long as the costs are also lower from the budget value (Compte et al. 2005) it might offer more opportunities to incumbents and outsiders, widening the market participation and contributing to the sustainable economic growth.

While competition strongly affects the efficiency of the public procurement procedures some studies have shown that the impact of competition is correlated to the project size, the participant companies’ size, the industrial sector, etc. (Atkinson 2019). Paulo et al. (2015), using data from four Brazilian federal government agencies, found that the increase in the participation of SMEs was not correlated to price decrease in public procurement because the increase of competition due to the entry of SMEs might discourage the participation of big companies since they cannot reduce their profit margins. Janke et al. (2016) argued that the participation from three to five bidders is satisfactory.

The competition “bypass” could be successful in: a) the submission stage, imposing limits to the number of bidders, b) the assessment stage, using an unfair assess of the bidders’ offers, and c) the delivery stage, with ex-post and unilaterally modifications of the contracts’ conditions (Fazekas et al. 2016). Therefore, market analysts should examine the competition in tender procedures by focusing on these three bad practices. The centralization of the auctions and the e-procurement tools, are the two strategies that the public sector follows, according to EU recommendations (Bof et al. 2015). Besides, the preference for the local suppliers by including terms that favor the local firms is usually a practice that minimizes competition (Keulemans et al. 2017).

Grandia et al. (2017) supported that public procurement has been consistently used to formulate public policies in a wide range of fields. The authors reviewed prior literature for the need of public procurement and among others, raised the issue of public procurement networks. Graph theory and network analysis has been used effectively in decision making systems for the procurement of companies (Oh et al. 2016). Xiubo et al. (2016) studied how to detect procurement fraud by employing big data analytics and the network analysis. The authors analyzed the relationship in the social network between the purchasing agent and the bidder. Erven et al. (2017) used graph databases to identify corruption and fraud in Brazilian government procurement processes. They analyzed the relationships between network nodes (companies) in a two or more hops distance to detect possible collisions in the Brazilian public procurement procedures. Mamavi et al. (2017) examined how the strategic networks influence the public contract awarding in France and found that strong ties and weak ties have a significant positive effect on the award of public contracts.

Carstens et al. (2017) employed graph theory and neo4j graph databases in a model to manage the company risk and importance in supply graphs. Gruenen et al. (2017) used graph analytics to predict procurement insights in the procurement process and showed that companies' networks could help market participants to anticipate, understand, and act on the signals in a collaborative network. Finally, Soyulu et al. (2018) created a semantic knowledge graph using multiple sources across the EU to analyze public spending and corporate data.

The centralization of the auctions and the e-procurement tools strategies are recommended by the EU (Bof, et al., 2015). Achieving the goal of competitive public procurement markets is one of the fundamental principles of the Treaty of the European Union which provides for the development of competition and the abolition of entry barriers to the free movement of goods and services. With a view to facilitating cross-border tendering, the new legal framework (Directives 2014/24/EU and 2014/25/EU) established a set of provisions.

Concluding the above discussion, we posit the following research questions:

*Research Question 1: Do the companies behave uniformly with respect to their collaboration with authorities?*

*Research Question 2: Do the authorities behave uniformly with respect to their collaboration with companies?*

*Research Question 3: Is the public procurement market of pacemakers competitive?*

## DATA AND METHODOLOGY

### The data

For the aim of this work we use data from the platform “Opentender” (opentender.eu, which is a part of the DIGIWHIST project) for the period 2009–2019 focusing on the public procurement for pacemakers (cpv 33182210). Opentender publishes tender's data from 33 countries and institutions (28 EU member states, Norway, the EU Institutions, Iceland, Switzerland and Georgia). Data published by the Opentender in contrast to the data published by the EU from the platform of TED, were collected from about 20 various sources. Finally, data from Opentender is more updated than data from the EU. In the case that no open data was available, the platform Opentender collected the data from thousands of web pages, building in this way a robust database. Data was standardized using Cypher language to feed the database. Data included information about the contracts authorities, the tenders, the lots of each tender and the economic operators that signed the contracts. For the aim of this study, we only analyze the subgraph represented by the bipartite network of the two groups: Authorities (buyers) and economic operators (companies-sellers). The links in this bipartite network are the assigned contracts and the weight is the contract value. The network is undirected because the contract between an authority and company is a bidirectional relationship. The study was limited only to contracts with award value. The final size of our data set includes 263 unique nodes-authorities, 515 unique nodes-companies and 3.373 links — edges.

## Methodology

The research questions posited in the previous section will be addressed using network analysis. The first and second question will be addressed using the characteristics of the nodes, authorities and companies and the third using the network entropy. The contracts between the two groups and the weights (contracts values) define the adjacency matrix. The rows represent the contracting authorities and the columns the companies. Each element of the matrix is the number of contacts awarded by a contracting authority to a company or the total value of the contracts awarded by the contracting authority to a company (weighted network).

The role of each authority and company in the network will be examined using the degree centrality (unweighted and weighted) and the entropy index (unweighted and weighted).

The network consists of  $x_j$  authorities,  $j \in \{1 \dots n\}$  and  $y_i$  companies,  $i \in \{1 \dots m\}$ . The unweighted degree centrality for the authority  $x_j$  in the public procurement sector (Golbeck, 2015) is:

$$D_c^k(x_j) = deg^k(x_j) = \sum_{i=1}^m C_{x_j \rightarrow y_i}^k \quad (1)$$

Where  $D_c^k(x_j)$  is the degree centrality of a node-authority  $j$  in the public procurement sector  $k$ , for a given graph  $G:=(N,E)$  with  $|N|$  nodes and  $|E|$  edges,  $deg^k(x_j)$  the degree the total number of contracts the authority  $x_j$  signed with all companies  $y_i$ , and  $C_{x_j \rightarrow y_i}^k$  is the number of contracts the authority  $x_j$  awarded to the company  $y_i$  in the public procurement sector  $k$ .

The WDC of a node is the sum of weights of the edges that connect node  $i$  with its neighbor nodes. In our graph, edge's weight is the contracts' value. The weighted degree centrality for the node-authority  $x_j$  in the public procurement sector  $k$  is:

$$WD_c^k(x_j) = deg_W^k(x_j) = \sum_{i=1}^m V_{x_j \rightarrow y_i}^k \quad (2)$$

Where  $WD_c^k(x_j)$  is the weighted degree centrality of a node-authority  $j$  in the public procurement sector  $k$ ,  $deg_W^k(x_j)$  is the total value of the contracts the authority  $x_j$  signed with all companies  $y_i$ , and  $V_{x_j \rightarrow y_i}^k$  is the total value of contracts the authority  $x_j$  awarded to the company  $y_i$  in the public procurement sector  $k$ .

The unweighted degree centrality for the node-company  $y_i$  in the public procurement sector is:

$$D_c^k(y_i) = deg^k(y_i) = \sum_{j=1}^n C_{x_j \rightarrow y_i}^k \quad (3)$$

Where  $D_c^k(y_i)$  is the degree centrality of a node-authority  $i$  in the public procurement sector  $k$ ,  $deg^k(y_i)$  the degree the total number of contracts the company  $y_i$  signed with all authorities  $x_j$ , and  $C_{x_j \rightarrow y_i}^k$  is the number of contracts the company  $y_i$  signed with the authority  $x_j$  in the public procurement sector  $k$ .

The weighted degree centrality for the node-company  $y_i$  in the public procurement sector  $k$  is:

$$WD_c^k(y_i) = deg_W^k(y_i) = \sum_{j=1}^n V_{x_j \rightarrow y_i}^k \quad (4)$$

Where  $WD_c^k(y_i)$  is the weighted degree centrality of a node-company  $i$  in the public procurement sector  $k$ ,  $deg_W^k(y_i)$  is the total value of the contracts company  $y_i$  signed with all the authorities  $x_j$ , and  $V_{x_j \rightarrow y_i}^k$  is the total value of contracts the company  $y_i$  signed with the authority  $x_j$  in the public procurement sector  $k$ .

Density is a structural characteristic of a network. Density measures the proportion of possible edges among the nodes of a network (Giuffrè 2015) and indicates how close the network is to complete. A complete network has a density equal to 1. *Gephi* estimates the density for an undirected graph using the indicator (Coleman, 1983):

$$D = \frac{2|E|}{|N|(|N|-1)} \quad (5)$$

Where  $D$  is the graph density,  $E$  is the number of edges, and  $N$  is the number of the nodes in the graph. However, the (3) could create an erroneous assessment of the situation of our network because it uses as possible edges the  $|N|(|N| - 1)$ , which doesn't represent the possible edges in a bipartite graph. In our study if  $|N_{(x)}|$  is the sum of the authorities' nodes and  $|N_{(y)}|$  is the sum of the companies' nodes, then the possible edges are  $|N_{(x)}| \cdot |N_{(y)}|$ . Therefore, we calculate the density of our network as:

$$D = \frac{2|E|}{|N_{(x)}| \cdot |N_{(y)}|} \quad (6)$$

Each edge (contract) has a start node and an end node. To estimate how density affects each one of the two groups of nodes (authorities and companies) we calculate the mean value of relationships for each group. Contracts' mean value estimates for each one of the two groups, how many relationships each has.

Even though the degree and weight degree centralities offer valuable information about the position of an agent, seller or buyer, in the public procurement market, however, do not recognize a difference between quantity and quality (Derek et al. 2020) because centralities do not provide information about the competitive conditions in the procurement market. The Shannon entropy index has been extensively used by the literature to measure market competition. We employ the entropy for the contracting authorities  $x_j$  and the companies  $y_i$  in order to investigate whether the agents, sellers or buyers, operate in the specific market under competitive conditions or concentrated one.

$$H(x_j) = - \sum_{i=1}^m P_{(x_j \rightarrow y_i)} \cdot (P_{x_j \rightarrow y_i}) \quad (7)$$

Where:  $H(x_j)$  is the authority  $x_j$  entropy index.  $P_{x_j \rightarrow y_i}$  is the percentage of contracts awarded by the authority  $x_j$  to company  $y_i$ :

$$P_{x_j \rightarrow y_i} = \frac{c_{x_j \rightarrow y_i}^k}{\sum_{i=1}^m c_{x_j \rightarrow y_i}^k}$$

$k$  is the market sector (in this study the sector  $k$  is the pacemakers with cpv 33182210) and  $c_{x_j \rightarrow y_i}^k$  is the number of the contracts that authority  $x_j$  awarded to company  $y_i$  and  $\sum_{i=1}^m c_{x_j \rightarrow y_i}^k$  is the total number of contracts awarded by the authority  $x_j$ . If the entropy index  $H(x_j)$  is high, the  $P_{x_j \rightarrow y_i}$  is distributed uniformly, indicating that the authority  $x_j$  operates as a buyer in the sector  $k$  without giving a special preference to a limited number of sellers. On the other hand, if the entropy index  $H(x_j)$  tends to zero, the  $P_{x_j \rightarrow y_i}$  is distributed unevenly, indicating that the authority  $x_j$  operates as a buyer in the sector  $k$  giving preference to few sellers.

$$H(y_i) = - \sum_{j=1}^n P_{(y_i \rightarrow x_j)} \cdot (P_{y_i \rightarrow x_j}) \quad (8)$$

Where  $H(Y_i)$  is the company's  $y_i$  entropy.  $P_{y_i \rightarrow x_j}$  is the percentage of contracts the company  $y_i$  signed with the authority  $x_j$ :

$$P_{y_i \rightarrow x_j} = \frac{c_{y_i \rightarrow x_j}^k}{\sum_{j=1}^n c_{y_i \rightarrow x_j}^k}$$

Where  $c_{y_i \rightarrow x_j}^k$  is the number of contracts that company  $y_i$  signed with authority  $x_j$  at the market sector  $k$ . If the entropy index  $H(y_i)$  is high, the  $P_{y_i \rightarrow x_j}$  is distributed uniformly, indicating that the company  $y_i$  operates as a seller in the sector  $k$  competitively without focusing on a limited number of buyers. On the other hand, if the entropy index  $H(y_i)$  tends to zero, the  $P_{y_i \rightarrow x_j}$  is distributed unevenly,

indicating that the company  $y_i$  operates as a seller in the sector  $k$  by giving a special preference to few buyers.

The sum of the individual entropies could be considered as the entropy of the network either for the companies or the authorities. Hence, the network entropy from the authorities' point view is:

$$H(X) = - \sum_{j=1}^n P_{(x_j)} \cdot (P_{x_j}) \quad (9)$$

where

$$P_{x_j} = \frac{\sum_{i=1}^m C_{x_j \rightarrow y_i}^k}{\sum_{j=1}^n \sum_{i=1}^m C_{x_j \rightarrow y_i}^k}$$

is the share of the contracts awarded by authority  $j$  in the total public procurement market of sector  $k$ .

And the network entropy from the companies' point view is

$$H(Y) = - \sum_{i=1}^m P_{(y_i)} \cdot (P_{y_i}) \quad (10)$$

where

$$P_{y_i} = \frac{\sum_{j=1}^n C_{y_i \rightarrow x_j}^k}{\sum_{i=1}^m \sum_{j=1}^n C_{y_i \rightarrow x_j}^k}$$

is the share of the contracts signed by company  $i$  in the total public procurement market of sector  $k$ .

Equation (9) is an indication of the competitive conditions in the public procurement market of the sector  $k$  for the authorities (buyers). Network entropy close to zero indicates that few authorities buy in the specific market and hence we may conclude the existence of oligopsony conditions or even more monopsony. A high entropy value indicates that the distribution of buyers in the specific market is more uniform and demand is more competitive without dominant or powered authorities. Equation (10) is an indication of the competitive conditions in the public procurement market of the sector  $k$  for the companies (sellers). Network entropy close to zero indicates that the market operates either as oligopoly or monopoly. High entropy is a signal that the market operates more competitively since the distribution of sellers is more uniform. This is the first time that the public procurement market structure is evaluated by considering simultaneously the position of the buyers and sellers. Hence in the following table we present the operation of the market depending on the competitive position of both the buyer and the seller.

		$H(X)$	
		Low	High
$H(Y)$	Low	Strategic game between sellers and buyers	Sellers have the power
	High	Buyers have the power	No agent could affect the market

Table 1: Operation of the market depending on the competitive position of the buyer and the seller

In the case of the public procurement markets, the entropy index offers valuable information about the competitive conditions in the market. From the authorities (buyers) point of view the possible existence of oligopsony, monopsony or competition and from the seller's point of view the possible existence of oligopoly, monopoly or competition). However, the distribution of contracts across sellers or buyers for each agent offers additional and useful information about the public procurement market operation. The conditional network entropies,  $H(X)$  and  $H(Y)$ , face this problem.

The conditional entropy of the public procurement network of the sector  $k$  based on the authorities' (buyers) behavior.

$$H(X) = - \sum_{j=1}^n P_{x_j} \sum_{i=1}^m P_{(x_j \rightarrow y_i)} \cdot (P_{x_j \rightarrow y_i}) \quad (11)$$

The  $H(X)$  is defined as the weighted sum of the entropies of the authorities  $x_j$ , using as weights the  $Px_j$ , the percentage of the awarded contracts by the authority  $x_j$  over the total number of authorities' contracts:

$$P_{x_j} = \frac{\sum_{i=1}^m c_{x_j \rightarrow y_i}^k}{\sum_{j=1}^n \sum_{i=1}^m c_{x_j \rightarrow y_i}^k}$$

The conditional entropy for the network of the sector  $k$  based on the companies (sellers) behavior is:

$$H(Y) = - \sum_{i=1}^m P_{y_i} \sum_{j=1}^n P_{(y_i \rightarrow x_j)} \cdot (P_{y_i \rightarrow x_j}) \quad (12)$$

The  $H(Y)$  is defined as the weighted sum of each company entropy, using as weight the  $P_{y_i}$ , the percentage of the contracts signed by the company  $y_i$  over the total number of companies' contracts:

$$P_{y_i} = \frac{\sum_{j=1}^n c_{y_i \rightarrow x_j}^k}{\sum_{i=1}^m \sum_{j=1}^n c_{y_i \rightarrow x_j}^k}$$

$H(X)$  and  $H(Y)$  focus on the operation of the market in a particular sector, both from the buyer's point of view (e. g. oligopsony, monopsony, competition) and from the seller's side (e. g. oligopoly, monopoly, competition). However, taking into account the distribution of contracts across sellers or buyers offers addition and useful information about the public procurement market operation. High conditional network entropy indicates that the weighted average authority (company) signed contracts with many companies (authorities) in a uniform distribution. The low entropy indicates that the weighted average authority (company) signed contracts with few companies (authorities) indicating a special preference towards specific companies (authorities) respectively.

Table presents the possible situation in a sectoral public procurement market. We combine  $H(X)$ , the competitive conditions in the market, with  $H(X)$ , the distribution of the contracts of the weighted average authority in the market. Thus, if the  $H(X)$  is low, the weighted average authority buys from few sellers, and the  $H(X)$  is high, indicating that no authority dominates the market, and then we could conclude bargaining power is in favor of the companies. If the  $H(X)$  is low, the weighted average authority buys from few companies and the  $H(X)$  is low, indicating the existence of oligopsonistic conditions, then we could conclude no seller or buyer has strong bargaining power in the market game. If the  $H(X)$  is high, the weighted average authority buys from many companies and the  $H(X)$  is low, indicating the existence of oligopsonistic conditions, then we could conclude the bargaining power is in favor of the authorities. Finally, If the  $H(X)$  is high, the weighted average authority buys from many companies and the  $H(X)$  is high, indicating the existence of competitive conditions, then we could conclude the specific market operates competitively and there is no need for intervention to improve competition.

		$H(X)$	
		Low	High
$H(X)$	Low	Oligopsony and buy from few companies	Competitive and buy from few companies
	High	Oligopsony and buy from many companies	Competitive and buy from many companies

Table 2: Operation of sectoral public procurement market (buying)

Table 2 presents the possible situation in a sectoral public procurement market. We combine  $H(Y)$ , the competitive conditions in the market, with  $H(Y)$ , the distribution of the contracts of the weighted average company in the market. Thus, if the  $H(Y)$  is low, the weighted average company sells to few authorities and the  $H(Y)$  is high, indicating that no company dominates the market, then we could conclude bargaining power is in favor of the authorities. If the  $H(Y)$  is low, the weighted average company sells to few authorities and the  $H(Y)$  is low, indicating the existence of oligopolistic

conditions, then we could conclude no seller or buyer has strong bargaining power in the market game. If the  $H(Y)$  is high, the weighted average company sells to many companies and the  $H(Y)$  is low, indicating the existence of oligopolistic conditions, then we could conclude the bargaining power is in favor of the companies. Finally, If the  $H(Y)$  is high, the weighted average company sells to many companies and the  $H(Y)$  is high, indicating the existence of competitive conditions, then we could conclude the specific market operates competitively and there is no need for intervention to improve competition.

		$H(Y)$	
		Low	High
$H(Y)$	Low	Oligopoly and sell to few authorities	Competitive and sell to few authorities
	High	Oligopoly and sell to many authorities	Competitive and sell to many authorities

Table 3: Operation of sectoral public procurement market (selling)

In a similar way we calculate the weighted and the conditional network weighted entropies. The weighted entropy of the authority  $x_j$  is estimated:

$$H(x_j)_{(weighted)} = - \sum_{i=1}^m Q_{(x_j \rightarrow y_i)} \cdot (Q_{x_j \rightarrow y_i}) \quad (13)$$

Where  $H(x_j)_{(weighted)}$  is the weighted entropy of the authority (buyer)  $x_j$ .  $Q_{x_j \rightarrow y_i}$  is the percentage of the contracts' value  $V_{x_j \rightarrow y_i}^k$  the authority  $x_j$  awarded to the company  $y_i$  in sector  $k$ , over the total value of contracts awarded by the authority  $x_j$ :

$$Q_{x_j \rightarrow y_i} = \frac{V_{x_j \rightarrow y_i}^k}{\sum_{i=1}^m V_{x_j \rightarrow y_i}^k}$$

The weighted entropy of the company  $y_i$  is estimated:

$$H(y_i)_{(weighted)} = - \sum_{j=1}^n Q_{(y_i \rightarrow x_j)} \cdot (Q_{y_i \rightarrow x_j}) \quad (14)$$

$H(y_i)_{(weighted)}$  is the weighted entropy of the company (seller)  $y_i$ .  $Q_{y_i \rightarrow x_j}$  is the percentage of the contracts' value  $V_{y_i \rightarrow x_j}^k$  that the company  $y_i$  being awarded from the authority  $x_j$  in the sector  $k$ , over the total value of contracts earned by the company (seller)  $y_i$ :

$$Q_{y_i \rightarrow x_j} = \frac{V_{y_i \rightarrow x_j}^k}{\sum_{j=1}^n V_{y_i \rightarrow x_j}^k}$$

The weighted entropy of the market of the sector  $k$  for the authorities (buyers) is estimated:

$$Q_{x_j} = \frac{\sum_{i=1}^m V_{x_j \rightarrow y_i}^k}{\sum_{j=1}^n \sum_{i=1}^m V_{x_j \rightarrow y_i}^k}$$

Where  $Q_{x_j}$  is the share of the contracts awarded by authority  $j$  in the total public procurement market of sector  $k$ . Then the network entropy is:

$$H(X)_{(weighted)} = - \sum_{j=1}^n Q_{(x_j)} \cdot (Q_{x_j}) \quad (15)$$

And the weighted entropy of the market of the sector  $k$  from the companies' point view (sellers) is estimated:

$$Q_{y_i} = \frac{\sum_{j=1}^n V_{y_i \rightarrow x_j}^k}{\sum_{i=1}^m \sum_{j=1}^n V_{y_i \rightarrow x_j}^k}$$

$$H(Y)_{(weighted)} = -\sum_{i=1}^m Q_{(y_i)} \cdot (Q_{y_i}) \quad (16)$$

Moreover, if  $H(X)_{(weighted)}$  is high and the  $H(X)$  also high then the market conditions from the buyers point of view are competitive both in terms of the number of contracts and the value of contracts. If  $H(X)_{(weighted)}$  is high and the  $H(X)$  low then the market conditions from the buyers point of view few authorities dominate the sector have signed many contracts but the distribution of the value is more uniform distribution indicating insignificant power in the market since the value of their contracts are low. If  $H(X)_{(weighted)}$  is low and the  $H(X)$  low then the market conditions from the buyers point of view indicate that few authorities dominate the sector with many contracts but also the distribution of the value is also not uniform indicating that these authorities (buyers) have significant power in the market. If  $H(X)_{(weighted)}$  is low and the  $H(X)$  high then the market conditions from the buyers point of view indicate that authorities dominate with a more uniform distribution at the number of the contracts but few authorities with high value of contracts. Therefore, even though the network entropy shows that there is competition from the buyers the weighted entropy indicates that few authorities have bargaining power in the market due to the large size of the values of contracts.

Interesting results we could take if we compare the network and weighted network entropy from the seller's point of view. Thus, Moreover, if  $H(Y)_{(weighted)}$  is high and the  $H(Y)$  also high then the market conditions from the sellers point of view are competitive both in terms of the number of contracts and the value of contracts. If  $H(Y)_{(weighted)}$  is high and the  $H(Y)$  low then the market conditions from the sellers point of view few companies dominate the sector since they have signed many contracts but the distribution of the value is more uniform indicating insignificant power in the market since the value of their contracts are low. If  $H(Y)_{(weighted)}$  is low and the  $H(Y)$  low then the market conditions from the sellers point of view indicate that few companies dominate the sector with many contracts but also the distribution of the value is also not uniform indicating that these companies have significant power in the market. Finally, If  $H(Y)_{(weighted)}$  is low and the  $H(Y)$  higher market conditions from the sellers point of view indicate that companies dominate with a more uniform distribution at the number of the contracts but few companies with high value of contracts. Therefore, even though the network entropy shows that there is sellers' competition, the weighted entropy indicates that few companies have bargaining power in the market due to the large size of the values of contracts.

The same arguments as in the case of the unweighted network entropy,  $H(Y)$  and  $H(X)$  regarding the bargaining power of buyers and sellers in the market, also apply in the case of the weighted network entropy  $H(Y)_{(weighted)}$  and  $H(X)_{(weighted)}$ .

The conditional entropies  $H(X)$  and  $H(Y)$  were calculated as following:

$$H(X)_{(weighted)} = -\sum_{j=1}^n Q_{x_j} \sum_{i=1}^m Q_{(x_j \rightarrow y_i)} \cdot (Q_{x_j \rightarrow y_i}) \quad (17)$$

Where:  $H(X)_{(weighted)}$  the weighted conditional network entropy based on the authorities (buyers) behavior. The weight  $Q_{x_j}$  is the percentage of the sum of contracts' values the authority  $x_j$  awarded over the total value of contracts awarded by all authorities in the sector market  $k$ .

$$Q_{x_j} = \frac{\sum_{i=1}^m V_{x_j \rightarrow y_i}^k}{\sum_{j=1}^n \sum_{i=1}^m V_{x_j \rightarrow y_i}^k}$$

$$H(Y)_{(weighted)} = -\sum_{i=1}^m Q_{y_i} \sum_{j=1}^n Q_{(y_i \rightarrow x_j)} \cdot (Q_{y_i \rightarrow x_j}) \quad (18)$$

Where:  $H(Y)_{(weighted)}$  the weighted conditional network entropy based on the companies (sellers) behavior. The weight  $Q_{y_i}$  is the percentage of the sum of contracts' values signed by the company  $y_i$  over the total value of contracts signed by all companies in the sectoral market  $k$ :

$$Q_{y_i} = \frac{\sum_{j=1}^n V_{y_i \rightarrow x_j}^k}{\sum_{i=1}^m \sum_{j=1}^n V_{y_i \rightarrow x_j}^k}$$

Finally, regarding the combined discussion between the weighted network and conditional weighted network entropy of the public procurement market is similar to the previous one and for the economy of space we do not present it here.

## EMPIRICAL FINDINGS AND DISCUSSION

We employed the neo4j and Gephi software for the empirical estimations. The analytical procedure is presented in the Appendix. We present the results in three sections following the order of the research questions. In part 4.1 we respond to the research question 1 regarding the companies — sellers' behavior. In part 4.2 we respond to the research question 2 regarding the authorities — buyers' behavior. In part 4.3 we respond to the research question 3 regarding the competitive conditions in the specific market.

Table 1 presents the density evolution during the study period. The estimated density of the network using the indicator (5) was 0.011, while using the indicator (6) was 0.05 indicating a rather low dense network. The network consists of three big components and other smaller ones.

### Research question 1

Table 2 presents the estimated annual metrics for the companies' group for the study period. The degree centrality ranges from 1 to 322, indicating that some companies signed just 1 contract while other(s) signed 322 contracts. 57.1 % of the companies signed one contract, 14.2 % signed two contracts, and 5.4 % signed more than 22 contracts. The weighted degree ranges from 120 euros to 116,842,991 euros. 77.3 % of the companies signed contracts with value lower than 1 million euro and 5.2 % of the companies signed contracts with value higher than 11 million euros. It is worth mentioning that the sum of the contracts of the companies with the highest weighted degree centrality was 963,037,530 euros which were 75.07 % of the total of the sum contracts' values.

As far as the entropy, 71.7% of the companies (369) exhibited a zero entropy, 11.1 % (57 companies) between 0 and 1 and only 7.5 % (39 companies) higher than two. Table 2 shows a steady decrease of the maximum values of entropy during examination period. The distribution and the evolution of the weighted entropy follow the same pattern. The estimated entropy is higher than the corresponding weight entropy for all examined companies during the study period. Some companies which operate in France also present high degree and weighted degree. Hence, our finding indicates that they signed many contracts with many contracting authorities and these contracts had a high value. Since their entropy is high and higher than weighted entropy also indicate that they signed all these contracts with the contracting authorities more uniformly as far as the number of contracts are concerned but the distribution of the contract values was asymmetric. They signed contracts with a high value with some authorities and contracts with a low value with some others. On the other hand, companies which operate in Poland present the same behavior at degree, weighted degree and entropy, but the weight entropy is similar to the entropy. Therefore, they signed contracts with many authorities and the contracts' values were more uniformly distributed.

### Research question 2

Table 3 presents the estimated metrics for the authorities' group. The estimated degree ranged from 1 to 222. 10.6 % of the authorities had one contract and 8.0 % had two contracts only. On the other hand, 52.1 % signed 3 to 13 contracts and 29.3 % signed than 13 contracts. It is worth mentioning that only the 14.4 % of the authorities signed more than 2 contracts per year.

The weighted degree ranged from 23.224 euros to 98.300.757 euros. 39.92 % of the authorities had contracts with total value lower than 1 million euros. The 19.39 % of the companies signed contracts with value more than 4.88 million euros (mean value for all the study period), and only a 2.66 % of the total signed contracts with total value more than 30 million euros. The sum of the values of these 7 authorities with the highest weighted degree centrality count at 468.039.350 € which is the 36% of the total of the sum contracts' values (1.282.810.699 €).

The 12,17 % of the authorities (32 authorities) have a 0 entropy rank, the 35,36 % (93 authorities) of the total have entropy rank between 0 and 2 and only the 1,9 % of the authorities (5 authorities) have entropy higher than 10. Table 3 shows a steady decrease of the maximum values of entropy during the passage of years. Similarly, the 12,17 % of the authorities (32 authorities) have a 0 weighted entropy rank, the 43,73 % (115 authorities) of the total have weighted entropy rank between 0 and 2 and only the 2,28 % of the total (6 authorities) have weighted entropy higher than 10. Table 3 shows a decrease of the maximum values of weighted entropy during the passage of years but in this case the evolution is about the same as the entropy's evolution.

### Research question 3

Applying the methodology developed above, critical conclusions can be drawn about the competition in this market of pacemakers for the years 2009 to 2018 (Table 4, we excluded the year 2019 because the small reported records could not give us a reliable representative report). In the absence of reference values from other markets, the benchmarking was done in comparison with the minimum, maximum, and average values summarized in Table 5. More specifically, values close to the minimum value indicate low entropy, values close to the average value indicate a neutral situation and values close to the maximum value, characterize high entropy. The cross time analysis reveals that satisfactory competitive conditions prevailed during the examination period (high  $H(X)$  and  $H(Y)$ ) and no agent, seller or buyer, had significant influence on market. Moreover, the authorities followed a less diverse distribution of their contracts with companies (low  $H(X)$ ) indicating that no authority had significant bargaining power as buyer but the average authority signed contracts with few companies. On other hand, the participating companies signed contracts with many authorities following a more uniform distribution (high ). Focusing on the contracts' values, we could say that the high  $H(X)_{(weighted)}$  (but smaller than  $H(X)$ ) and the high  $H(Y)_{(weighted)}$  (but smaller than  $H(Y)$ ) values shows that neither the buyers nor the sellers dominated this sectoral market during the examination period a similar result as the unweighted entropies indicate.

The weighted conditional entropy  $H(Y)_{(weighted)}$  and  $H(X)_{(weighted)}$  were lower than the unweighted ones, indicating that the distribution based on contract values was not as uniform as the one based on the number of contracts. This finding suggests a small preference of companies to sign contracts with specific authorities based on the value of contracts. The lower value of  $H(X)_{(weighted)}$  relative to the  $H(X)$  also indicates that the distribution based on contract values was not as uniform as the one based on the number of contracts. Thus there is a small preference on the part of authorities to sign contracts with specific companies in relation to the value of the contracts.

## CONCLUDING REMARKS

The aim of this paper was to explore the competitive conditions in the public procurement market of the EU member's States. We used graph analytics metrics, density, centrality and entropy (unweighted and weighted) to examine simultaneously the behavior of the contracting authorities and the participating companies in the pacemakers' market of 33 European countries during the examination period 2009–2019.

Our analysis adds to the existing literature in some aspects. Previous works investigated the competitive conditions in the public procurement markets from the buyer or the seller side. Our methodology allowed us to examine simultaneously the competitive conditions in the specific market from the sellers and buyers side by using entropy and conditional entropy. While entropy offers valuable information about the competitive conditions in the market, from the authorities (buyers) point of view the possible existence of oligopsony, monopsony or competition and from the seller's point of view the possible existence of oligopoly, monopoly or competition), conditional entropy indicates the distribution of contracts across sellers or buyers for each agent. The majority of the companies 71.7 % (369) exhibited zero entropy which means that all these companies buy pacemakers to a single authority. Moreover, our results show a steady decrease of the maximum values of entropy

during the examination period. The distribution and the evolution of the weighted entropy follow the same pattern. The estimated entropy is higher than the corresponding weight entropy for all examined companies during the study period. On the other hand, only a small minority of authorities have zero entropy that is they have signed contracts with only one company. The maximum value of entropy follows a steady decrease rate during the examination period. The results are similar for the weighted entropy.

The cross time analysis reveals that satisfactory competitive conditions prevailed during the examination period (high  $H(X)$  and  $H(Y)$ ) and no agent, seller or buyer, had significant influence on market. Moreover, the authorities followed a less diverse distribution of their contracts with companies (low  $H(X)$ ) indicating that no authority had significant bargaining power as buyer but the average authority signed contracts with few companies. On other hand, the participating companies signed contracts with many authorities following a more uniform distribution (high  $H(Y)$ ). The results are similar for the analysis based on the weighted network entropy and conditional weighted network entropy.

Our findings demonstrate that it is feasible and fruitful, using this methodology, to measure the competition level and to analyze the role of companies and authorities in a market.

Our results have significant policy implications because the applied methodology offers a better understanding of the competitive conditions from the sellers and the buyers point of view. Thus, the EU and national agencies for the protection of competition in public procurement markets as well as the agencies for minimizing corruption could invest in further developing the following necessary tools for the implementation of the proposed methodology. First, develop a graph database in public procurements which offers significant advantages because of the processing and use of a large set of open data. Second standardize the format of entries and train the staff responsible for posting data to minimize database errors. Third, develop algorithms to feed the graph database with real-time data and implement machine learning.

Future researches should aim to include the bidding companies and not just contracting companies providing a better picture of competition in the public procurement markets. Besides, the examination of whether there is a free movement of goods or there is a preference of collaboration between authorities and companies located in the same country and /or region. In addition, it will be of particular interest to extend the analysis to other markets both in the health and non-health sectors. Finally, it would be significantly important to examine the possible correlation between the total cost of supplies of pacemakers in the countries of the present study and the recorded number of patients suffering from relevant diseases.

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# A PRAGMATIC APPROACH OF THE STATE AUDIT ENGAGEMENTS THROUGH AN ANALYSIS OF THE AUDITED MUNICIPALITIES' REVENUES AND EXPENDITURES IN THE REPUBLIC OF NORTH MACEDONIA

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**Abstract.** *The state audit is a crucial mechanism in controlling the spending of public money, hence the synonym for state audit is “guardian of public money”. The Lima Declaration, and later the Mexico Declaration, began to regulate state audit of a profession. The International Organization of Supreme Audit Institutions (INTOSAI) Standards indicate that state audit is regulated by the highest legal act of a country (the Constitution). In the Republic of North Macedonia, the state audit is regulated by the Law on State Audit, which governs its competencies and its mandate to audit public sector entities. The activities related to the state audit in the Republic of North Macedonia are performed by the State Audit Office (SAO), as the Supreme Audit Institution (SAI). The SAO has been a member of the INTOSAI since 2001 and of the European Organization of Supreme Audit Institutions (EUROSAI) since 2002. The most important entities covered by the state audit in the Republic of North Macedonia are the units of local self-government (hereinafter referred to as municipalities). This research focuses on the audits of the municipalities in the Republic of North Macedonia within 10 years, in terms of the volume of audited revenues and expenditures in the municipalities. By analyzing the data obtained from the annual reports of the performed audits and the operation of the SAO (2010–2019), this research investigates the impact of the state audit engagements on the audited revenues and expenditures of the Macedonian municipalities. For the analysis of the domestic practice, data was collected and extracted from 10 annual reports of the performed audits and the operation of the SAO (2010–2019). All the results of the research will be summarized in a conclusion that should indicate whether the audit of the municipalities in the Republic of North Macedonia noticed progress through the past 10 years with a particular emphasis on the trend and impact of conducted audit engagements.*

**Keywords:** *municipality audit, state audit, state audit office.*

**JEL classification:** *M40, M42.*

## INTRODUCTION

A successful development of countries' economies depends on effective and efficient public administration, which includes good and wise local government and efficient service delivery at the local level (EUROSAI TFMA, 2016). In all democratic societies, court review is an integral part of the constitution. The state audit of the budgets serves the country and its citizens by examining public responsibility and the way the public money is spent. State audit differs from other types of government controls by emphasizing its independence and authorized access for examination, audit, and control of budget development by central and local governments and control of the implementation in the function of public interest. Local government is the closest government unit to people, therefore, its policies and activities impact the general public on a daily basis. To optimize public interests, local government audit plays a significant role in the national audit system. According to the Law on State Audit, which was adopted in 1997 and has set the framework at the national level, the state audit in the Republic of North Macedonia is performed by the State Audit Office (hereinafter referred to as SAO) as an independent public authority managed by the Auditor General (State Audit Office, 2019). To increase the compliance of the legal regulations in the state audit with the requirements of the Lima Declaration and the Mexico Declaration of SAI Independence and to bring it closer to the EU standards and practice, this law undergoes several changes, and in 2010 enters into force new Law on State Audit which is largely in line with the stated requirements of the declarations. The municipality audit has always been one of the most important audits in the Republic of North Macedonia, given the fact that for a long time period, the Special Sector for the audit of local self-government units (municipalities) existed in the organizational structure in the SAO, and currently, the audit of

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municipalities is included in a separate department as a part of the organizational structure of the SAO. Besides external audits, the internal audit at the local government level also exists and functions to improve compliance and performance in the operation of the municipality. The procedures of audit engagements in the municipalities do not differ significantly from the audit process on other public institutions at the national level, but there is a significant difference in the selection of the entity to be audited, the essence and scope of the audit (Geist, 1981). The purpose of the municipality audit can be defined as the collection of data on the activities of local governments, their verification, and their comparison with the norms in order to initiate the correction of deficiencies and improve the local administration. This research paper refers to a topic that is insufficiently explored even though it concerns one of the most important aspects of the sustainability, development, and welfare of the municipalities. A theoretical, practical, and empirical approach is applied through summarizing the relevant literature and analysis of the annual audit reports by the SAO for a period of the last 10 years (2010–2019), i. e. 10 out of a total of 19 issued SAO reports from its existence. Analogously, the research is based on two main objectives. First, to determine the scope of a state audit in the municipalities, and how the number of audit engagements in the municipalities affects the volume of the audited revenues and expenditures in the municipalities.

## LITERATURE REVIEW

In the past, the impact of the state audit engagements on the audited revenues and expenditures of the municipalities has not been a subject of comprehensive analysis, given the fact that not in all countries SAO is mandated to audit municipalities. Supreme audit institutions conduct the audit following the national legal framework and international standards on auditing. International standards on auditing provide guidance for conducting financial, performance, and compliance audits. According to the Domestic Legal Framework (2010), state audit in certain entities is mandatory once a year, while the audit of other public sector entities, according to different criteria for selection of entities is determined by the annual work programs of the SAO. Owing to the fact that each year by certain criteria it is selected which entities will be subject to audit in the current year, i. e. the number of audited entities (such as municipalities) is different each year. Therefore, a realistic picture of the scope of the state audit is obtained by measuring the ratio between the total audited public expenditures and the total public expenditures made by the public sector entities that were audited in the specific year (Official Gazette of the R. M No. 145, 2010). On the 44th EUROSAI Governing Board meeting, The Task Force on Municipality Audit (EUROSAI TFMA, 2016) noted that, the SAIs employ identical auditing standards in planning and conducting municipal audits as those used in other audits, and that the equivalent types of audits defined in the INTOSAI framework are carried out: financial, compliance and performance. Despite these similarities, the audit of the municipality is different in its *complexity* (due to the number of municipalities, a wide range of services delivered to citizens as well as plenty of various functions, which very often overlap with governmental functions), *specificity* (determined by the substantial number of municipality audit system units, such as SAIs, external and internal auditors of a municipality, private auditors, and dissimilarities of these units), *openness* (determined by desire and ability of their units to fling open, share significant information as well as to deal with problems integrally at all the levels — from local to global), as well as *responsibility and use of data* (defined as a need to create a culture of accountability and the way data is used and the data used from local accounts and financial statements, which can be encouraged by audits of municipalities). Ozuomba et al. (2016) made a classification of funds in the public sector, i. e. the final accounts for state and local government (municipalities) are grouped into 1) Consolidated Revenue Fund, 2) Development Fund, 3) Treasury Fund, 4) Special and Trust Funds and 5) Contingency Fund, through which the complexity in the generation and spending of funds can be seen (Ozuomba Chidinma, Nwadiakor Eugene, & Ifureze, 2016). SAIs have identified audit areas where recommendations and guidelines for local government auditing could be useful. The specified areas refer to (EUROSAI TFMA, 2019): monitoring/coverage of risks at local government units' level (in order not to let them become risks

at national level); strategic research (monitoring of the topic or area, searching of risks arising); selecting audit sample; monitoring how local government units' debts are reflected at national level inspection of local government units' budget creation process; other (auditing the way in which local government units' revenues and expenditures are executed, auditing the management of the local government units' assets, auditing the reflection/reporting of budget execution results in relation to planned targets, and determining various levels of materiality when it can be considered that the local government units' actions have not ensured value for money). Taken into consideration the novelty and the insufficient amount of conducted research in this area, this study is expected to contribute to the literature by providing an enhanced understanding of the impact of the state audit engagements on the audited revenues and expenditures of the municipalities.

### AN ANALYSIS OF THE MUNICIPALITY AUDIT SCOPE AND ITS IMPACT ON THE AUDITED REVENUES AND EXPENDITURES

As mentioned earlier, state audit in certain entities is mandatory once a year, while the audit of other public sector entities, according to different criteria for selection of entities is determined by the annual work programs of the SAO. Therefore, Figure 1 reveals the number of audited municipalities with the regularity audit (financial audit and compliance audit) from 2010 to 2019. As can be seen from the figure, the number of audited municipalities varies over the years, given the fact that the choice of municipalities to be audited is determined according to the methodology and certain criteria of the SAO. The key criteria for selecting the municipalities to be audited are: whether the municipality was subject to the previous audit period, the frequency of previously conducted audits, the size of the municipality budget, the number of SAO employees, etc.

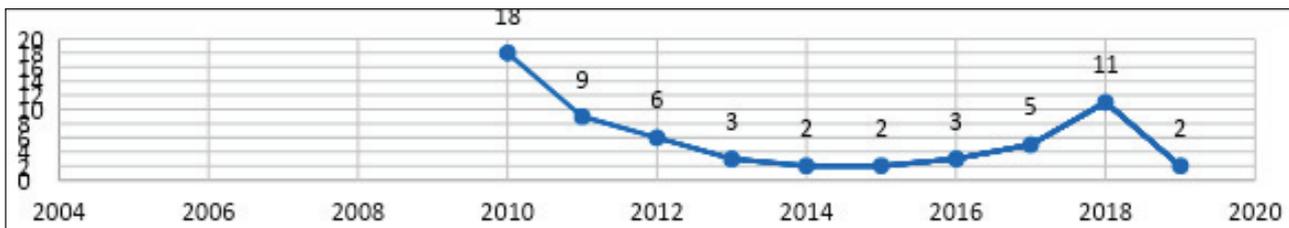


Figure 1: Number of Audited Municipalities (2010–2019)

Source: Author's calculation

Furthermore, Figure 2 shows the curve of audited revenues and expenditures of the municipalities. Similar to Figure 1, the volume of audited public revenues and expenditures in the municipalities varies from year to year, wherein 2010 has the largest volume of audited public revenues and expenditures in the municipalities, while in 2014 that volume is the lowest.



Figure 2: Audited revenues and audited expenditures of the municipalities (2010–2019)

Source: Author's calculation

According to the theory, the scope of the state audit is measured as a ratio between the total audited public expenditures and the total public expenditures made by the public sector entities that were audited in the specific year, in our case the municipalities. On a further note, Figure 3 exhibits the scope of a state audit concerning the municipalities from 2010 to 2019, respectively.

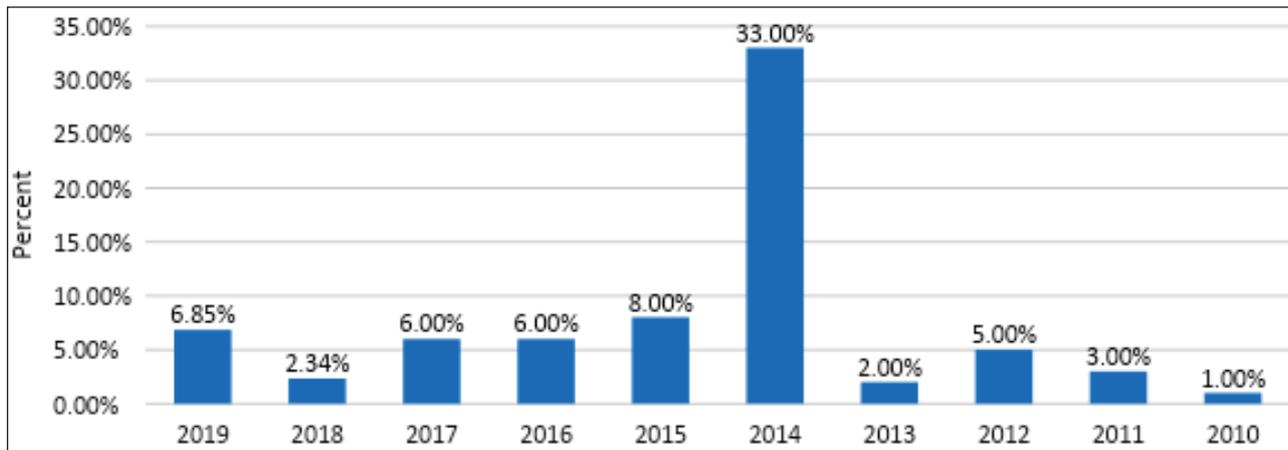


Figure 3: Ratio between the total audited public expenditures and the total audited public expenditures made by Municipalities

Source: Author's calculation

From Figure 3, it can be noticed that over the years the coverage of the state audits in the municipalities ranges from 1 percent in 2019 to 8 percent in 2014, except for 2015 where the coverage is 33 percent. Although only 2 municipalities were audited in 2015, and the audited public revenues and expenditures of the municipalities did not increase significantly in that year, it can be concluded that in 2015, SAO focused more on performing other types of audits, which are also of great importance, such as performance audits.

## METHODOLOGY

### Sample Selection

To examine the impact of the state audit engagements on the audited revenues and expenditures of the municipalities in the Republic of North Macedonia, data was gathered and extracted from the annual reports on the performed audits and operations from the SAO over the period of 2010 to 2019. The total number of observations equals to 10 or 52,63 percent out of 19 reports (the first SAO report on performed audits and operation was issued in 2001), as of the fact that the SAO is responsible to generate reports on the performed audits and operations on annual basis, which is regulated by the National Law. Due to the novelty of the subject and the unexplored nature of the research topic, a descriptive statistic, pairwise correlation matrix, and an Ordinary Least Squares (OLS) regression are performed.

### Hypotheses development and data analysis

In the analysis of the annual reports, data was used on the total number of audit engagements during the years (2010–2019), and the volume of audited revenues and expenditures of the municipalities. Hence, we propose the following hypotheses:

*H1: The number of conducted audit engagements positively affects the volume of audited revenues of the municipalities.*

*H2: The number of conducted audit engagements positively affects the volume of audited expenditures of the municipalities.*

Furthermore, Figure 4 provides a detailed descriptive statistic of the observed data for audit engagements (AUD\_ENG), audited public revenues (AUD\_PUB\_REV) and audited public expenditures (AUD\_PUB\_EXP). The total number of observations is 10 as over the period of 2010 to 2019. The mean value of the observed audit engagements is 6.1, while the mean of the audited public revenues is 3,521 million denars (570 thousand €) and 3,175 million denars (514 thousand €) of the audited public expenditures. Regarding the spread of the distribution of the variable (standard deviation), the values are 5.216427 for AUD\_ENG, 1994.964 for AUD\_PUB\_REV, and 1658.559 for AUD\_PUB\_EXP. The Skewness test evaluates the degree and direction of asymmetry. In our case, the values are 1.28679 for AUD\_ENG, 0.5038065 for AUD\_PUB\_REV, and 0.5529459 for AUD\_PUB\_EXP. To determine the heaviness of the tails of the distribution of the variables, a Kurtosis test is conducted. The results indicate that the variable AUD\_PUB\_EXP is closely to normal distribution (2.817404), while AUD\_PUB\_REV has a value of 2.588674 and AUD\_ENG a value of 3.623865 which indicates presence of heavy-tailed distributions.

AUD_ENG				
	percentiles	Smallest		
1 percent	2	2		
5 percent	2	2		
10 percent	2	2	Obs	10
25 percent	2	3	Sum of Wgt.	10
50 percent	4		Mean	6.1
			Std. Dev.	5.216427
		Largest		
75 percent	9	6	Variance	27.21111
90 percent	14.5	9	Skewness	1.28679
95 percent	18	11	Kurtosis	3.623865
95 percent	18	18		

AUD_PUB_REV				
	percentiles	Smallest		
1 percent	673	673		
5 percent	673	673		
10 percent	1224	2000	Obs	10
25 percent	2000	2456	Sum of Wgt.	10
50 percent	3376		Mean	3521
			Std. Dev.	1994.964
		Largest		
75 percent	4675	4182	Variance	3979883
90 percent	6348.5	4675	Skewness	0.503807
95 percent	7453	5244	Kurtosis	2.588674
95 percent	7453	7453		

AUD_PUB_EXP				
	percentiles	Smallest		
1 percent	656	656		
5 percent	656	1737		
10 percent	1196.5	2369	Obs	10
25 percent	2369	2400	Sum of Wgt.	10
50 percent	2817.5		Mean	3175.4
			Std. Dev.	1658.559
		Largest		
75 percent	3939	3600	Variance	2750817
90 percent	5709	3939	Skewness	0.552946
95 percent	6463	4955	Kurtosis	2.817404
95 percent	6463	6463		

Figure 4: Descriptive Statistics

Source: Author's calculation

### Model specification

To determine the association between the number of conducted audit engagements and the volume of audited revenues and expenditures of the municipalities in the Republic of North Macedonia, an Ordinary Least Squares (OLS) regression is applied as a method for analysis of the observed data. The OLS method refers to minimizing the sum of square differences between the observed and predicted values:

$$\text{AUD\_ENG} = \beta_0 + \beta_1 \text{AUD\_PUB\_REV} + \beta_2 \text{AUD\_PUB\_EXP} + E. \quad [1]$$

Where AUD\_ENG is the dependent variable,  $\beta_0$  is the constant (population Y-intercept),  $\beta_1$ ,  $\beta_2$  are the population slope coefficient, AUD\_PUB\_REV and AUD\_PUB\_EXP are the exploratory variables and  $\varepsilon$  is the random error term.

### Results and findings

In the function of determining the correlation and strength of the relationship, a pairwise correlation matrix is obtained. Both exploratory variables (AUD\_PUB\_REV) and AUD\_PUB\_EXP show a strong positive association with the dependent variable (AUD\_ENG).

	AUD_ENG	AUD_PUB_REV	AUD_PUB_EXP
AUD_ENG	1		
AUD_PUB_REV	0.7895	1	
AUD_PUB_EXP	0.7738	0.9733	1.0000

Figure 5: Pairwise correlation matrix

Source: Authors calculations

Next, the obtained results of the OLS regression are presented. The Prob>F in both of the models is below 0.05 which suggests that the exploratory variables reliably predict the AUD\_ENG. Furthermore, the R-squared in the first model is 0.5988 which shows that 59.88 percent of the AUD\_ENG can be predicted by the AUD\_PUB\_EXP. Similarly, in the second model, this value is 0.6233 or AUD\_PUB\_REV explains 62.33 percent of the variance of the AUD\_ENG. The p-value in both of the models is below 0.01 which reveals a statistically significant relationship (at 1 percent level) or that AUD\_ENG positively affects the AUD\_PUB\_EXP and AUD\_PUB\_REV.

Source	SS	df	MS	Number of obs	=	10
Model	146.643145	1	146.643145	F (1, 8)	=	11.94
Residual	98.2568549	8	12.282107	Prob > F	=	0.0086
Total	244.9	9	27.2111111	R-squared	=	0.5988
				Adj R-squared	=	0.5486
				Root MSE	=	3.5046

AUD_ENG	Coef.	Std. Err.	t	P >  t	[95 percent Conf. Interval]
AUD_PUB_EXP_cons	0.0024338	0.0007043	3.46	0.009	0.0008095 0.004058
	-1.62818	2.496089	-0.65	0.533	-7.384172 4.127813

Source	SS	df	MS	Number of obs	=	10
Model	152.656955	1	152.656955	F(1, 8)	=	13.24
Residual	92.243045	8	11.530381	Prob > F	=	0.0066
Total	244.9	9	27.2111111	R-squared	=	0.6233
				Adj R-squared	=	0.5763
				Root MSE	=	3.3956

AUD_ENG	Coef.	Std. Err.	t	P >  t	[95 percent Conf. Interval]
AUD_PUB_EXP_cons	0.0020644	0.0005674	3.64	0.007	0.0007561 0.0033728
	-1.168887	2.268009	-0.52	0.620	-6.398926 4.061151

Figure 6: OLS regression test results

Source: Authors calculation

## CONCLUSION

This paper contributes to the existing literature by providing a comprehensive understanding of the relationship between the number of audit engagements in the municipalities and the volume of the audited revenues and expenditures in the municipalities in the Republic of North Macedonia. The yielded results comply with the expected outcome, or in other words, the total volume of audited revenues and expenditures in the municipalities is directly proportional to the number of audit engagements in the municipalities. Due to the limited resources in the SAO, the scope of a state audit in the municipalities is limited and insufficient for full control of the financial and material operations, as well as the proper use of the public funds of the municipalities in accordance with the law. Hence, the recommendation is that the scope of a state audit in municipalities should be increased, to enhance control over the spending of public funds in municipalities, whereby they would be motivated to work more transparently and in the interest of citizens. Taking into consideration the novelty and the insufficient research conducted in this area, a more diligent approach and focused analysis is required to prompt in-debt research.

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# OCCUPATIONAL DISEASES AND THE IMPORTANCE OF OCCUPATIONAL MEDICINE IN THEIR PREVENTION

**Jerina Jaho\*, Fatjona Kamberi\*, Brunilda Subashi\*, Kristela Jaupaj\*, Glodiana Sinanaj\***

**Abstract.** *Introduction: According to the ILO, the list of occupational diseases includes several groups of diseases such as diseases caused by physical agents, biological, diseases by target organ systems, occupational respiratory diseases, occupational musculoskeletal disorders, mental and behavioral disorders and occupational cancer. Occupational diseases can be prevented if they are well known. It is important to know that reducing their incidence is followed by an increase in occupational health and improved quality of work, resulting in benefits to the economy. Occupational medicine is a key point in occupational disease prevention strategies.*

*Objective: Review of the literature related to the identification of the importance of occupational medicine in prevention of occupational diseases in order to increase and clearly identify the role of the occupational physician in this regard.*

*Methodology: This literature review was conducted based on a regular systematic electronic study, which included publications of the last 5 years, which had access to the subject in question, such as PubMed and Google Scholar. 8 studies are summarized because of similarity in some criteria.*

*Results: The results of these studies consisted of a concrete way of prevention and strategies applied by different countries of the world in relation to this issue and also the importance of educating employees about them, in order to minimize the risks by the workplace.*

*Conclusion: The current review can help increase the role of occupational medicine, not only in the treatment of persons suffering from occupational diseases, but in the active intervention that the occupational physician must perform regarding the prevention and reduction of occupational risk. Also, it is necessary that occupational medicine be part of the decision-making regarding the reporting, registration and management of occupational diseases.*

**Keywords:** *occupational disease, occupational medicine, prevention strategies, global burden.*

## INTRODUCTION

Occupational diseases require special attention because they are directly related to the health of employees in different sectors. It is valuable to know the risk factors and avoid them in the workplace [1]. Occupational medicine activities are related to the prevention of occupational diseases, accidents at work and the promotion of safety and health at work [2].

Different countries of the world have their own strategies to assess the burden of occupational diseases [3]. Also, WHO and ILO, have an active role in the way the management of the case in question is instructed. According to the ILO, about 2.2 million people lose their lives each year as a result of accidents at work and occupational diseases. In Albania, there is a special sector at the Institute of Public Health, which is the sector of occupational health and toxicology, which monitors the work environment and gives the relevant guidelines developed in collaboration with the Ministry of Health [5]. Occupational diseases pose a sharp problem of public health, because they have an impact not only on the individual, his health and economy and family, but also on the society and economy of a country [6].

Some occupational diseases are preventable, some treatable and others can have fatal consequences for employees. Occupational diseases are classified into four main groups, where each group has its own sub-classifications [7]:

1. Occupational diseases caused by exposure to various agents in the workplace (physical, chemical, biological agents);
2. Target occupational diseases by organs and systems (occupational respiratory, muscular, skeletal, skin and mental health diseases);
3. Occupational-related tumor diseases;
4. Specific occupational diseases.

Occupational Health Physician (Occupational Physician) has a role in diagnosing and treating occupational diseases. As part of a multidisciplinary team, the occupational physician also promotes occupational health and informs employees about ways to reduce accidents at work [8].

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With the increase of the burden in some directions that bring about occupational diseases, the field of research around them has become a priority, in order to design proven strategies that affect the reduction of risk and that are implemented in the workplace [9].

**Objective**

Review of the literature related to the identification of occupational physician role in prevention and strategies on reducing occupational disease burden.

**Methodology**

This literature review was conducted based on a regular systematic electronic study, which included publications of the last 5 years, which had access to the subject in question, such as PubMed and Google Scholar. 8 studies are summarized because of similarity in some criteria. The keywords used referred to occupational disease, occupational medicine, prevention strategies, global burden. Only English language articles were included in the study. The control for the final inclusion of the articles was carried out independently by the authors in order to reduce errors. The research was conducted in accordance with the guidelines of systematic literature review [10].

**Inclusion and exclusion criteria, categorization and data synthesis**

Book chapters and unpublished manuscripts were excluded from the research. Inclusion criteria were studies published in full paper format and in English language. Once the systematic search was performed about twenty articles were identified, but only 8 of them related to the topic of interest were included in the analysis. Relevant quality evaluation criteria were used [11]. The first author, year of publication, study methodology and conclusions were used to realize the categorization. Year of publication was used as a criterion for ranking literature review articles.

**Results**

The studies included in the literature review are summarized in Table 1. They focus on the strategies followed in the prevention of occupational diseases.

First author and Year	Methodology	Conclusions
Stefania Curti., et al. (2015) [12]	A literature review on the Cochrane occupational safety and health group specialized register, the Cochrane central register of controlled trials (central), Medline (pub med up to January 2015)	There was few data that the implementation of an educational campaign increases the number of reports of occupational diseases by doctors. Also, the data that were concluded from very few countries can't be applied in other countries due to changes in legislation
Benedetta Persechino., et al. (2016) [13]	A self-administered questionnaire was distributed to occupational physicians in Italy to identify potential factors affecting the effective collaboration and relationship between occupational physicians and physicians of the National Health System	In Italy, there is a good communication between occupational physicians and doctors of other specialties. This cooperation is often of an institutional nature and works efficiently if standard protocols and procedures are implemented
J. S. Boschman., et al. (2016) [14]	A randomized controlled trial with an intervention and a control group of occupational physicians based on 17 performance indicators	The decision of the occupational disease doctor can be improved by using educational strategies, professional meetings or formal medical education
Jan M. Stratil., et al. (2017) [15]	A qualitative study design with eight focus group discussions (FGD) with GPs, OPs, RPs, and rehabilitants	Some of the obstacles may be overcome in cooperation between categories of doctors may require dynamic intervention from different stakeholders and some obstacles may be overcome through better cooperation between doctors

First author and Year	Methodology	Conclusions
Jorma Rantanen., et al. (2017) [16]	Based on ILO Convention No. 161, a questionnaire was drafted and distributed to 58 key informants: ICOH National Secretaries	The majority of countries have drawn up policies, strategies and programs for OHS. The infrastructures and institutional and human resources for the implementation of strategies, however, remain insufficient in the majority of countries (implementation gap). The estimated coverage of services in the study group was low; only a quarter of the total employed population (coverage gap)
Birgit Teufer., et al. (2019) [17]	A literature review for relevant systematic reviews published between January 2008 and June 2018 on the prevention of occupational injuries, musculoskeletal, skin and lung diseases, occupational hearing impairment and interventions without specific target diseases	OHS (occupational health safety) intervention is important and leads to positive outcomes related to occupational disease. Policymakers must make use of all available resources. It was found from the review of the scientific literature that there is a considerable gap related to the identification of the role of cancer and blood diseases in work-related mortality and morbidity
Min Zhang., et al. (2020) [18]	Literature review based on four main sources: national statistics information, original governmental documents, reports, news, and other online grey literature, scientific articles published in the past five years, comparative analyses across countries conducted through international collaborations and programs, particularly the International Labor Office (ILO)	New institutional reforms related to China's OD regulatory system are a great opportunity to improve OH. Based on both national and international experiences and lessons, an employer-initiated management system should be required by a further amendment to the Chinese OD Law
Anya R. Keefe., et al. (2020) [19]	A scoping review to identify occupational disease prevention strategies	It is more valuable to implement effective strategies in the prevention of occupational diseases. Although occupational diseases are preventable, they remain present in many countries and this requires the commitment of stakeholders and why not even researchers to explore in this field

*Table 1: Summary of the reviewed Articles*

## Discussion

The results of studies show that the strategies followed regarding the prevention of occupational diseases are essential in avoiding the effects they bring on health, society or the economy. Collaboration between physicians is also another important component in the occupational disease management strategy. Two of the articles included in the literature review, consider very promising the cooperation between doctors of occupational diseases and doctors of other specialties, in terms of practical implementation of interventions to maintain the health of employees [13, 15]. This cooperation in some cases is not optimal and this is related to some obstacles that do not allow doctors to share their experiences thus resolving occupational health issues [15].

The purpose of occupational medicine is to prevent occupational diseases and this requires not only scientific knowledge of the occupational physician, but also effective interventions to reduce the incidence and severity of these diseases. In order for the role of occupational physician to be concrete, he must be well acquainted with the designed strategies and protocols that must be implemented in the workplace. Continuous training and updating of knowledge or adaptation to the recommendations given by the sectors responsible for the maintenance of occupational health are key points in the way the occupational physician performs his duty [16].

Although nowadays occupational diseases and their impact on health are well known, they still continue to be in high numbers and to be the cause of morbidity and mortality in active persons at work. To avoid this situation, it is important to implement effective prevention strategies. Decision makers and stakeholders to consider studies conducted in this field and to carry out interventions based on evidence and scientific research [19].

Problems related to occupational medicine are closely related, not only to the health system, but also to the economic system of a country. Well-being at work is reflected in increased productivity and positive effects on the economy. A well-managed system of occupational medicine, with the necessary infrastructure, capacity building, integration and continuing education of the occupational physician, together with experts in other fields, will promote an increase in the quality of the workforce and consequently growth in the economy sector [20].

## CONCLUSION

Based on this literature review, occupational medicine is one of the key components of preventive medicine and performs some complex tasks, which require the occupational physician to be in a dynamic education that responds to the challenges of the future. Occupational medicine, with well-defined strategies will follow new developments, not only, taking care of sick or injured employees, but expanding its field in the prevention and promotion of occupational health.

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# MANAGING COMPETITIVE CHANGE CAPABILITIES FOR SUSTAINED EU ACCESSION

Leonid Nakov\*, Paskal Zhelev\*\*

**Abstract.** Contemporary economic, particularly management challenges for increasing and intensifying overall business capacities of EU Accession countries, such as North Macedonia, are predominantly linked to obtaining fundamental and applicative methodological framework for profound change and transformation, aimed at simultaneously integrating the experience of national economies that have already undergone this thorough and dedicated process, like Bulgaria, on one hand, and increasing the potential for change management of businesses and institutions to apply the sustainable national change accession framework. In clearing up the 3 fundamental prerequisites for entering into EU accession negotiations, while paying particular emphasis on legal and transformational challenges, the third one, i.e. economic one plays a highly important role in increasing the national competitiveness, as well as the capacity for implementing sustainable changes.

Critical-to-quality change managerial competencies and capabilities for each EU Accession country, such as North Macedonia, are intended to identify the most applicable national model for sustainable changes and development, as a fundamental determinant of the overall future national economic and especially business capacity and competitiveness.

**Keywords:** change capabilities, core competences, sustainable competitive advantage, EU accession.

**JEL Classification:** M21, O12.

## INTRODUCTION

In the light of the fundamental importance of each transformational national economy, particularly those that are in a process of accessing to the European Union, such as North Macedonia, it is evident that the newly adopted Draft negotiating package would reflect the changes within the popularly known *Accession pillar legs* (Brussels Times, 2020, at <https://www.brusselstimes.com/>), illustrated as:

- *Firstly*, the accession process needs to be more credible and build on trust, mutual confidence and clear commitments by the EU and the Western Balkans,
- *Secondly*, it requires a stronger political steer and involvement by the Member States in the monitoring of progress,
- *Thirdly*, in what appears as the most innovative element in the proposal, the Commission proposes to make the process more dynamic, by grouping the 32 negotiating chapters, which make up the EU legislation (the so-called *acquis*), in six thematic clusters.

— The first cluster includes ‘fundamentals’ such as the *rule of law chapters, the functioning of democratic institutions and public administration reform as well as the economy of the candidate countries.*

— The other clusters are *internal market; competitiveness and inclusive growth; green agenda and sustainable connectivity; resources, agriculture and cohesion; external relations*”.

Principally, the ‘fundamental clusters’ would be opened first as of higher priority compared to the following 5 cluster categories, implying to the fact that the result-driven negotiating approach reflects success in achieving benchmarks of every chapter, particularly those in the field of *rule of law and good governance*. At the same time, having in mind that the overall accession packet comprises of 6 candidate countries, i. e. Serbia, Montenegro, North Macedonia, Albania, Turkey and Kosovo, economies that have already opened accession chapters according to the previous Methodology, such as Serbia and Montenegro, could apply for the new and more detailed accession procedures, in order to achieve the criteria of *outcome — oriented and sustained benchmarks for each chapter*.

This proposed paper would apply interpretative review research methodological framework, with particular emphasis on recommendations and benchmarks for increasing managerial capabilities for business and administrative changes and development, for an enhanced fulfilling of the EU chapters benchmarks.

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## EU ACCESSION PHASE OF NORTH MACEDONIA AND BUSINESS CHANGE EXPECTATIONS

Starting back in 2009, European Commission has continuously recommended for North Macedonia opening the accession process, which has eventually resulted, in March 2020, with the decision of the Council for General Affairs of the European Union, for opening accession negotiations. The basic framework for the entire accession process has been clearly decided to be undertaken according to the revised methodology, known as “*Enhancing the accession process — A credible EU perspective for the Western Balkans*” (EC, 2020 at <http://europeanmovement.org.mk/>), concluded prior to the decision, in February 2020. The Draft negotiating framework has been presented to all member states in July 2020, whereas the final decision is expected to be reached on November 17<sup>th</sup>, 2020, which would lead to the first, most welcomed Inter-Governmental Conference between the EU and North Macedonia in December 2020.

It is very valuable, especially in increasing the dynamics of closing each chapter, to use the experience and most suitable approach to overcoming administrative, managerial, financial and legislative obstacles which every transitional national economy faces, which, in the case of neighboring EU member Bulgaria, have been identified, in our opinion, on the following way:

- Attempting to increase the public awareness for the importance of introducing ‘systems performance model’ as an initial pre-condition for economic freedom and managerial development,
- Identifying the prevalent importance for increasing the independence, capacities and developmental model of all administrative institutions, with an emphasis to preserving obstacles and promoting sustainable and integrative European values, as well as,
- Undertaking special negotiating framework for industries which have been determined as being or in a process of becoming competitive, technologically advanced and adding-value to the overall national economic and social system.

The EU accession would dramatically *alter the intensity of the intra-industry competition, the market potentials, the number and type of operating competitors, the entry and exit conditions of the respective industries, the threat from start-ups, price-quality ratios*. All these reversals result in strengthening the competitive pressure on the accession countries’ producers, which puts their competitiveness to a serious test. As the experience of the New Member States shows, companies which ignore the strategic aspects of competitive company management, use cumbersome organizational structures, and delay the adoption of modern approaches to transformation management eventually have to leave the market.

Short-term, operational management aimed at survival and preservation of established structures and market positions is not a viable option for businesses preparing to function under conditions of future EU membership. Building *resilience through improved competitiveness* requires solid change capabilities and aggressive willingness to adapt to new competitive conditions.

The importance of transforming the entire society, especially the economic and management systems is placed within the entire framework of ‘economic chapters’, which are fundamentally related to the perception of Macedonian managers and decision makers effectively to change, in order to *meet faster the required ‘threshold chapter benchmarks’*. In attempting to develop the overall capabilities of managers in business and administrative institutions, initial step should reflect their *beliefs in the capability of the required changes* (Quade, Sullivan & Rothwell, 2005), best identified through the following *change-capability challenges*:

1. “Who should be involved in an organization change effort, and how should they be involved?
2. Who should make decisions about the way in which a change effort of any kind is launched? Implemented on a continual basis? Evaluated?
3. What do you believe about change in the world generally?

4. *What do you believe about change in today's organizations?*
5. *What do you believe are the biggest challenges facing decision-makers in organization change efforts?*
6. *What do you believe are your own strengths and developmental needs in enacting the role of "helper to others" in a change effort? What do you do especially well? What do you wish to personally develop to become a more effective change agent? On what basis do you believe as you do?*
7. *When do you believe that a group of people might need a helper in a change effort?*
8. *Where do you believe that the most profound changes are occurring in the world, and why do you think as you do?*
9. *Why should organization change and development be a focus for the attention of managers? Other groups?*
10. *How should change be marketed? Launched? Implemented? Evaluated?*
11. *How have you reacted in the past to change in an organization in which you have been employed or been a consultant with? Think about what you did and how you felt as the change occurred.*
12. *What are some common examples of organization change in organizations? Reflect on what they are. Consider such interventions as team building, implementing technological change, succession planning, culture development, aligning management, enterprise wide change, mergers and acquisitions, and structural reorganizations".*

A proper and consistent applying of such questions to a representative sample of Macedonian business and administrative managers is dependent on a progressive understanding of the following *key trends for future changes* (Prescott, Rothwell & Taylor, 1998), which have substantially increased the competitive degree of the national economies that joined EU after 2000, i. e. Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria, Romania and Croatia, determined as:

- *Changing technology* — refers to rapid advances in human know-how;
- *Increasing globalization* — refers to the impact of rapid transportation and global communication on doing business;
- *Continuing cost containment* — refers to efforts undertaken by organizations to address declining profit margins, wrought by the ease of price comparisons through web-based technology, by making decided efforts to improve profits by reducing the costs of business operations;
- *Increasing speed in market change* — refers to the continuing importance of beating competitors to the punch to meet the rapidly changing tastes of consumers;
- *Growing importance of knowledge capital* — refers to the key value-added capabilities of human creativity to identify new businesses, new products, new services, and new markets; and,
- *Increasing rate and magnitude of change* — refers to the increasing speed and scope of changes that occur.

Unification of above most expected future trends is analyzed through *levels of sustainable value creation* (Figure 1), would stimulate *overall potential of the national change accession framework*, as well as concentrate all decision — makers on created future rather than on expected future.

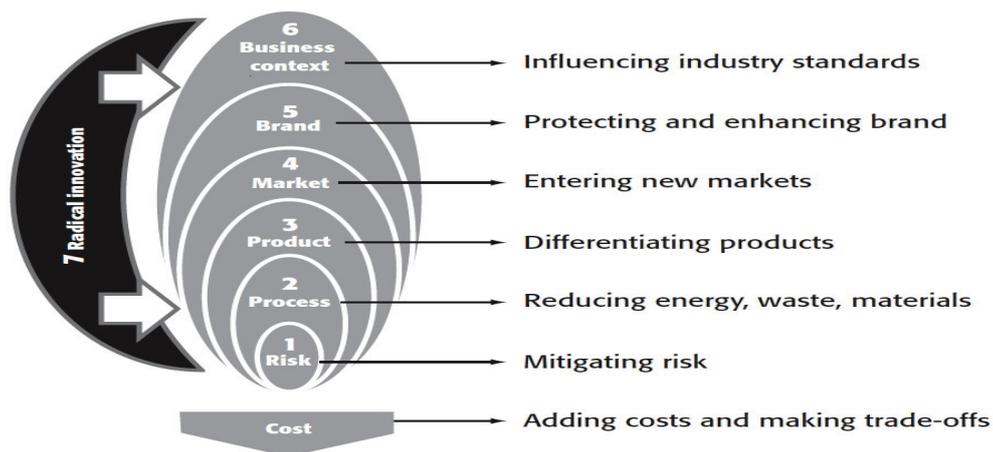


Figure 1: Levels of sustainable value creation

Source: Laszlo Chris (2003), "The Sustainable company: How to create Lasting Value through Social and Environmental Performance"

While advancing from level 1 to level 7 at various business and administrative entities, *national competences increase, leading to creating and sustaining change capabilities.*

### MANAGING SUSTAINABLE RELATION BETWEEN CORE COMPETENCES AND CHANGE CAPABILITIES

Each national competitiveness is a creative unity of national capacity for external adaptation and internal integration of the entire scope of national applicative knowledge and competences at numerous organizations and institutions. In order to reach the state of *relative competitive capability which results in competitive advantage at particular business/administrative sectors*, it is important to detail the phases of *the process for creating and sustainable competitive advantage*:

1. *The initial step in creating and sustaining a competitive advantage*, in fact, is the process of *building change capability* at each business/administrative organization/institution. Principally, *change capability* is identified (Anderson & Ackerman-Anderson, 2010) as "*the ability of an organization to plan, design, and implement all types of change efficiently with committed stakeholders, causing minimal negative impacts on people and operations, so that desired business and cultural results from change are consistently achieved and integrated seamlessly into operations to deliver maximum ROI and other KPI's*".

Having in mind that *the change capability concept improves the core competences of each organization/institution*, through deliberately increasing the new value at competitive segments of the portfolio of products/services, *the levels of impact of the change capability* are best illustrated on the following Figure 1:

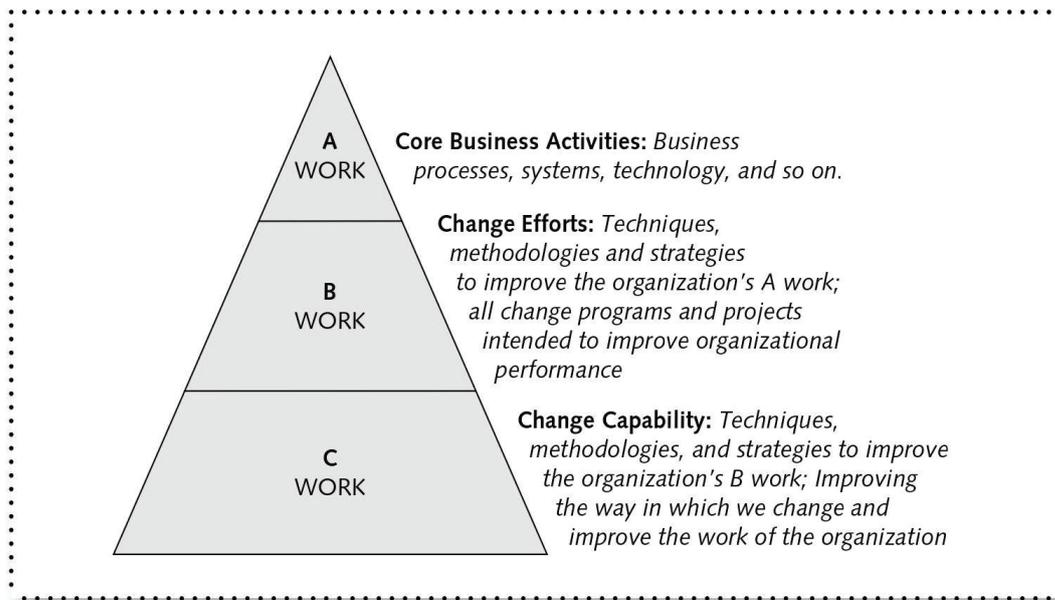


Figure 2: Impact of change capability

Source: Anderson & Ackerman-Anderson (2010), "Beyond Change Management: How to Achieve Breakthrough Results through Conscious Change Leadership"

2. Clearing up the relationship between core competences and change capabilities is the essence of the second step in building up the model of competitive advantage. In order to detail their causality, initially would be determined *core competence* (Prahalad and Hamel, 1990) as "the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technology". As such, they relate to different portfolios of product/service categories (lines), as well as profound competences for protecting an easy way for entering new competitors with new and unrelated business concepts.

Empirical illustrations of core competencies would be presented through the following examples of various famous MNC's, as a pathway for Macedonian businesses:

- Nestle — outstanding quality, preserving health, with an emphasis on detailed analysis of degree of customer satisfaction,
- Google's core competence is placed at complete service of a highly developed engineering process, innovation oriented, scalable infrastructure etc.

3. The third step is linked to harmonizing the core competences with the change capabilities, fundamentally determined as the following structural portfolio composition, as implications for strategy (Stanford University, 2010):

- "Portfolio of competencies"
  - Competencies are the roots of competitive advantage, and therefore businesses should be organized as a portfolio of competencies (or capabilities) rather than a portfolio of businesses,
  - Core competence is communication, involvement, and a deep commitment to working across organizational boundaries.
- Products based on competencies
  - Product portfolios (at least in technology-based companies) should be based on core competencies, with core products being the physical embodiment of one or more core competencies,
  - Core competence allows both focus (on a few competencies) and diversification (to whichever markets firm's capabilities can add value).
- Continuous investment in core competencies or capabilities

— *The costs of losing a core competence can be only partly calculated in advance - since the embedded skills are built through a process of continuous improvement, it is not something that can be simply bought back or “rented in” by outsourcing,*

- *Caution: core competencies as core rigidities.*

— *Good companies may try to incrementally improve their competencies by bringing in one or two new core competencies with each new major development project they pursue”.*

Finally, in applicative understanding of the *sustainable competitive advantage*, it is crucial to specify that *contemporary tendencies in creating and sustaining competitive advantage* possesses the historical developmental context of *previous accession country’s national developmental path-way, including stimulating degree of competitive pressure, technological advancements, as well as quality management information basis*, through the following, prevalent *competitive advantage analytical frame-work*:

- *“Variable rules of the competitive struggle, which result in a continuous pursuit for a change and cause that the existing simple rules for building a competitive advantage become outdated, are encouraging to redefine the sources and consequences of the competitive advantage” (D’Aveni, Dagnino, Smith 2010; Greve 2009).*

Successful creating and sustaining competitive advantage *increases the national potential* for a more prosperous EU accession negotiations of candidate countries, as of North Macedonia.

## CONCLUSION

In the light of the fundamental importance of each transformational national economy, particularly those that are in a process of accessing the European Union, such as North Macedonia, it is evident that the newly adopted Draft negotiating package would reflect the changes within the popularly known Accession pillar legs. The basic framework for the entire accession process of North Macedonia has been clearly decided to be undertaken according to the revised methodology, known as “Enhancing the accession process — A credible EU perspective for the Western Balkans”, concluded prior to the decision in February 2020. As the experience of the New Member States shows, companies which ignore the strategic aspects of competitive company management, use cumbersome organizational structures, and delay the adoption of modern approaches to transformation management eventually have to leave the market.

Each national competitiveness is a creative unity of national capacity for external adaptation and internal integration of the entire scope of business and administrative applicative knowledge and competences at numerous organizations and institutions. In order to reach the state of relative competitive capability which results in competitive advantage at particular business sectors, it is important to detail the phases of the process for creating and sustainable competitive advantage. The initial step in sustaining a competitive advantage in fact is the process of building change capability at each business/administrative organizations/institution. Clearing up the relationship between core competences and change capabilities is the essence of the second step in building up the model of competitive advantage. The third step is linked to harmonizing the core competencies with the change capabilities, composed of portfolio of competencies, products based on competencies, continuous investment in core competencies or capabilities, and cautiously treating core competencies as core rigidities.

In applicative understanding of the sustainable competitive advantage, it is crucial to specify that contemporary tendencies in creating and sustaining competitive advantage possesses the historical developmental context of previous accession country’s national developmental path-way, including stimulating degree of competitive pressure, technological advancements, as well as quality management information basis. Successful creating and sustaining competitive advantage increases the national potential for a more prosperous EU accession negotiations of candidate countries, as of North Macedonia.

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# A QUANTITATIVE ANALYSIS OF AGRICULTURAL PRODUCTION IN GREECE, 2004–2016

Leonidas Zangelidis\*

**Abstract.** *The paper looks into Greece's agricultural production in terms of labor, land, capital, energy and other inputs at the subnational level, across four regions (Thessaly, north, west, and the rest of Greece), on the basis of 52 annual observations running from 2004 to 2016, supplied by the EU's Farm Accountancy Data Network. It charts the evolution of the main variables and of productivity, and carries out Granger causality tests on all inputs in each region, and econometric analyses to estimate the impact of the said inputs and the magnitude of entrepreneurship, technology and impact of the factors not considered in the regression (multi-factor productivity). Alternative specifications are considered in order to deal with stationarity: three variants (pooled, fixed and random effects) of (i) a detrended linear log-log model, (ii) a linear log-log model with a time trend, (iii) a linear model based on first differences of input and output logarithms (all in the conventional Cobb-Douglas context), and (iv) a linear model based on first differences (irreconcilable with the conventional Cobb-Douglas setting). To deal with heteroscedasticity, the analyses are carried out with robust standard errors, and to ensure regressor independence all regressors are rendered uncorrelated to each other. The results suggest that multi-factor productivity varies across space; and that labor and energy constitute the main explanatory factors.*

**Keywords:** *Cobb-Douglas, agricultural production, productivity, regional analysis, stationarity in time series*

## INTRODUCTION

The purpose of the paper is to study the economics of production in the agricultural sector in Greece across four regions (north Greece, west Greece, Thessaly, the rest of Greece), a few years prior to the international financial and economic crisis and during the country's long recession, namely from 2004 to 2016, on the basis of data obtained from the European Commission's Farm Accountancy Data Network. The sample is quite reasonable involving, for instance, 4,253 (4,254) farms representing 390,320 (347,339) farms in 2004 (2014).

Similar issues have been studied and analyses carried out in a number of countries (e. g., Bhatt, 2014; Chisasa and Makina, 2015; Güvercin, 2018), while many more focus on individual subsectors, products, regions or subregions. As a result, the paper is part of an identifiable strand in economic literature.

It is organized as follows: Chapter 1 describes the data and in the process presents some easy-to-compute figures. Chapter 2 discusses modeling issues for a more sophisticated analysis, namely the econometric estimation of the sector's production function. Chapter 3 supplies the empirical results; and Chapter 4 provides the conclusions.

## INITIAL FINDINGS

The descriptive statistics of the data are provided in Table 1, and suggest that during the time in question, on average, holdings in: (1) The north part of the country (running from West Macedonia to West Thrace, along with the islands of Thasos and Samothraki) featured more capital in the form of machinery ( $K_2$ ), hectares ( $T_b$ ), a higher use of energy ( $E$ ), a higher value of livestock, as well as costs for feeds, seeds, fertilizers, and such inputs. (2) The west part of the country (spanning Epiros, the Ionian Islands and the Peloponnese) were associated with higher valued land. (3) Thessaly (in central Greece) and north Greece provided more output ( $Q$ ). (4) The rest of Greece (i.e., the mainland south of Epiros and Thessaly and north of the Peloponnese, along with Crete and the other Aegean islands) relied on more labor ( $L$ , in terms of man-hours), used more livestock (in terms of heads), capital stock in the form of buildings ( $KI$ ), and carried out more investments in buildings and machinery.

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Variables	north country <sup>1</sup>		west country <sup>2</sup>		Thessaly		Rest of Greece	
	mean	std.dev	mean	std.dev	mean	std.dev	mean	std.dev
1. Output (Q) in €	23904	1864	20731	1627	23949	1785	22201	1403
2. Labor (L) in full-time person equivalent (FTPE)	1.13	0.09	1.16	0.19	1.18	0.12	1.35	0.10
3. Terrain (T)								
a. Value in €	51672	9370	77158	19999	68001	5196	73184	9601
b. Utilized area in hectares	11.31	0.85	6.34	1.00	10.48	0.97	7.85	1.80
c. Value per hectare: (a)/(b)	4547	690.0	12036	1610.9	6535	682	9551	1217
4. Capital, investment, costs in €								
a. Stock of buildings (K <sub>1</sub> )	8086	1104	7467	3522	5474	1071	8734	1654
b. Stock of machinery (K <sub>2</sub> )	24868	6300	12690	4810	20189	5840	13519	3404
c. New buildings-machinery	677	175	526	120	607	380	942	191
d. Costs for feeds, seeds etc.	8251	935	5011	874	7470	755	6014	470
e. Breeding livestock converted in head units	6.10	0.56	5.30	0.52	6.37	0.64	7.16	0.35
f. Breeding livestock in €	4683	6459	2894	216	4161	63	4171	174
g. Cost of energy (E) in €	2371	609	1091	332	2363	559	1489	348

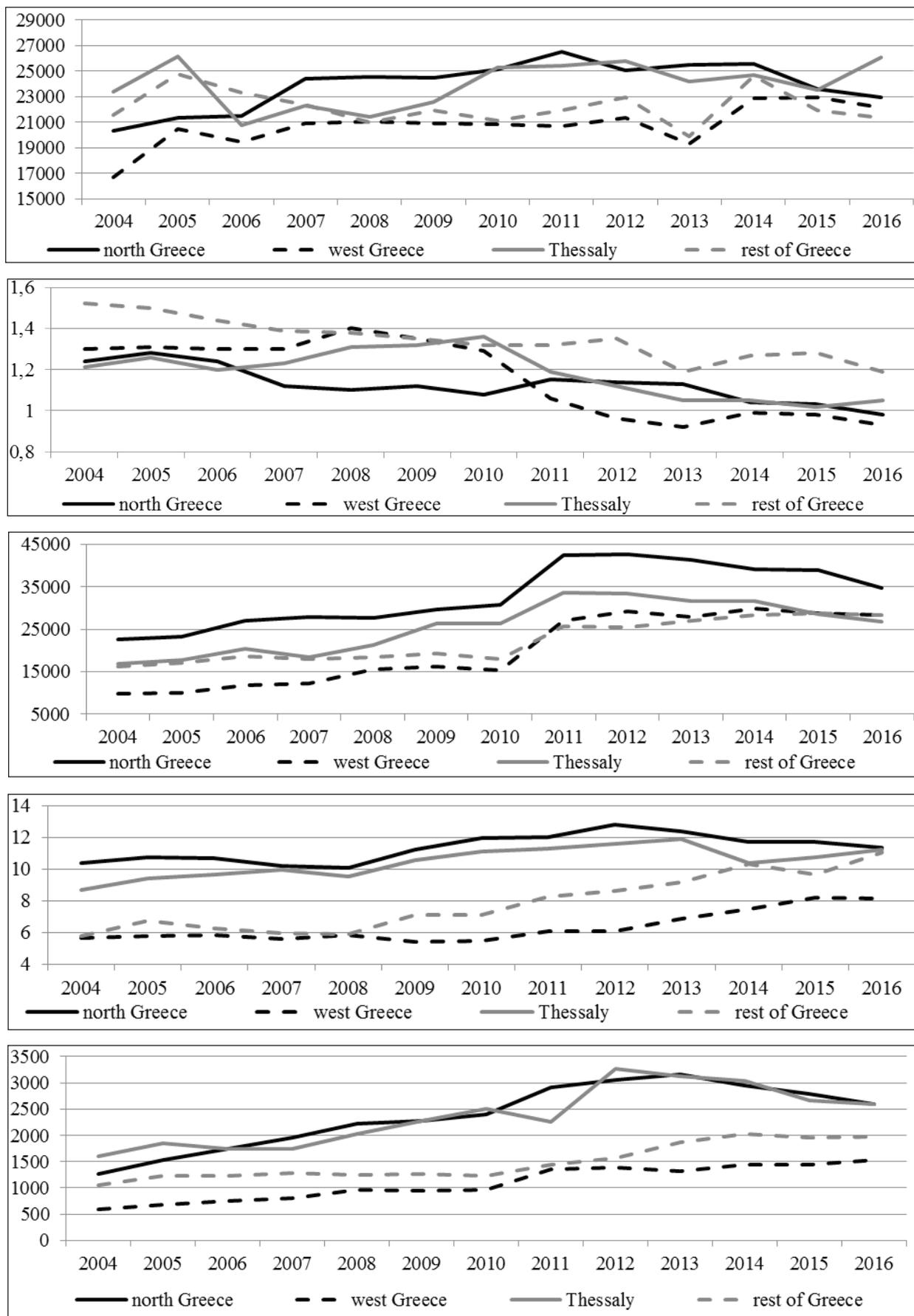
Notes: <sup>1</sup> The north country consists of Western, Central and Eastern Macedonia, Western Thrace, the islands of Thasos and Samothraki. <sup>2</sup> The west country consists of Epirus, the Ionian islands, and the Peloponnese.

Source: EU Farm Accountancy Data Network; own calculations.

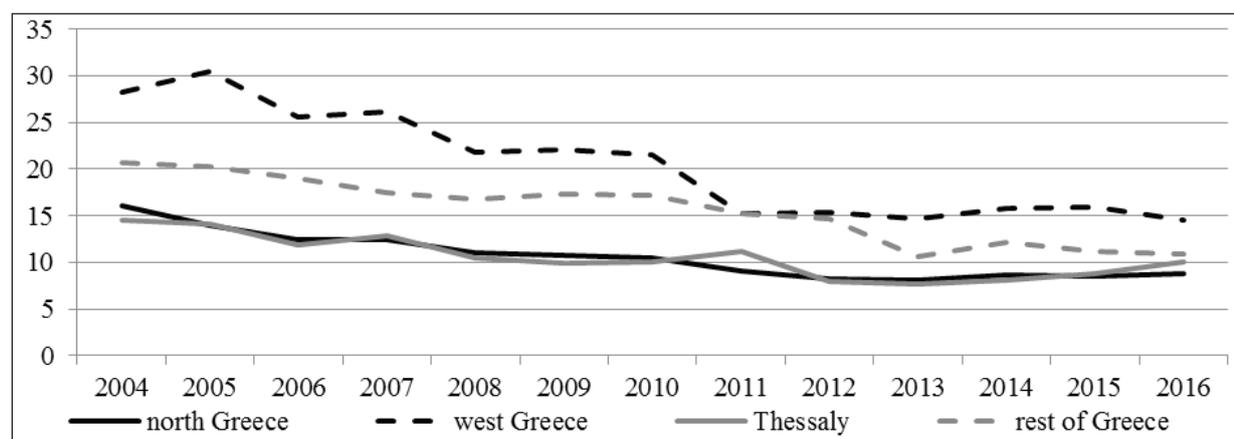
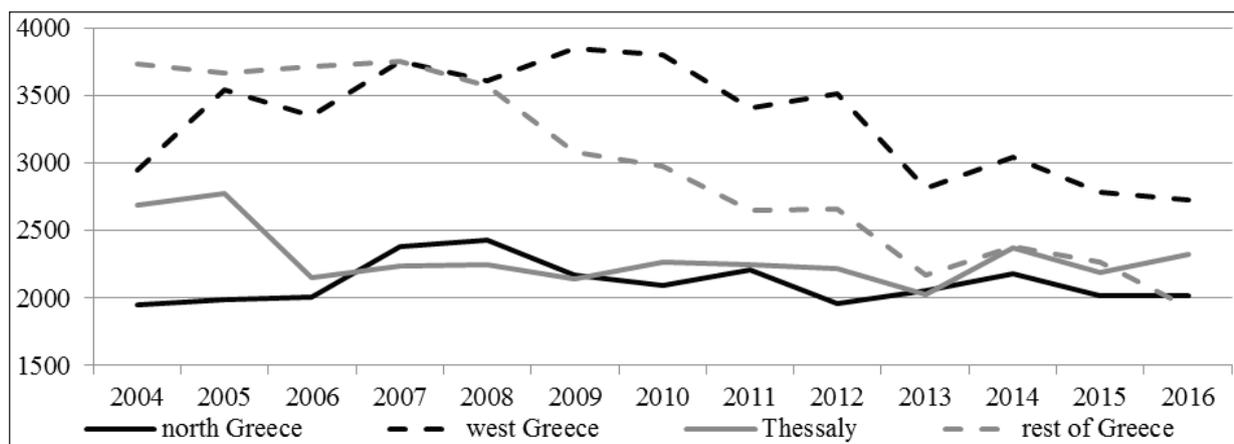
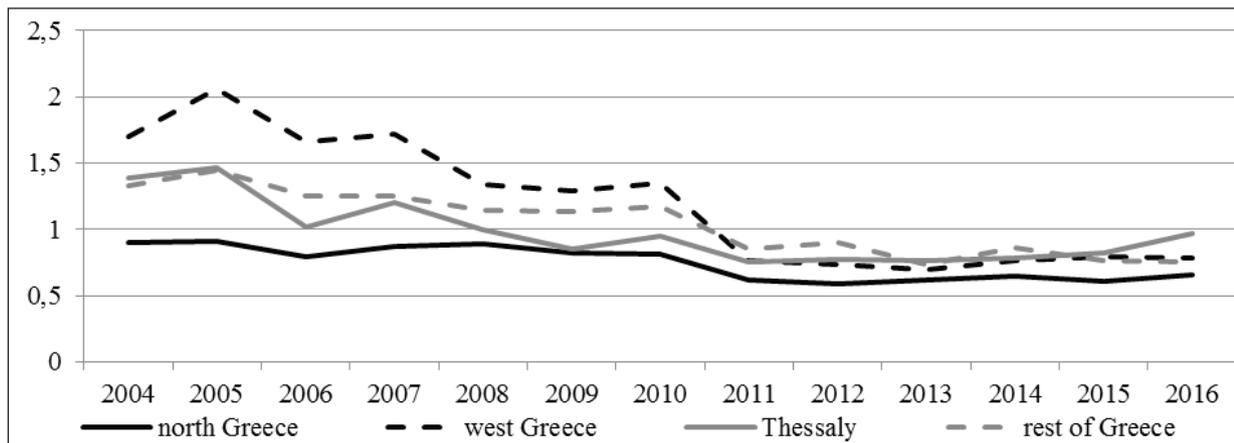
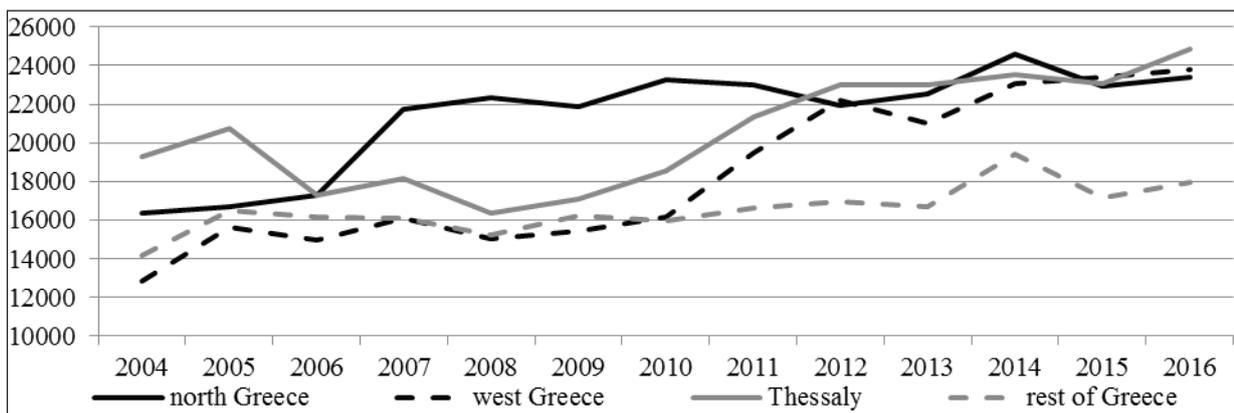
*Table 1: Descriptive statistics of agricultural production in Greece, 2004–16 (average holding, annual data)*

In addition, a series of basic calculations regarding output and the inputs involved reveal (Figures 1–9) that: (I) Q generally increased over time; was higher in north Greece and Thessaly, and lower in west Greece and the rest of Greece. (In the latter two regions it evolved very much the same from 2008 onwards.) (II) L generally decreased over time; was lower in Thessaly in 2004–2006, in north Greece in 2007–2010, and in west Greece in 2011–6, and higher in the rest of Greece. (III) K increased over time, much in the same manner across all regions, and was higher in north Greece, modest in Thessaly, and lower in west Greece during 2004–10, and in both west Greece and the rest of Greece during 2011–16. (On the other hand, the 75 % increase observed between 2010 and 2011 in western Greece was the highest change observed across all inputs.) Obviously, from L's decrease and K's increase, the sector moved from a more labor-intensive (less capital-intensive) to a less labor-intensive (more capital-intensive) state. (IV) Tb generally increased over time; was lower in west Greece through the period, and in the rest of Greece during 2004–08; and higher in north Greece, Thessaly, and (at the end of the period) in the rest of Greece. (V) E generally increased over time; was higher in north Greece and Thessaly, lower in west Greece, and modest in the rest of Greece. (VI) Labor productivity (Q/L) increased over time; was higher in north Greece, Thessaly (esp. in 2004–6, 2012–16) and west Greece (in 2012 on), modest in Thessaly (in 2007–11) and west Greece (in 2010–11), and lower in west Greece (in 2004–10) and the rest of Greece. (VII) Capital productivity (Q/K) decreased over time; was lower in north Greece, and higher in west Greece (up to 2010), and in Thessaly and the rest of Greece (subsequently). (VIII) Land productivity (Q/Tb) generally decreased over time, was higher in west Greece from 2008 on, and the rest of Greece in 2004–8, modest in the rest of Greece in 2009–12, and lower in north Greece and Thessaly throughout the period, and in the rest of Greece during 2013–6.

(IX) Energy productivity (Q/E) decreased over time, was higher in west Greece, lower in Thessaly and north Greece (it evolved very much the same), and modest in the rest of Greece.



Figures 1–5: Agricultural inputs and output in Greece, 2004–16 (average holding, annual data)



Figures 6–9: Productivity in agricultural across Greece, 2004–16 (average holding, annual data)

At the same time, the performance of Granger (1969) causality tests among inputs, both within and across regions, based on first differences, suggest that, at the 0,01 % probability of error, in Thessaly changes in the stock of buildings steadily anticipated changes in the value of livestock, and changes in the size of livestock (number of heads) steadily anticipated changes in labor; while in the rest of Greece changes in land value steadily anticipated changes in labor, and changes in building and machinery investments steadily anticipated changes in livestock size (Table 2).

Null hypothesis	Region	p-values < 0.01 %
Stock of buildings does not Granger cause livestock value	Thessaly	0.0064
Livestock (in heads) does not Granger cause labor	Thessaly	0.0090
Holding's land value does not Granger cause labor	Rest of Greece	0.0005
New buildings-machinery do not Granger cause livestock (in heads)	Rest of Greece	0.0092

Source: See Table 1.

Table 2: Granger causalities with one lag on first differences of agricultural production inputs across holdings in Greece (2004–16)

## MODELING ISSUES

To properly look in the impact of the aforesaid inputs on production we turn to econometrics. First, we select a model that rules out production on the basis of a single input. The simplest approach is to employ an extended Cobb-Douglas expression (Charnes, et al. 1976), for instance,

$$Q = A L^a K^b T^c E^d u, \quad (1)$$

with  $u$  denoting the error term, the other lower case letters standing for input coefficients, and  $A$  standing for multi-factor productivity, i. e., the element that captures the impact of entrepreneurship and technology in combining the inputs involved, as well as the impact of other factors not specified in the expression (e. g., Chiang, 1984; 2000; Erken et al., 2016).

Secondly, we consider the issue of stationarity, that is, the issue (assumption) of a non-changing regressor mean and variance over time, so as to preclude complications in the case of predictions or autocorrelation analyses — though the paper has no such direction. To deal with non-stationarity one may (a) incorporate in the expression a trend term ( $t$ ), (b) detrend the variables involved or (c) rely on successive differences (Maddala, 2001; Gujarati, 1995). All three are technically simple, though, in order to preserve degrees of freedom, we will not proceed beyond first differences. To incorporate a trend, and as matters in each region may evolve in a different way, a variant of expression (1) with factors that may vary over time ( $t$ ), and across space ( $i$ ), in order to suit the data, is considered:

$$Q_{it} = A_{it} L_{it}^a K_{it}^b T_{it}^c E_{it}^d u_{it}. \quad (2)$$

Following the example of Jan Tinbergen (Nobel Prize laureate of 1969) and allowing  $A$  to vary over time (Wallis, 1973),  $A_{it}$  is specified as  $A_{it} e^{r_i + \lambda_{it}}$ , with  $t$  commencing at 1:

$$Q_{it} = A_{it} e^{r_i + \lambda_{it}} L_{it}^a K_{it}^b T_{it}^c E_{it}^d u_{it}. \quad (3)$$

Equivalently:

$$\ln Q_{it} = \ln A_{it} + (r_i + \lambda_{it}) + a \ln L_{it} + b \ln K_{it} + c \ln T_{it} + d \ln E_{it} + u_{it}. \quad (4)$$

To capture each input's rate of change, additional terms, in squared value form, may be considered. In the case of incorporating the squared value of labor, the expression takes the following form:

$$\ln Q_{it} = \ln A_{it} + (r_i + \lambda_{it}) + a \ln L_{it} + g(\ln L_{it})^2 + b \ln K_{it} + c \ln T_{it} + d \ln E_{it} + u_{it}. \quad (5)$$

Last but not least, all explanatory variables are made linearly independent of one another:  $L$  from  $t$ ,  $K$  from  $t$  and  $L$ ,  $T$  from  $t$ ,  $L$  and  $K$ ,  $E$  from  $t$ ,  $L$ ,  $K$ , and  $T$ ; thus, satisfying a basic assumption regarding the independence of regressors. (E. g., by Riley, 2012, and others.) In essence, instead of regressing  $\ln Q$  on arguments  $t$ ,  $\ln L_{it}$ ,  $\ln K_{it}$ ,  $\ln T_{it}$ , and  $\ln E_{it}$ , initially  $\ln L_{it}$  is regressed on  $t$ , an  $\ln L_{it}'$  is predicted, and an orthogonal  $\ln L_{it}^{\circ} = \ln L_{it} - \ln L_{it}'$  is estimated; next,  $\ln K_{it}$  is regressed on  $t$  and  $\ln L_{it}^{\circ}$ , an  $\ln K_{it}'$  is predicted, and an orthogonal  $\ln K_{it}^{\circ} = \ln K_{it} - \ln K_{it}'$  is estimated, and so on. Thus, we may explain  $\ln Q$  in terms of  $t$ ,  $\ln L_{it}^{\circ}$ ,  $\ln K_{it}^{\circ}$ , and additional regressors estimated in the same manner. Consequently, in the context of Tables 3 and 4, the second regressor is independent of the first regressor, the third regressor is independent of the former two, and so on. Indeed, insofar as in Table 4 the second regressor (lines 6–10) is, often,  $t$ , all other the explanatory variables (i. e., the inputs used) are made linearly independent of  $t$  and their stationarity issues resolved. It goes without saying that the order of the regressors employed affects the size of the estimated parameter for if the order were different, a different number of effects would be subtracted from each explanatory variable.

### EMPIRICAL RESULTS

Four models are considered: (A) Model A is based on expression (5). (B) Model B is a variant of expression (5) that employs detrended variables (i. e., variables regressed on  $t$ , on the basis of which the trend element is subtracted). (C) Model C is based on the first differences of expression (2). (D) Model D is based on the first differences of expression (5). Each model is carried out under both possible data organization structures: in panel and pooled format. In the case of the former, the random effects (RE) variant is always preferred over its fixed effects (FE) counterpart, after the Hausman (1978) test. In the case of the latter, individual regional effects (if any) are easy to spot. To deal with heteroscedasticity, all analyses are carried out with robust standard errors. The best fits of the both the RE and the pooled analysis results are presented in Tables 3 and 4, respectively.

Explanatory variables	Model A <sup>1</sup> log-log	Model B log-log detrended	Model C first differ- ences	Model D log-log first differences
1 Constant	10.056	9.808	299.261	0.014
2 Labor in FTPE	-0.169	0.362	17,023.100	0.963
3 Labor in FTPE, squared			66,297.340	4.737
4 Costs for feeds, seeds etc.	0.316			
5 Value of land		0.382	0.079	0.227
6 Stock of buildings				-0.163
7 Cost of energy	0.124	0.175	1.699	
St. Dev. (u)	0	0	0	0
St. Dev. (e)	0.060	0.049	1667.042	0.074
Rho (fraction of variance due to u)	0	0	0	0
Observations (N)	52	52	48	48
Number of groups	4	4	4	4
Model fitness (R <sup>2</sup> )				
• within	41 %	25 %	33 %	34 %
• between	100 %	99 %	90 %	31 %
• overall	64 %	81 %	33 %	34 %

Notes: The second regressor is linearly independent of the first regressor, the third regressor is linearly independent of the former two regressors, and so on. The Levin–Lin–Chu, Harris–Tzavalis, Breitung, Im–Pesaran–Shin and Hardi tests are considered. P-values: Model A: (2) 0.011, (7) 0.032. Model C: (5) 0.004, (2) 0.005, (1) 0.020, (3) 0.059. Model D: (6) 0.011, (5) 0.024, (1) 0.044. The rest are equal to 0.000.

<sup>1</sup> Some variables are not stationary. Source: See Table 1.

Table 3: Random effects GLS regressions with robust standard errors on holding output across Greece, 2004–16

Of the RE results associated with low p-values (less than 1 %), the estimated parameters regarding labor (in Models B–D), energy value, land value (Models B–C), and the cost of feeds, seeds, fertilizers etc. (in Model A) are associated with a positive sign; while the estimated stock of buildings (in Model D) is probably associated with a negative sign (the p-value = 0.011). This suggests that *ceteris paribus* it might be better if the said stock were reduced. Model A is not likely to satisfy stationarity proponents, while Model C (which is based on a linear arrangement of terms, of the sort  $dQ = a dL + c dT + d dE + u$ ) implies that the production function is linear and, hence, irreconcilable with the multiplicative, Cobb-Douglas, setting of expression (1). Indeed, it implies that inputs are perfect substitutes and, hence, allows for production entirely without labor (and/or other inputs). Model D has both a typical Cobb-Douglas component and a linearly added component (in particular:  $Q = 1.014 L^{0.963} T_a^{0.227} K_1^{-0.163} + e^{4.737(\ln L)(\ln L)}$ ) neither of which allows for zero inputs. Overall, the estimated coefficients of Models A and B add up to less than one, while the estimated coefficients of Model D to more than one. This suggests decreasing or increasing returns to scale, respectively.

The pooled analysis provides more information at the regional level. The results associated with low p-values (less than 1 %) reveal: (1) Considerable entrepreneurial and/or technological heterogeneity across space and time: The term associated with  $A_{it}$  is higher in Thessaly (in Models A–B), and the rest of Greece (in Model A), and increased over time in west Greece, Thessaly, and north Greece (in the latter case at decreasing rate) (Model A). (2) That the impact of labor, energy (in all Models), the stock of capital (in Model A), the flow of investments (Model B), and land value (in Model C) varied across space.

Model C is irreconcilable with the Cobb-Douglas setting and, hence, may not be fit well with economic theory. In the other three models, the estimated input coefficients — involving labor and energy (a good proxy for the active use of capital) plus one other factor- seem to consistently add to less than one in Thessaly, to more than one in the rest of Greece — this suggests decreasing returns to scale in the former and increasing returns to scale in the latter region- and in two out of these three models the said coefficients add to less than one in north Greece and west Greece. In addition, Model D recalls a RE result by yielding a negative effect for the stock of farm buildings in west Greece (the relevant p-value = 0.030 %). However, Model B, is associated with a high goodness of fit (91 %) and more degrees of freedom vis-a-vis the other pooled data analyses carried out, so perhaps best captures and advances our understanding on how the county’s agricultural production economy operated during the period in question. According to the findings associated with p-values below 1 %, *ceteris paribus* a marginal increase in (a) labor had a negligible effect in Thessaly and a positive effect in north, west and rest of Greece; (b) the use of energy had a positive effect throughout the country; (c) capital investments for buildings and machinery had a negative effect in Thessaly and the rest of Greece. On the other hand, as mentioned, Thessaly exhibited higher levels of multi-factor productivity<sup>1</sup>.

## CONCLUSIONS

The paper reveals considerable heterogeneity in agricultural production across Greece, and advances our understanding on how the county’s regional economies operated. During the time in question, the average holding shifted from a more to a less labor-intensive state of production, its labor productivity increased, and its capital, land and energy productivity decreased. An econometric analysis based on Cobb-Douglas and Cobb-Douglas-like models (A, B, D) suggests that the impact of multi-factor productivity, perhaps, was higher in Thessaly. Moreover, it turns out that a marginal increase in labor had a positive effect in the rest of Greece (the outcome was observed in all models), and that holdings featured decreasing returns to scale in west Greece and Thessaly, and increasing returns to scale in the rest of the non-north parts of the county (in all models). However, the need for more specificity regarding individual activities and products will require different data and additional analyses.

<sup>1</sup> Variant specifications of model B involving a simple multiplicative form or deflated Y and K values are also considered. Though not developed here (the paper is supposed to be very short), they are associated with slightly lower R2s, are available upon request, and are in line with what already shown.

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# COMPARATIVE ANALYSIS OF THE CONCENTRATION IN BANKING INDUSTRY OF THE REPUBLIC OF NORTH MACEDONIA AND THE EUROPEAN UNION COUNTRIES

Ljube Jolevski\*, Pece Nedanovski\*\*

**Abstract.** *The level of concentration of the banking industry plays a very important role for the financial stability of a country, and thus for its economic development. Hence, the main purpose of this paper is to analyze the level of concentration of the banking industry in given circumstances and in specific countries.*

*In this paper, first is given a brief overview of the most relevant theoretical and practical research on the importance of the concentration in banking industry in general. In addition, the degree of concentration in the banking industry in the Republic of North Macedonia has been analyzed, and then it is compared with the level of concentration in the banking industries in the European Union countries.*

*The analysis conducted according to the Herfindahl index indicated that the Macedonian banking industry has a moderate, i. e. acceptable level of concentration. The analysis of the level of concentration of the banking industries in the European Union countries shows a significant difference. Namely, a smaller group of European Union member states have a high concentration of the banking industry, a significant number of member states have a moderate concentration, and a large number of member states have a low concentration of their banking industries.*

*In practice there hasn't been adopted yet an exact value of the indicators, which would be a limit for potential negative impact on the stability of the banking and financial industry in general. However, the conducted analysis of the level of concentration indicates the fact that there is a space for its further consolidation. Consequently, the previous would contribute to the formation of a stable and efficient banking and financial industry, as a prerequisite for economic development.*

**Keywords:** *banking industry, concentration, European Union, Republic of North Macedonia.*

**JEL classification:** *G1, G21.*

## INTRODUCTION

Banks are essential for any national economy. Indeed, dramatic changes in the financial world in recent decades led to the emergence of new financial institutions. However, banks continue to dominate in global financial markets. The development and stability of other parts of the national economy depend on banks' development and stability. Hence, they are a necessary precondition for high economic growth of the country.

On the other hand, some studies indicate that if the banking sector is too large or too concentrated, then it could have adverse effects on financial stability and fiscal sustainability of the economy as a whole. In such conditions, large banks may focus on taking excessive risks, which increases the probability of financial crises. Hence, there is a challenge for analyzing the structure of the banking industry in individual countries, their competitiveness, concentration, stability, efficiency as well as other aspects of this industry.

The paper analyzes the level of concentration in the Macedonian banking industry compared to the concentration level of the banking industry in the EU countries. The comparative analysis relies on the usage of the Herfindahl index and the indicators for the assets' participation of five largest banks in the total assets of the banking industry in the EU countries.

The paper is divided into four parts. First, it is given a brief overview of the most relevant theoretical and practical research on the role and significance of the banking industry concentration in general. The second part analyzes the concentration in Macedonian banking industry. Then, follows the comparative analysis of the concentration of the banking industries in the EU countries. Finally, the fourth part contains concluding observations from the performed analysis.

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## LITERATURE REVIEW

There are numerous theoretical and empirical studies that analyzed different aspects and significance of the concentration level's role in the banking industry. Thus, based on comparative analysis in selected countries, Allen and Gale (2004) suggest that the banking industry which consists of a large number of banks and has a lower concentration is more prone to financial crisis than a concentrated banking industry with several banks. They state several arguments for that fact, but their analysis can be reduced to the following two:

- First, a concentrated banking industry can strengthen market power and increase banking profits. High profits provide a “buffer” against adverse shocks and increase the value of the bank, reducing the initiatives of bank owners and management to take excessive risk and thus decreasing the probability of a systematic banking crisis (Hellmann, Murdoch and Stiglitz, 2000; Boot, Greenbaum and Thakor, 1993; Matutes and Vives, 2000);
- Second, it is significantly easier to track several banks in a concentrated banking industry than to track many banks in a diffuse banking industry. From this point of view, the supervision of banks would be more efficient. Also, the risks of infection and thus systemic crisis are less pronounced in a concentrated banking industry.

The proponents of the “concentration-stability” stance argue that *ceteris paribus*, banks in concentrated industries will be larger than banks in diffuse industries. According to their opinion, the larger banks tend to be better diversified than smaller banks. Concentrated banking industries characterized by several large banks would be less fragile than banking industries with very small banks. It is important to emphasize that this argument is based on the assumption of *ceteris paribus*, but it should not be forgotten that the size of the bank and the concentration of the banking industry depend on many factors.

This opinion is confirmed by Beck, Demirgüç-Kunt and Levine (2006) in their empirical study. They conclude that banking industries with a high level of concentration are less vulnerable to banking crises, denying the opinion that concentration causes instability in the banking industry. They also note that an increase of one standard deviation in concentration, leads to one percentage point reduction in the probability of occurrence of a banking crisis.

On the other hand, Calomiris and Mason (2000) elaborate an inverse relationship between bank size and banking failure in the United States. However, De Nicoló (2000) finds a positive and significant relationship between bank size and the probability of failure for banks in the United States, Japan and several European countries.

Bojd, De Nicoló and Jalal (2009) believe that a more concentrated banking industry increases the fragility of banks. They confirm that a concentrated banking industry strengthens the market power, which allows the banks to increase the interest rate they charge from companies. Consequently, the previous situation increases the undertaken indirect credit risk. Thus, the authors find a positive relationship between the concentration and fragility of banks and the probability of a systemic crisis.

Advocates of the previous opinion may cite the fact that policymakers are more concentrated about banking failures when there are only a few banks. Namely, banking industries with high concentration are usually guided by the maxim “too large to fail” and they will be relaxed in the tendency to take higher risk and thus increase the fragility of the banking industry itself. Also, starting from the same maxim, Hughes and Mester (1998) consider that in banking industries with high levels of concentration, which implies the presence of several relatively large banks, there is a reluctance of the regulator to revoke the license of a large bank in case of problems with its insolvency.

Cetorelli and Gambera (2001) in their research tested the average impact of bank concentration on the growth of banking industries with varying levels of concentration and competition in different industries in selected African countries. They concluded that industries in which young companies are dependent on bank financing, they grow faster in countries with a more concentrated banking industry.

Finally, the research of Bikker and Groenveld (2000) on the banking industries in Europe, offered evidence of a negative relationship between the level of concentration and the level of competition.

## RESEARCH METHODOLOGY

The analysis of the level of concentration in the Macedonian banking industry was conducted using two types of calculations.

The indicators CR3 and CR5 show the share of a certain analyzed category (for example, assets) of the three, i. e. the five banks with the highest value of that category in the total amount of that analyzed category (for example, in total assets) in the banking industry. The higher the value of these indicators, the greater the level of concentration of the banking industry in the country.

The most broadly accepted measure of market concentration is the Herfindahl index (HI). The Herfindahl index is calculated according to the formula,

$$HI = \sum_{j=1}^n (S_j)^2$$

Where:

- S is the share of each bank in the total amount of analyzed category (for example, total assets, total deposits, etc.), and

The value of the index can range from 0 to 10000. It gets a value of 0 when there are many companies at the market with a relatively equal volume. The index reaches a maximum value when the market is controlled by one bank (full concentration). Therefore, a value below 1000 indicated a low concentration, in the range of 1000 to 1800 indicates a moderate concentration i. e. an acceptable level of concentration, while above 1800 indicates a high concentration.

## CONCENTRATION IN THE BANKING INDUSTRY OF THE REPUBLIC OF NORTH MACEDONIA

As of 31.12.2019, the banking industry in the Republic of North Macedonia consists of 15 banks and 2 savings houses. The total assets amount to 550 billion denars (or around 8.9 billion euro). In terms of asset size, banks are grouped into three groups (large, medium and small). Although for a long time only three banks had a dominant share, with the growth of medium-sized banks that was noticeable in the last few years, two more medium-sized banks joined the group of “big banks”. Hence, the group of large banks as of 31.12.2019 includes 5 banks that have a significant share in the more important banking categories. The share of their assets in the total assets of the banking industry (CR5) is relatively high and at the end of 2019 it was 74.7 %, in relation to household loans 77.1 % and in relation to household deposits 80.2 % (NBRNM, *Report on the risks in the banking industry of RNM in 2019*). The highest value has the CR5 indicator for the financial result, which means that the financial result of the Macedonian banking industry is almost created by the five biggest banks. This is especially evident in 2019 (104.5 %) in conditions of reduced total profit in the banking industry. These indicators undoubtedly indicate that the Macedonian banking industry belongs to the group of banking industries with relatively high concentration, i.e. several banks have a key role in the overall banking industry and the domestic economy in general.

Let's focus on the last decade, i. e. the period 2009–2019. The analysis shows there is a tendency of decreasing the concentration of the banking industry calculated according to the indicators CR3 and CR5 in relation to all categories (Charts 1 and 2). The decrease is especially pronounced in loans to non-financial entities.

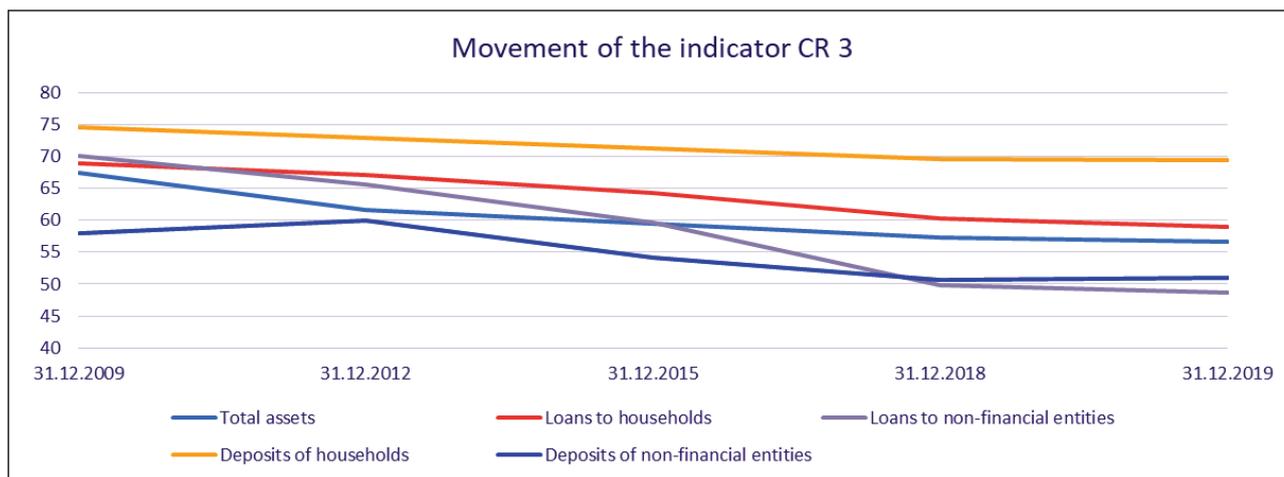


Figure 1: Movement of the indicator CR 3 in the Macedonian banking industry for the period 2009 to 2019

Source: NBRNM, Report on the risks in the banking industry of RNM in 2009, 2012, 2015, 2018 and 2019

The decrease in the CR3 indicators was followed by the growth of the next four banks. These indicators show annual decline in almost all segments of banking operations, except for the financial result, where increased the indicators for the shares of the largest three or five banks in the financial result. The indicator CR3 in the area of household lending for the period 2009 to 2019, decreased by 10 p. p. (percentage point), and for lending to non-financial entities by 20 p. p. However, they still point to a high concentration in the banking industry. The three largest banks account for almost 2/3 of total assets. This situation is unchanged since 2012.

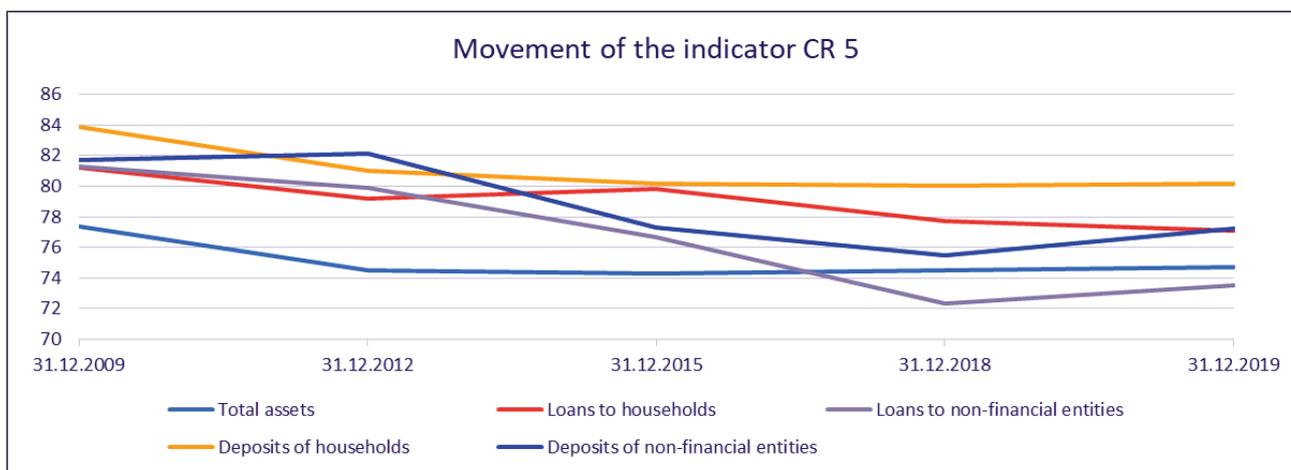


Figure 2: Movement of the indicator CR 5 in the Macedonian banking industry for the period 2009 to 2019

Source: NBRNM, Report on the risks in the banking industry of RNM in 2009, 2012, 2015, 2018 and 2019

If the indicators are analyzed in relation to the total number of banks in the domestic banking industry, the high fragmentation of the banking industry would be evident, i.e. a relatively large number of banks have a low share in the total assets of the banking industry as a whole. Consequently, they occupy only a small part of the overall banking industry. Thus, seven banks have an individual share of less than 2.5 %. The total assets of the small banks, at the end of 2019, participated with only 3.3 % in the creation of the total assets of the banking industry. In addition, their share in lending is 3.4 % and they participate with only 3.2 % in the total deposit potential of the banking industry. The ratio between the bank with the largest (22.4 %) and the bank with the lowest share in assets (0.5 %) of the industry is at a very high level. This has been an almost identical situation for the last few years (NBRNM, Report on the risks in the banking industry of RNM in 2019).

The previous findings are appropriately applicable to the analysis of the profitability by groups of banks. Namely, at the end of 2015, the realized financial result of the big banks participates with 79.2 % in the total realized profitability of the banking industry, while the small banks from 2008 constantly create losses. These indicators indicate that in the multi-year period, these banks still did not have generated enough and stable revenues, which would provide them with a continuously positive financial result and a long-term perspective for survival. Hence, it is obvious that some of the banks in this group face challenges for their future business operations. Namely, they have to choose between changing the business model, changing the operating strategy or merging with another bank.

On the other hand, the concentration in the banking industry measured by the Herfindahl index is declining slowly, but steadily. Graph 3 shows the movement of this index calculated by all categories: total assets, loans to households, loans to non-financial entities, deposits of households and deposits of non-financial entities. Thus, since 2015, the Herfindahl index showed over the years a constant decrease for all categories, meaning that concentration in the banking industry has shifted from high to the interval for acceptable or moderate values. This is a consequence of the growth of medium-sized banks, which is most pronounced in the area of lending.

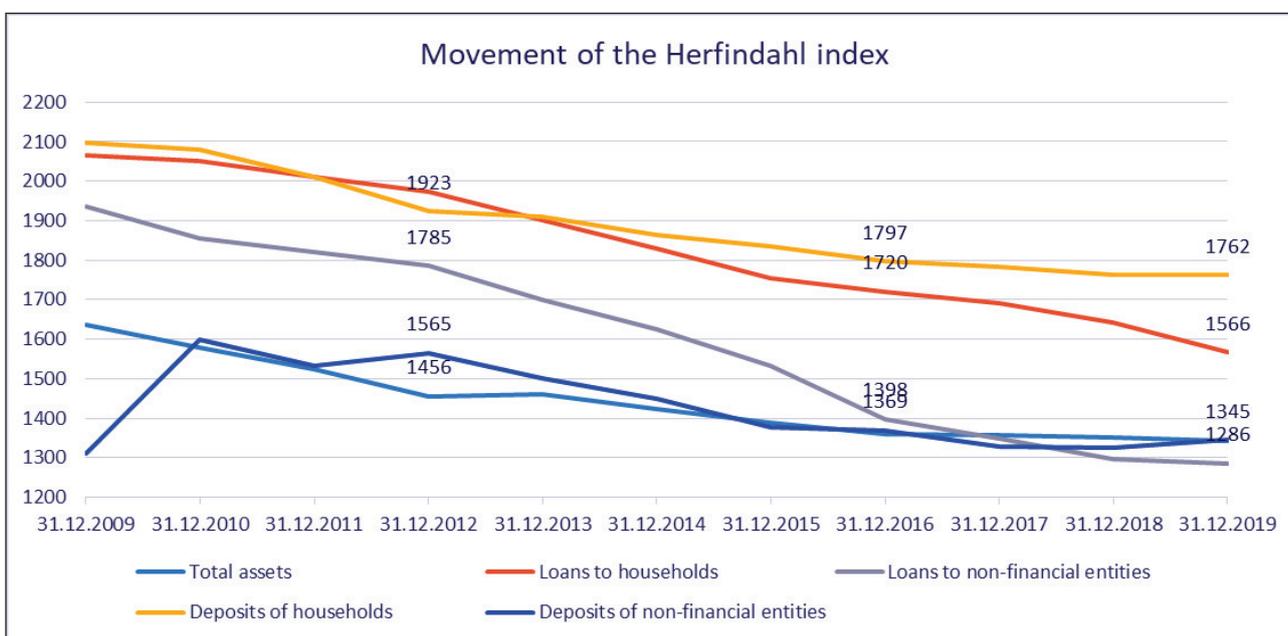


Figure 3: Movement of the Herfindahl index in Macedonian banking industry for the period from 2007 to 2019

Source: NBRNM, Reports on the risks in the banking industry of RNM from 2007 to 2019

## CONCENTRATION IN THE BANKING INDUSTRIES OF EU COUNTRIES

The analysis of the European Systemic Risks Council on the state of the banking industry in Europe (*Reports of the Advisory Scientific Committee*, 2014) shows that in parallel with the growth of the European banking industry, the level of its concentration is increasing. The share of assets of the three largest banks in the total assets of the national banking industry (according to the indicator CR 3) has increased since 2000 in all major European countries (except Italy). In the UK it shows the most significant decline. Therefore, the authors of this Report conclude that the large size of the EU banking industry and the size of the assets of the largest EU banks are two interrelated phenomena, which are in fact two sides of the same coin. It is also estimated that the number of banks in most of the analyzed countries is actually high in relation to their economy, indicating the need for further consolidation. In addition to the above, it can be cited the conclusion of Stackouras and Koutsomanoli-Filipaki (2006). Namely, in their study of competition and concentration in the new landscape of European banks for the period 1998–2002, they conclude that European banks operate in conditions of monopolistic competition.

Data on the level of concentration in EU countries measured by the Herfindahl index and the share of assets of the five largest banks in the last six years are shown in Table 1. The analysis shows a significant difference between EU countries. Generally, the banking industries are low concentrated (12 countries) and moderately concentrated (10 countries). The Herfindahl index indicates a high concentration in the banking industries of six countries (Estonia, Finland, Greece, Cyprus, Lithuania and the Netherlands).

	Herfindahl index for credit institutions (based on total assets)						Share of total assets of 5 largest credit institutions					
	2014	2015	2016	2017	2018	2019	2014	2015	2016	2017	2018	2019
Belgium	981	998	1.017	1.102	1.218	1.246	65.8	65.5	66.2	68.8	73.4	74
Bulgaria	836	919	939	906	939	992	55.0	57.6	58.0	56.5	59.7	62.5
Czech Republic	956	994	1.016	1.039	1.069	1.082	60.9	62.5	63.9	63.7	64.5	64.8
Denmark	1.190	1.180	1.224	1.123	1.069	1.170	68.1	67.8	68.3	65.7	64.5	66.2
Germany	300	273	277	250	245	277	32.1	30.6	31.4	29.7	29.1	31.2
Estonia	2.445	2.409	2.406	2.419	2.698	2.595	89.9	88.6	88.0	90.3	91.0	93
Ireland	673	672	636	658	632	665	47.6	45.9	44.3	43.5	46.1	49.7
Greece	2.195	2.254	2.332	2.307	2.304	2.382	94.1	95.2	97.3	97.0	96.8	97.4
Croatia	1.364	1.396	1.405	1.387	1.554	1.564	72.3	72.7	73.0	72.8	79.4	79.8
Spain	839	896	937	965	1.138	1.110	58.3	60.2	61.8	63.7	68.5	67.4
France	584	589	572	574	664	654	47.6	47.2	46.0	45.4	47.8	48.7
Italy	424	435	452	519	579	643	41.0	41.0	43.0	43.4	45.6	47.9
Cyprus	1.445	1.443	1.366	1.962	2.378	2.276	63.4	67.5	65.8	84.2	86.9	85.7
Latvia	1.001	1.033	1.080	1.235	1.578	1.596	63.6	64.5	66.5	73.5	80.8	83.2
Lithuania	1.818	1.939	1.938	2.189	2.278	2.289	85.7	86.8	87.1	90.1	90.9	90.4
Luxembourg	330	321	260	256	261	277	32.0	31.3	27.6	26.2	26.3	27.7
Hungary	792	763	787	802	801	920	49.3	49.4	49.8	49.6	50.0	52.7
Malta	1.648	1.620	1.602	1.599	1.518	1.548	81.5	81.3	80.3	80.9	77.5	75.1
Netherlands	2.131	2.104	2.097	2.087	2.178	2.039	85.0	84.6	84.7	83.8	84.7	84.7
Austria	412	397	358	374	370	369	36.8	35.8	34.5	36.1	36.0	36
Poland	656	670	659	645	683	688	48.3	48.6	47.7	47.5	49.5	49.8
Portugal	1.164	1.215	1.181	1.220	1.202	1.225	69.2	72.3	71.2	73.1	72.9	73.3
Romania	797	860	903	915	965	978	54.2	57.4	59.1	59.5	62.1	62.6
Slovenia	1.026	1.077	1.147	1.133	1.020	1.008	55.6	59.2	61.0	61.5	60.8	60.9
Slovakia	1.221	1.250	1.264	1.332	1.383	1.404	70.7	72.3	72.7	74.5	75.6	75.7
Finland	3.630	3.160	2.300	1.700	2.570	2.420	89.7	88.0	80.5	73.5	81.6	80.4
Sweden	880	866	845	914	785	787	58.5	57.8	56.3	58.2	54.3	54.9
United Kingdom	462	438	422	453	353	349	38.9	37.0	35.5	36.9	31.8	31.2

Table 1: Herfindahl index and indicator CR 5 for banking industries of EU countries

Source: ECB, Structural indicators for European banking industry, June 2020

The indicator CR 5 has a high range, varying from 31.2 % (in the UK) to 97.4 % (in Greece). One can see an intensification of the trend of mergers and acquisitions in the European banking industries, followed by focusing on consolidation of the banking industry, reducing the number of banks and increasing the concentration in most European countries.

## CONCLUSION

The level of concentration of the banking industry plays an important role for the financial stability of a country, and thus for its overall economic development. Having in mind the previous, the purpose of this analysis was to determine the level of concentration in the Macedonian banking industry, as well as to make a comparative analysis with the respective situation in the EU countries.

Two thirds of the total assets of the Macedonian banking industry are concentrated in three banks, and 74.5 % are concentrated in five banks. According to the Herfindahl index, the level of concentration in terms of assets of the banking industry is within a moderate, i. e. acceptable level of concentration. Hence, the conditions and movements at the aggregate level, i. e. at the level of the banking industry as a whole, they are significantly connected by the conditions and movements of the largest banks.

The comparative analysis with the level of concentration in the banking industries in EU countries points to the conclusion that the Macedonian banking industry does not deviate significantly from certain banking industries in the EU countries. There is a significant difference between EU member states in terms of the degree of concentration. However, according to the Herfindahl Index, there is a moderate concentration in 10 Member States, 12 Member States have a low concentration and only 6 Member States have a high concentration in the banking industry.

The analysis of the indicators for the level of concentration indicates the need for their further consolidation in terms of medium and long-term perspective. Of course, a number of additional structural features of the economy and the banking industry are also extremely important in terms of finding adequate conclusions in this area. That is a challenge for further research, i. e. what is the impact of the level of concentration in the banking industry on the stability of the banking and financial system, in general. It is an indisputable fact that only a healthy, stable and efficient financial system can be a solid starting point for stable and sustainable economic growth of the country as a whole.

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# GREEN BUILDING OBJECT: ENVIRONMENTAL CRITERION FOR CALCULATING THE PROPERTY TAX

Maria Gubanishcheva\*

**Abstract.** *The article considers the role of green building in the structure of innovative economic development. The necessity of state support for green building is presented. As one of the forms of incentives, it is proposed to introduce tax benefits for real estate objects built on the principle of green building. It is shown that under the conditions of the existing cadastral valuation system, these objects will have an overvalued tax base, which is incapable to give a further impetus to the innovative development of the industry. The author proposed to introduce into the existing system of real estate cadastral valuation a mechanism of environmental and economic assessment in accordance with international “green” standards.*

**Keywords:** *green building, cadastral value, taxation.*

**JEL Classifications:** *H23, H72.*

## INTRODUCTION

In the context of the innovative development of the advanced economies, more and more attention is paid to such a direction as green building, which is based on the concepts of energy and resource conservation, technical and economic efficiency (Rumyantseva, 2003; Semenov, 2007; Lukashevich et al, 2017; Akhmyarov, 2013). In our country, this term has become often found in regulatory documents, in particular, in the context of the improvement and gardening areas. However, in relation to permanent building objects, environmental factors are not considered when determining the cadastral value.

In turn, green building is inextricably linked with the green economy, the ideas of which today have generated intensified interest from scholars in various fields of science. Zakharova (2015) provides a detailed analysis of the existing definitions of the green economy, most of which have common features with the UNEP (United Nations Environment Program) definition. A green economy is an economy that provides long-term improvements in human well-being and a reducing inequalities without risking the environment. Currently, there is an active position of many states in the necessity shift towards green economy strategies, expressed at summits and world conferences. The emergence of strategies within the framework of the UNEP report (Towards a Green Economy, 2011) and the final declaration of the Rio + 20 conference can rightfully be considered the basis for the development of a green economy in Russia. Extensive discussion of this concept contributed to the development of environmental legislation in Russia.

Despite the great interest in green building, this sector of the economy is experiencing higher entry costs and a lack of funding. On the one hand, innovative building technology is highly wasteful. This leads to an increase in the entry cost of the property itself, and as a result, to an increase in the tax base. In addition, not all energy-saving technologies pay for themselves in the forecast period of business planning. On the other hand, such technologies minimize the negative impact on the environment, improving the quality of life and well-being of the population. High costs and low profitability in the short term lead to the fact that the majority of enterprises refuse to introduce cleaner production. Accordingly, the state plays great importance in this area of innovative development of the economy, since such technologies still have serious potential for the transition to a green economy.

## ENVIRONMENTAL CRITERION FOR CALCULATING THE PROPERTY TAX

The market value of the facility, built in accordance with the new environmental standards, exceeds the cost of a similar facility, excluding the eco-component. There are various reasons for this. First, during the eco-construction period, additional costs appear, for example, in the form of investments in innovations or the use of energy-saving technologies. Secondly, after the completion

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of the construction of the facility, its investment attractiveness increases, which manifests itself, for example, in the form of a decrease in operating costs by reducing the level of consumed resources? Thirdly, the real estate object receives certain marketing advantages, which are expressed in the form of a high quality structure and the uniqueness of the object itself. The foregoing reasons confirm that energy-saving technologies are considered by many as one of the factors in real estate value growth. As a result, the tax on real estate, the construction of which was carried out taking into account eco-standards, may initially be overstated. Accordingly, state support is able to stimulate green building of private investors and large construction corporations. A number of authors (Pahomova, Tomakov & Tomakov, 2017; Telichenko, 2017; He et al, 2015) also note questions about state and social support for the initiators of green building. As a result, it is necessary to provide for a special taxation mechanism for green building objects. One of the possible forms of incentives may be tax deductions for facilities built on the principle of green building.

Although it is rather complicated to create common tax criteria for green building, it is still possible to implement different approaches to calculating tax credits based on taking into account eco-indicators. One of the options may be a toolkit for accounting for innovative construction technologies based on a number of indicators (including rating) for calculating the amount of tax deduction. At the same time, a change in the methodology for deriving the cadastral value is not required, primarily in order to reflect the real value of the property. The guidelines provide for an individual calculation in case of determining the cadastral value of particularly complex real estate objects with unique characteristics, which include environmentally friendly real estate.

There are various certification systems and standards for green building objects: LEED (Leadership in Energy and Environmental Design), BREEAM (BRE Environmental Assessment Method), GOST R 54964-2012 (“Conformity assessment. Environmental requirements for real estate”), STO NOSTROY 2.35.4-2011 (“Green building”. Residential and public buildings. Rating system for assessing the sustainability of the environment), STO NOSTROY 2.35.68-2012 (“Green construction”. Residential and public buildings. Taking into account regional features in the rating system for assessing the sustainability of the environment), RUSO (Russian green standard in construction), “Green standards” (under the Ministry of Natural Resources of the Russian Federation), etc.

Taking the recommended indicators of the foregoing standards as a basis, it is possible to reduce the tax burden using a single scale of decreasing coefficients for accounting environmental criteria to the cadastral value. At the same time, the author proposes the following option for calculating the property tax of individuals and organizations using a tax deduction. In general, the calculation of the tax on property of individuals (1.1) and tax on the property of organizations (1.2) with the use of a tax deduction based on the indicator of the environmental criterion can be represented by the following formula:

$$T_i = ((CV - (CV/S) \times S_{ad}) - CV \times k_{ec}) \times R \times k_{hp} \times Sh, \quad (1.1)$$

where  $T_i$  — the property tax of individuals;

CV — cadastral value;

S — the size of the object area;

$S_{ad}$  — the size of the area deduction;

$k_{ec}$  — coefficient of accounting for ecological criterion;

R — property tax rate in the region;

$k_{hp}$  — coefficient of the holding period;

Sh — the size of the share in the right.

$$T_{org} = (CV - CV \times k_{ec}) \times R \times k_{hp} \quad (1.2),$$

where  $T_{org}$  — the tax on property of organizations;

CV — cadastral value;

$k_{ec}$  — coefficient of accounting for ecological criterion;

R — property tax rate in the region;

$k_{hp}$  — coefficient of the holding period.

An important step is to determine the value of coefficients for accounting environmental criteria. This predetermines further research in this area. However, after applying the factor of accounting for all environmental criteria, the tax burden can be significantly reduced.

## CONCLUSIONS

Budgetary institutions are empowered not only to define the cadastral value, but also to collect and process the information necessary to determine it. Among them the procedure for the submission by the rightholder of a declaration on the characteristics of the object is provided. Through the declaration, it will be possible to provide information on whether the taxable object has certain environmental criteria. The owner of the property has the right to submit documents confirming the presence of at least one of the environmental criteria. These can be projects, construction documents, commissioning permits, building permits, estimates, etc. Based on the data obtained, it is possible to apply a system for evaluating all indicators that will serve as the basis for a tax benefit.

It is obvious that in the course of the cadastral valuation of eco-objects, each pricing factor will need to be considered on an individual basis. On the one hand, it complicates the already laborious work. But on the other hand, it allows clearly analyzing the criteria. Therefore, it is necessary to clarify the methodology for determining the cadastral value in order to expand the list of characteristics used in the cadastral valuation.

Due to the collection and accounting of additional pricing factors, it will be possible to conduct an inventory of “green” real estate and create a register by region. This will allow tracking the stages from creation to commissioning of the facility and pay attention to economic regulation.

Budgetary institutions will need to be empowered to transfer eco-indicators of real estate objects to the tax authorities. Thus, budgetary institutions will provide the real value of real estate, and the tax authorities, having at their disposal data on environmental criteria, will calculate the tax taking into account the principle of equity.

The use of tools based on environmental criteria for calculating the size of the tax will allow for diversification, since green building is often expensive and often lacks funding. This will contribute to the consolidation of “green” trends in the construction and real estate market, as there is a certain interest in eco-development. For the state, the standards of green building can act as an indirect instrument for the introduction of innovative technologies and support for the implementation of environmental legislation.

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# MODERN UNIVERSITY MODELS: GLOBAL EXPERIENCE AND NATIONAL PRACTICES

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**Abstract.** *In the post-industrial era, universities that claim to be social leaders reject the conservative role of the knowledge translators. Trend of university development differs from country to country, given it is formed under the influence of several factors: unique long-standing tradition of higher education, the socio-economic situation; the susceptibility of university top-management and technical elite to the new trends. The subject of this paper is the most common modern concepts of university development and current results of their practical implementation. A long-range goal of the research is to formulate methodological recommendations on how to improve efficiency of domestic Russian universities using some of the models. Among them special mention should go to the classical model of a research university, which has shown its value at American universities and thus was partially adopted as a basic concept in Russian educational policy. Another model — an entrepreneurial university — has become especially popular since the late 1990s, when universities were expected to actively nurture national innovation systems, which are crucial for the knowledge-based economy. The paper displays the further development of models (civic university, third mission, triple helix, quadruple helix, etc.). It is examined how specific universities implement these models in practice. Particular internal selection took place: large universities, claiming to be the center of regional activity, adapted the triad of “education, research, business”. Apparently that either way the idea of entrepreneurship (academic, commercial) has become an integral part of all university models. It is concluded that with globalization and increased competition among universities, the process of differentiation unfolds depending on the university’s ability to find resources and to implement the beneficial model.*

**Keywords:** *entrepreneurial university, civic university, third mission, triple helix, university model.*

**JEL Classifications:** *I21, I23, N30.*

The institution of higher education is conservative by its nature and always lags behind in responding to the needs of society, since it embraces only those innovations that are time-proved. National systems of higher education, traditions of interaction with the State, the degree of self-regulation — all these features also affect the adoption rate of innovations. In the past few decades, the role of universities has undergone dramatic changes, as the needs of the post-industrial society have revealed new requirements for the functionality of higher education. Whereas during the industrial age it was enough to convey knowledge and to educate personnel, nowadays knowledge has turned into an object of commercialization and can be fully integrated into the market of the knowledge based economy. This leads to a restructuring of the general concepts and models of higher education, which are the subject of this article.

First, it is worth mentioning the model of a classical (research) university (Harvard, Yale, Berlin University, University of Cambridge, etc.), which is still in demand, since it is aimed at a high-quality educational process combined with fundamental scientific activity. Such universities are focused on general liberal values, while pragmatic goals, on the contrary, are not at the forefront of their strategies. However, only a few universities can afford to implement this model in practice due to its resource intensity. In Russia, in the context of a project of national research universities, which is based on classical universities, the success of such universities is determined by many criteria: the volume of R&D; the number of master’s and PhD thesis; the range of available educational programs; the number of full-time students and postgraduates; the influence of the university on the higher education system, development of science and economy in the country; international recognition of the results of the university’s activities.

Another more modest model of a regional university, which developed in Russia in the 1990s, is designed to meet the needs of the regions in the field of science, education, service industry and production. The university of that kind plays the role of a systemically important factor for the local community, when the expansion of the social role becomes important, allowing the university to be

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characterized as “socially oriented” (civic) or “involved in the life of society” (engaged) (Goddard, 2018). The results of scientific and educational activities of regional universities are assessed not in terms of volume and quality as for classical universities, but rather with respect to its importance for the community (Unger & Polt, 2017), since the university must prove its usefulness here and now.

In the context of the restructuring of the global economy, the model of the entrepreneurial university (EU) has come to the front since the mid-1990s: its goal is making money by offering entrepreneurship programs and educating future businessmen; acting as an entrepreneurial institution and setting up business incubators, involving students and alumni (Clark, 1998).

The content of the EU is gradually expanding. It is possible to single out the signs and tasks that should be solved by a university, claiming this status:

1. The university is ready to change the model of its organization and management, transitioning from public funding to diversified sources obtained on the basis of an independent search for additional resources, which will be further directed to the development of the university itself.

2. The university strives to commercialize the knowledge creation and transmission, thereby it manages to attract additional financial resources from stakeholder institutions. Therefore, it is necessary to constantly update research methods while engaging in academic entrepreneurship.

3. Innovative forms and methods of teaching are used to attract clients (applicants). It is necessary to constantly develop advanced teaching methods and renew the content of the programs.

4. The density of interaction with potential employers, companies where university R&D developments are being introduced or where graduates are hired, is increasing. In this regard alumni communities are an important factor in the success of a university.

5. The university deliberately rebuilds its structure, especially in the management sphere — new structural units appear and establish connections with the external environment.

All of the tasks above are resource demanding, therefore, in the contest of reduced public funding universities need to change their corporate culture and learn to enter the open market. In other words, an entrepreneurial university should systematically make efforts to overcome limitations in the areas of knowledge creation, teaching, and transformation of knowledge into practice by initiating new types of activities, transforming the internal environment and modifying interaction with the external environment (Konstantinov & Filonovich, 2007).

The variety of specific factors predetermines the different characteristics of “entrepreneurial universities”, which are classified according to their structural characteristics (mission, organizational and management models, personnel policy, financial resources, infrastructure, location and environment). There are four types of universities: research-preneurial, techni-preneurial, inno-preneurial, commerce-preneurial, thus, it is impossible to formulate a single and the best strategy for every entrepreneurial university, even within one state (Bronstein & Reihlen, 2014).

The combination of research and entrepreneurial university models based on Russian experience resulted in the model of a project-oriented university (the result of the analysis of organizational innovations at Lobachevsky State University of Nizhny Novgorod): a “project” is a purposeful and time-limited activity that has a certain “risky” character, like any innovative practice. The traditional activity of the university in the implementation of educational programs is complemented by a product-design approach aimed at fulfilling risk-laden, one-time and “small-scale” orders of the educational and scientific services market (Grudzinsky, 2004).

A pragmatic offshoot of the EU model may be considered the corporate university model, which main goal is to train personnel for a specific company. In this case, the university platform connects the activities of the company’s specialists and modules of external educational sources. In the West, corporate training has been developing since the 1980s, this form of training allowed transnational companies to successfully compete for dominance in national markets. Coca-Cola, Boeing, Walt Disney, Motorola, Procter & Gamble, General Electric, etc. have their own corporate universities (Baporikar, 2015). In Russia, corporate universities emerged in the 1990s at large enterprises. Today they operate at such companies as LUKOIL, Rostelecom, Severstal, KB Sukhoi, and others (Pakhomova, 2006).

The entrepreneurial university model is increasingly frequently associated with two other conceptual models — the “third mission” of universities and the “triple helix”, which were developed in the 2000s. We may assume that the development of the EU was due to the allocation of a “third mission of universities” in addition to traditional education and R&D. The implementation of the “third mission” is impossible without creating mechanisms for launching and stimulating innovative processes, where the EU is a necessary element. In addition, entrepreneurship is not only the creation of material goods, but also creativity associated with the need to adapt to the challenges of society, therefore in theory EU not only provides innovative regional development, but also a positive social effect at the local and regional levels.

The second key player, together with universities, are venture capital companies and funds that provide financial support to projects and startups. As a result, an effective system of interaction between the sphere of inventions and discoveries with the sphere of business is formed, which ensures an indraft of promising technological ideas into the economy and its rapid implementation. However, the Russian legal framework hardly meets the objectives of the “third mission”: in accordance with the Education act, an educational organization has the legal status of a non-profit organization, which is not allowed to engage in entrepreneurial activity, but only may carry out income-generating activities. Intellectual property legislation, as well as mechanisms for its commercialization, is poorly developed.

The prerequisite for the triple helix model (Etzkowitz & Leydesdorff, 2000) was the idea that along with universities that transfer knowledge and technology from university labs to production, government authorities and representatives of the business environment are also important elements of the innovation system. The conceptual pier of this concept is the idea of the intersection of two double spirals: “universities — enterprises” and “state — universities”, which is synthesized in the innovative “triple helix” “universities — state — enterprises”.

The theoretical model of the “triple helix” is highly dynamic, since the choice of trajectories for innovation activity depends mainly on the subject of action, i. e. the link that sets in motion other paired ligaments. Each of the three mentioned parts of the spiral can act as such a link, creating a dominant element to resolve urgent problems in each specific situation. The state is often the driving force behind the development of both education and business. Russia is particularly characterized by an administrative-command model, in which universities play a subordinate role; it is opposed to the market (Western) model, where business, education and the state operate separately from each other. Obviously, there are mixed models at the junction of two systems (Etzkowitz, 2011).

In the model of the “triple innovative spiral”, as well as in the “third mission”, the EU plays a systemically important role, since it finds itself at the junction of these sides of interaction. Implementation of the triple helix system requires a restructuring of the university management and the creation of an internal infrastructure aimed at supporting academic entrepreneurship. Flagship universities established in the Russian Federation in 2016–2017 in certain sense are prototypes of such EUs, since the goal was to influence regional development through the modernization of educational, research and innovation activities, including the development of the innovation system of universities.

Global processes are localized, transformed in different behavioral, socio-economic, technological and cultural contexts of the regions. Therefore, any universal concept cannot be applied in an abstract form in any of the actively developing countries (Pluzhenskaya & Koryakovtseva, 2019). In our opinion, the key in developing operating practical strategies is to determine the agent who will take on the tasks of integrating all the links of the “spirals”.

An extended model of the “triple helix” is the “quadruple helix” model, where an active civil society becomes a special link of interaction (Höglund & Linton, 2018). In this approach, universities are also considered not just as agents, but as drivers of technological and socio-economic development of regions. Modern universities that claim to be leaders in regional development are faced with a variety of challenges that require the implementation of new models and strategies.

The heterogeneity of the educational level and motivation of applicants requires different approaches. First off, universities are forced to adjust and balance the training level of students; secondly, a semblance of a personalized approach is created when students, together with teachers plan their and pursue learning strategy based on their needs and capabilities. (Personalization of learning should not be confused with individualization - in the latter case, the contact time of the teacher-student increases, when in the first case, the emphasis is placed on the student consciously taking responsibility for his or her studying, while university helps him build a personal trajectory).

Universities 1.0 or universities that create and transmit knowledge can no longer claim leadership in the region, let alone the country as a whole. Universities 2.0 gain more weight, as the institutions that are involved in R&D: this process is inevitable amidst building of a “knowledge-based society”. However, the historically established system of R&D in Russia had not implied that universities would become centers of academic or applied scientific activity — these functions were traditionally assigned to the Academy of Sciences and sectoral research institutes, while in the West it were large universities that became centers of attraction for R&D. Therefore, not all regional universities have successfully reorganized and reached the stage of University 2.0.

With the development of market relations, the need for the building up of business culture and professional thinking increases, since regional universities in one way or another are aimed at enterprises in the region and employers for their future graduates. An adequate alteration of the mentality of the management and staff of universities is required.

Even if the university has a research base and high-tech product, the demand from local businesses is usually low, because the product may not be competitive enough in terms of its innovativeness. Universities are not often perceived as structures capable of meeting the needs of industry and companies in scientific research (Borisoglebskaya & Mikhailov, 2015). Dealing with reduced public funding, universities are forced to look for other sources and learn to earn money in order to ensure their development.

Regional universities in Russia which aspire to implement the entrepreneurial university model in practice face a number of negative factors:

1. The tradition is preserved where the state determines the competence and development prospects of universities: the bureaucratic apparatus will always lag behind world trends in the field of higher education while creating future strategies. It can be assumed that in Russia there are rather not “triple”, but “double spirals”: the state and fundamental science, science and business, etc. Meanwhile, it is the activity of a third party in binary relations that is the basis for consensus within the framework of triple cooperation.

2. The volatile state scientific and educational policy does not facilitate stability: the reformatting of the university network in order to reduce ineffective universities and increase the scientific and educational potential; orientation of the educational policy of the Russian Federation towards reducing the proportion of graduates with higher education and increasing the proportion of secondary specialized education (Shibanova, 2015).

3. In order to turn the internal structure of universities into an EU it is required to introduce “new managerialism” (Prokhorov, 2013): organizational forms and management practices that are common in the field of private entrepreneurship. However, it will be necessary to overcome the inevitable contradictions between the representatives of the university management and the teaching and academic staff, since the dilemma “effective management — academic freedom” arises.

4. Rigid federal educational standards for many universities create restrictions in the field of educational innovation.

5. The high teaching load aggravates the profound integration of the research and teaching community of universities into advanced forms of innovation.

6. The system of incentives and rewards in universities, deeply related to the entire higher education system, is not always reasonable. Meanwhile, the higher is the interest of the researcher and the higher is his share for participation in license fees, the more technologies the university creates (Schankerman, 2015).

It should be admitted that sooner or later the leading universities not only on a national scale, but also at the regional level will have to adapt to the new models offered by the leaders of university development, but a specific acceptable model is determined by a combination of factors. The question is which models should be preferred in order, on the one hand, not to stay behind global transformations, and, on the other hand, not to implement the project that is obviously doomed to failure, since universal models require a balanced and honest assessment of the real capabilities of domestic scientific and educational system.

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# THE IMPLICATION OF THE CONSUMER PROTECTION ACT FOR RETAILERS IN SOUTH AFRICA

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**Abstract.** *The injustice of economic marginalisation in the treatment of consumers by businesses that perpetuate the legacies of apartheid have been condemned in serious terms by the South African government through the implementation of the Consumer Protection Act (CPA) 68 of 2008 (South Africa 2008). While aiming to prevent businesses from gaining unfair competitive advantage over consumers, this legislation also promotes fairness, openness and good business practices. Its focus on combating improper marketing aims at empowering consumers and promoting responsible and ethical behaviour to redress previous discrimination of consumers by the apartheid system. The legislation annuls promotional strategies that undermined the rights of the consumers. It regulates the timing for direct marketing and addresses the question of emailing potential customers without their prior consent. Restrictions placed on promotional strategies provide some relief to consumers prescribing what is allowed, and how. This paper aims to evaluate the ethical implications of the CPA for consumers and retail businesses in Durban, South Africa. The empirical study conducted explored the implications of the implementation of the CPA on the promotional strategies of retail businesses in Durban and the consequent measures that they are adopting to address the restrictions placed in terms of the CPA. Adopting qualitative methodologies, the study collected data through eighteen structured interviews conducted with marketing managers and business owners. The study's main finding was that in trying to be compliant with the CPA, businesses in the sample are using very costly and labour-intensive measures. The study also highlights new trends in terms of promotions conducted by retail businesses in Durban.*

**Keywords:** *compliance, ethics, marketing, promotions, the consumer protection act.*

## INTRODUCTION AND BACKGROUND

In South Africa, consumer rights and supplier obligations are consolidated into a single legislation, The Consumer Protection Act (CPA) (Consumer Protection Act 68 of 2008). The CPA is applicable to the marketing, promotion and distribution of any type of product or service. This includes all role-players in the supply chain, who are now liable for ensuring that excellent standards of goods and services are provided. The CPA impacts on promotional strategies and the marketing mix in general of retail businesses in South Africa (Reddy, Mohamed and Naidoo 2017: 43). The implementation of the CPA legislation adds to the increasing focus on marketing ethics. It resonates a Rawlsian principle of justice as an ethical ground for regulating business promotions. This put businesses under pressure to act ethically and socially responsibly as those businesses with a good reputation have a competitive advantage over their rivals (Al Muala and Al Qurneh 2012: 15). Customers support ethical brands that recognise environmental, social and economic responsibility and are committed to “doing the right thing”. This is a value-add to both firms and customers and hence creates long-term customer relationships and loyalty (Shahhosseini and Ardahaey 2011: 233).

## LITERATURE REVIEW

Prior to 1994, there were differences in quality and access to products and services delivered to different segments of customers by retail business (Mupangavanhu 2015: 121). Chain stores were offering inferior quality goods to Black customers at the same price as that paid by other races for superior quality goods. Banks also restricted access to home loans for Blacks (Woker 2019: 97–115). Following the transition to democracy, consumers of all races were not prepared to settle for sub-standard goods and services. The CPA was introduced as a legislation that signaled a decisive legal approach to addressing the pervading ethical problem that permeated the apartheid system in South Africa.

A key purpose of the CPA is to “fulfil the rights of historically disadvantaged persons and to promote their full participation as consumers” (Reddy 2018: 569–586). A resonance of the Rawlsian ethical principle of justice. These six rights are applicable to the provisions of the CPA directly affect the promotional efforts of retail businesses viz. (Republic of South Africa 2009: 25–26): “Right to

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equality in the consumer market and protection against discriminatory marketing practices” (Section 8); “Right to privacy” (Section 12); “Right to choose” (Sections 13, 16 & 17); “Right to disclosure of information” (Section 22); “Right to fair and responsible marketing” (Section 34); and “Right to fair and honest dealing” (Section 47).

The introduction of the CPA has shifted the consumer contract approach from freedom-orientated to a fairness-orientated approach (Tait and Newman 2014: 642). In the past, business owners could purchase and utilize databases, email lists or Short Message Systems (SMS) to contact potential customers at any time to promote their products and services. Consumers were (and still are) able to receive text messages and emails even on weekends and holidays (Venkatesh (2015: 1177). The CPA now directly impacts on the forms of promotional strategies that retailers may adopt (Gangur and Plevný 2014: 579). Marketing campaigns in the form of bulk SMSs and emails, though cost-effective, are no longer permissible unless the recipient has given prior written consent to receiving such forms of advertising (Nieuwenhuizen 2012: 51). Marketing managers are now faced with new challenges of a shrinking database once the recipient chooses to “opt out” or “unsubscribe” (Conlon 2013: 1).

The restrictions that the CPA places on promotions limits the freedom and fervency of retailers in their marketing (Erasmus (2010: 19). The soaring costs of multi-media advertising further restricts the promotional activities of businesses. Section 11 of the CPA empowers the consumer with the right against unwanted marketing. Businesses are now forced to include processes and procedures to document customer preferences with regard to what they are willing to accept and when — without the customer incurring any further costs (KPMG 2010: 4). Currently, marketers using social network sites, such as Facebook and Twitter, are obligated to put measures in place to ensure that they are compliant with the CPA. Research carried out by the Digital Media and Marketing Association (DMMA) and Echo Consultancy provide valuable statistics on Internet usage in South Africa. In 2017, it was estimated that there were almost 29.2 million Internet users in South Africa; this represented almost 54 % of the population (Setti and Wanto 2019: 111). The use of the Internet for promotion of goods or services by businesses is increasing but the CPA provides a regulatory framework for such practices (Slabbert, Maister, Botes and Pepper 2011: 174). The interest of this paper is on the impact of the implications that the CPA is having on the promotional activities of retail businesses in Durban, South Africa.

## **THE ETHICAL PRINCIPLE OF JUSTICE**

Rawls (1971) theory of justice is often perceived as an ethical theory that occupies a middle ground between the utilitarian ethics which examines morality on the basis of ends that benefits the majority on the one hand and the Kantian ethics that abhors utility and focuses on duty and respect for persons on the other. Rawls proposed the notion of justice which on the one hand should make the majority happy because of its focus on fairness, and on the other hand will respect individual autonomy and impose the duty to do the right thing upon individuals through the rule of law. These laws should protect the basic liberties of individuals from oppression (Davies 2018). These principles are captured in the CPA in its attempt to protect vulnerable customers from the powerful forces of business that can abuse them if not called to order. The South African government applied this ethical/legal principle not just to redress past injustices suffered certain cadres of retail customers in the apartheid past, but also to ensure that unnecessary powers of retail business which can be abused against their customers during advertisement and promotional activities are legally put in check.

## **AIMS OF THE STUDY**

This study aims to evaluate the influence of the CPA on retail businesses, with a focus on promotional strategies and to ascertain which provisions of the CPA are having a major impact on the promotional strategies of retail businesses in Durban, South Africa. This aim is achieved by answering the following research questions:

- What promotional strategies are currently used and preferred by retail businesses in Durban?

- Which promotional strategies, currently being used, are the most cost-effective?
- Which provisions of the CPA are having an impact on the promotional efforts of retail businesses in Durban and how?

## RESEARCH METHODOLOGY

This study was conducted in Durban, South Africa with ethical clearance granted by the Durban University of Technology’s Faculty Research Ethics Committee (**Ethics certificate: 13/13 FREC**). Permission to interview the participants was granted by the CEO of the Durban Chamber of Commerce (DCC). The target population was marketing managers or business owners directly involved with the formulation of all promotional strategies for their businesses. Participants were interviewed using an interview schedule at their work premises at a time convenient to them. Participants signed an informed consent before taking part in the study.

The criteria for inclusion in the study was retail businesses listed with the Durban Chamber of Commerce and Industry and classified as being Small, Medium, and Micro-Sized Enterprises (SMMEs) (with an annual turnover of less than R35 million and above R250 000). The marketing managers or business owners responsible for marketing decisions of a retail entity in Durban were purposively chosen for the study (Grossoehme 2014: 117). Ten Initial respondents were interviewed using structured interview questions. Eight more interviewees were recommended by the initial group of interviewees. Although data saturation was reached after the ninth structured interview, a total of 18 structured interviews were carried out in order to obtain a rich source of data. Interview questions were aligned to business’ marketing strategies and focused on whether the CPA had any significant impact on the way they were now marketing their products. The relevant sections of the CPA guided the formulation of the interview questions. Responses were typed on a laptop on MS Word. The data was analysed using the NVIVO programme (Version 11). A comprehensive thematic analysis was applied to the results from the interviews. Labels were reduced to units of text which were later clustered and converted into classifications.

## RESULTS

This section addresses the objectives of the paper, which included: firstly, to identify the promotional strategies that are currently preferred by retail businesses in Durban. Secondly, to determine whether the promotional strategies currently being used, are the most cost-effective and thirdly, to assess how specific provisions of the CPA are having an impact on the promotional efforts of retail businesses in Durban.

### Preferred promotional strategies

Figure 1 below shows the preferred promotional strategies used by retailers.

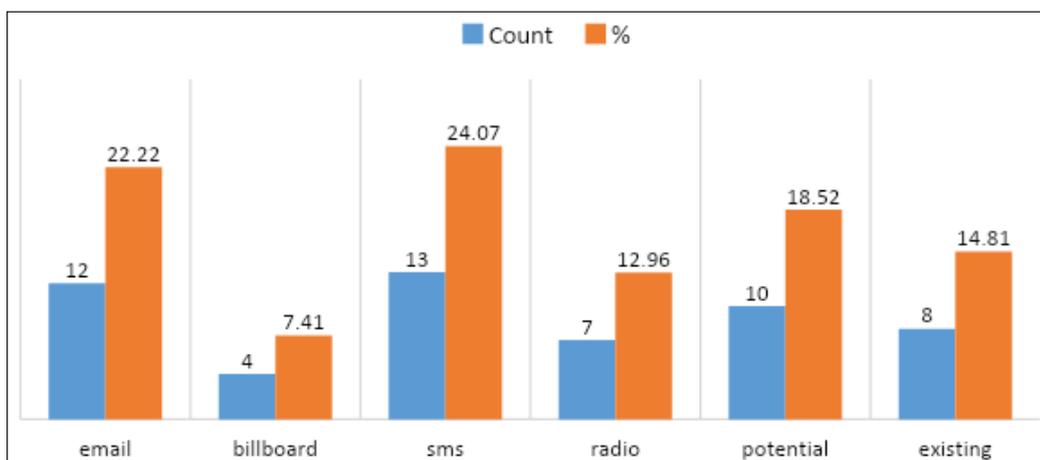


Figure 1: Preferred promotional strategies

According to figure 1, above, thirteen participants (24.07 %) used SMS while twelve participants (22 %) used emails. This is important to this study because it shows that in spite of the limitations placed by the CPA, businesses are still using SMS and emails to connect with their customers to promote their products. Ten participants (18.52 %) used telesales to potential customers; 8 participants (14.81 %) used telesales regularly to existing customers. Seven participants (12.96 %) made use of radio advertising. Four participants (7.41 %) used billboard advertising; and 2 participants (3.5 %) employed marketing representatives to call on their customers. The results show that emails and SMS's promotions are preferred by the businesses in the sample. This assets the views of Durant (2014: 1), that the users of emails grow exponentially each year. Tan, Chong and Lin (2013) also agree that emails and SMS are also invaluable as a means of providing customer relationship services.

**Reason (s) why the promotional strategies are preferred**

The following themes were prominent reasons why respondents chose specific promotional methods: to create more brand awareness and brand value; to target a larger audience quickly; ease of marketing reach and market segmentation, using an interactive platform; cost effectiveness; better return on investment; to take samples to the customers. Buyers are particular about the specs they order; branding visibility in high traffic areas; and Personal contact with customers helps with customer retention. The results show that these businesses preferred promotional tools based on cost, and rapid reach to a larger target audience. Jacobsson, Granroth and Dumont (2014: 16) posit that email marketing delivers the highest return on investment. They argue that the low cost of email advertising makes it accessible to most companies, since some businesses do not have the capital required to invest in large advertising campaigns or other cost intensive initiatives.

**The most cost effective promotional strategy**

Figure 2 below indicates the cost effective promotion strategies.

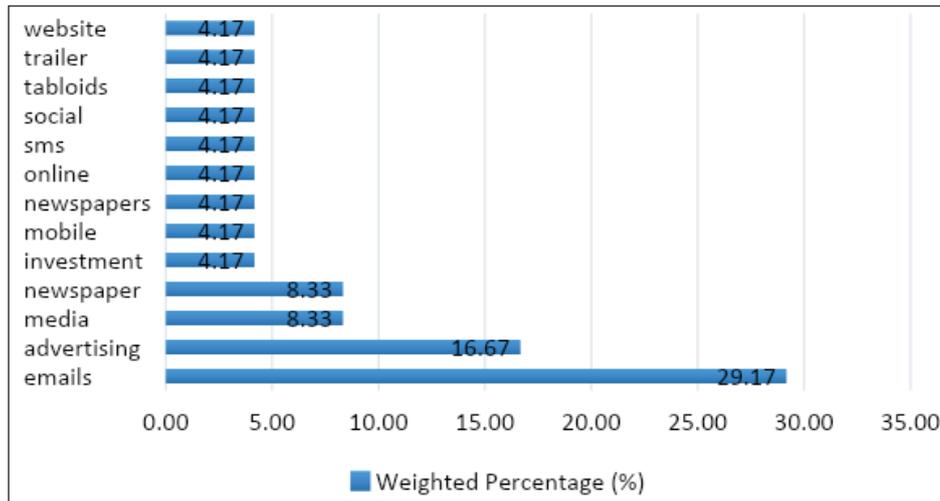


Figure 2: Cost effective promotion strategies

There were 38 % of the participants that indicated that email campaigns are the most cost effective in their businesses; 16.67 % of the participants indicated that newspaper advertising was the most cost effective in their businesses; 4.17 % of the participants stated that website advertising, tabloid advertising, SMS and newspaper respectively, were the most cost effective; and 16.67 % indicated that radio advertising was the most cost effective.

The results show that a higher percentage of participants indicated that email campaigns are the most cost effective. This is in agreement with the views expressed by Jacobsson, Granroth and Dumont (2014: 46) that email marketing delivers the highest return on investment and that a great number of businesses do not have the capital required in order to invest in large advertising campaigns or other cost intensive initiatives, however, the low cost of email makes it accessible to most companies.

Email marketing is arguably the most powerful tool for building any business (Jacobsson, Granroth and Dumont 2014). This is also in accordance with the views of Groves (2009).

Figure 3 below indicates the Wordmap which shows the cost effective promotional strategies.



Figure 3: Wordmap — Cost effective promotional strategies

The Wordmap above, in Figure 3 shows the responses from the participants and indicates that emails and newspaper advertising are deemed to be the most cost effective.

#### **Reasons for using the preferred promotional strategy**

The following themes emerged from the analysis on the reasons why the respondents use their preferred method of promotional strategy: Cost effectiveness; using minimal manpower; obtaining bigger discounts from service providers; graphics/images stimulate purchasing. The results show that the cost effectiveness is crucial for the participants. Some promotional methods are very labour intensive; therefore businesses prefer a promotional method that uses minimal manpower. Some participants indicated that they benefited from discounts if they advertised or made use of bulk email campaigns for longer periods. Some participants found that the visual appeal was important to entice customers to purchase their product. They therefore had their own graphics designing team. Shankar, Inman, Mantrala, Kelley and Rizley (2011), also emphasises that retailers are now using cheaper forms of promotions.

#### **Marketing strategies should not be discriminatory, therefore suppliers may not supply goods/ services to certain groups of consumers (Section 8)**

In terms of discrimination and supplying certain products or services to certain groups of consumers, the following responses were received: Twelve out of eighteen participants stated that there was no significant impact of Section 8 to their businesses in terms of discrimination to customers. These participants stated that they were already supplying good quality products at reduced rates to the rural customers. They understood the needs of the customers and customised products according to the customers' requirements if necessary. Only one participant stated that their marketing strategies were targeted differently for different groups. Different products are marketed in different areas and different promotional strategies are used in different areas. The high end products cannot be advertised in rural areas as this would be a wasted marketing spend. Five participants also stated that there was no impact to their business. The results show that Section 8 (which stipulates that suppliers may not supply goods/ services to certain groups of consumers) had **no significant impact** to the participants' businesses.

### **The privacy of customers must be respected**

Section 11 of the Act gives the consumer the right to restrict unwanted marketing by refusing to accept such marketing. Companies are not allowed to continue any unsolicited direct marketing of goods and services once a consumer has opted out. The participants offered the following responses with regards to how this impacts on their promotional efforts: Eight participants stated that they were being affected by the fact that customers opt out of their Email or SMS campaigns. Once the customers requested to be unsubscribed, the participants had no choice but to respect this and they had to continually strive to grow the database to ensure customers receive their communication and promotions. Two participants noted that their representatives call on the business owners directly to discuss their requirements and that this does not impact on their businesses at all. Eight participants noted that they only contacted opt-in customers. This has proved to be labour intensive initially, however these opt-in customers remained on the database and genuinely wanted to receive their promotions and specials. The results show that Section 11 (the privacy of customers must be respected) had **some impact** to the businesses in the sample.

### **Section 11 gives customers the right to opt out of email campaigns and future emails**

This section of the qualitative analysis discusses the analysis of the various responses to the right to opt out of email campaigns. Eight Participants indicated that Section 11 of the CPA had no impact on their businesses. Seven Participants indicated that Section 11 of the CPA had some impact to their business and Three Participants indicated that Section 11 of the CPA had a major impact to their business.

### **The right to opt out of email campaigns and future emails- (no impact to the business)**

Participants responded as follows regarding how Section 11 has affected their promotional campaigns, and with regards to the maintenance of the organisation's databases. Eight Participants indicated that there was no impact of Section 11 of the CPA to their businesses. Some of the reasons provided were as follows:

- “We don't have clients opting out. Our clients require our services and we send valuable advertorials to our clients, which they appreciate”;
- “The website has to be used to attract new customers. Customers have to be invited to register for the newsletter. Once they register then we have their email address and we grow our database in this way”;
- “We focus more on existing customers (cross — selling)”;
- “We have stopped email marketing because it proved not useful to our market”;
- “We have regular competitions in our retail outlets, to stimulate new leads and increase our database”.

### **The right to opt out of email campaigns and future emails- (Some impact to the business)**

Seven Participants indicated that Section 11 of the CPA had some impact on their business. Some of the responses were as follows:

- “It did affect marketing negatively, especially to new potential customers”;
- “We have decided not to email our customers and to advertise in newspapers instead. We are able to target customers that we have not emailed in the past. We use our database to merely inform customers about trading times and other miscellaneous information”.

### **The right to opt out of email campaigns and future emails- (major impact to the business)**

Three Participants indicated that Section 11 of the CPA had a major impact on their business. Some of the responses were as follows:

- “We have lost thousands of customers' details as they have unsubscribed. We did not have the capacity to manage the opt-out facility, therefore we have outsourced this function”.

- “This has had a huge impact on our marketing. We get a lot of leads from our competitions, but customers also unsubscribe often and that puts an end to our communication with the customer. We have no control over this. We have therefore had to resort to cold canvassing door to door. Not only is this dangerous for our female staff but to a certain extent it is very unprofessional. But we have no choice. Either that or face the risk of closing our business down. We service the community and depend on the individuals in this vicinity to support our business”.

The results show that Section 11 of the CPA (which gives customers the right to opt out of email campaigns and future emails) had **some impact** on the businesses in the sample. From the responses above, once the customer opts-out they lose contact with the customer and it is very difficult to acquire new leads to increase the emailing database. This is in agreement of the views of Waxer (2014: 1) who identified that more and more marketers are discovering that they need to connect email campaigns with complementary channels to create a powerful ecosystem for reaching more customers.

### **The customer has the right to disclosure of information**

Section twenty-two demands that contracts and advertising material must be in plain and understandable language. Businesses are also to inform and educate the disadvantaged customers. Participants were asked whether their organisation changed contracts, labelling or made any other changes to marketing material to be compliant with this section of the Act.

Majority of the participants (fifteen) indicated that they used simple language and do not use fine print and clauses; they ensured that labels are always clear and legible. The balance of the participants (three) indicated that they had changed the wording of their contracts to meet the CPA compliance requirements. The results show that Section 22 of the Act has **had an impact** on the businesses in the sample. They have changed their contracts and labelling to ensure that everything related to the sale is in clear, understandable language. Erasmus (2011: 2) states that Section 22 of the Act does not insist that the information is in the official language, however the information must be in plain language that is appropriate to the class of persons that the goods or services are aimed at.

### **The customer has the right to fair and honest marketing**

Section 34 of the CPA focusses on promotional offers that gives the customer the right to fair and honest marketing. This entails clearly stating the details about the prize, reward, gift, free goods or service, price reduction or concession, enhancement of quantity or quality of goods or services or other discounted items being offered. Participants were asked to explain if this has had any effect on their organisation’s marketing and logistics:

All participants stated that Section 34 of the CPA has had **no impact** on the organisation’s marketing and logistics. Nevertheless, some of the respondents noted that they indemnified themselves in the following ways:

- “We don’t use ambiguous terms and ensure that discounts and specials are clearly explained. Validity periods have to be included in all our advertisements”;
- “We have a compliance pack that each customer signs off following a successful financial planning transaction. Clients also sign a declaration document to confirm that they understand the process flow and this also indemnifies us. They also sign a record of advice to ensure they understand the advice given to them”;
- “Five A3 Posters have been put up in our credit/ returns department –in large print so that customers are aware of their rights in terms of the CPA. The numbers for the Ombud for consumer protection are clearly displayed”;
- “We print T’s & C’s on our competition flyers. We have had to become more clear and specific with regards to a prize or giveaway;
- “We have invested in an updated website. Customers can get the specifications of the products, availability etc. from the website.

The responses above indicate that although businesses comply with fair and honest marketing, they also need to put measures in place so that they indemnify themselves against unintentional misleading marketing, and the risk of customers reporting them for non-compliance. This finding is in agreement with the views of Reddy and Rampersad (2012: 7410). The results show that Section 34 (which focuses on promotional offers and gives the customer the right to fair and honest marketing), had **no impact** on the businesses in the sample.

### **The implications for promotions expenditure in the organisation, subsequent to the CPA being implemented**

The participants were asked to indicate if the promotions expenditure had increased subsequent to the CPA being implemented. Some of the responses were as follows:

- “We have spent a lot on branded vehicles. Each marketing representative has their own company branded vehicle. Our reps used to spend 50 % of their time in the office before. We now have assistants for them (internally) and prefer that they are out calling on new and existing customers for about 80% of their work time. This incurs added costs in terms of fuel”;
- We are spending more on purchasing databases with qualified leads. We now have a marketing department that controls and implements all email campaigns and promotions. We also run more competitions and have to pay for the travel packages up-front. Our marketing spend has gone up by approximately 60 %.
- The cost of hi-gloss paper and printing has gone up drastically over the last 6 years.
- We spend a lot more on newspaper advertising.
- The cost to the company has since increased around 30 %.
- We pay two marketing reps to cold canvass. ...more personnel on our payroll.
- The expenditure has increased by approximately 50 % as we are using other promotional tools besides SMS and emails. We also pay more salaries to staff to have these promotions during weekends. This is outside the ambit and scope of their work and we have to unfortunately incentivise our staff to conduct these promotions.
- Our promotions expenditure has increased by 70 %. We only advertise in the newspapers and include discount vouchers. This really entices the customers to visit our showroom

A small number (8) of the participants stated that there was no real increase of their promotions expenditure, while the majority of the participants (10) experienced a major increase to their promotions expenditure of up to 70 %. The increase in marketing and promotions expenditure has arisen from costs for: the purchase of branded vehicles for each marketing representative; purchasing databases with qualified leads; outsourcing all email campaigns and promotions; more competitions; increased newspaper advertising; and employment of more marketing representatives. The results show that there was **some impact** to the promotions expenditure in the organisation, subsequent to the CPA being implemented. This is contrary to the views of Gök and Hacıoglu (2010).

### **Measures adopted to address the restrictions placed by the CPA**

The participants were asked about measures adopted by their companies to address the restrictions placed by the CPA. The following responses were received:

- “The use of mobile trailers (to advertise on busy intersections), employing more marketing representatives, purchasing of more vehicles for marketing purposes, paying a company to manage the database and unwanted emails, and paying for an online customer management system”;
- “More printing of marketing material and newspaper advertising is being done. Free trial samples, and free assessments and consultations to organisations and schools is done to try to establish trust and loyalty. These measures are costly to implement and sustain. ... facilitating more staff training on how to treat customers fairly and returns and complaints procedures, implementing complaints handling procedures, only acting on clients’ mandates, getting

written permission from clients to correspond with them via email, and respecting the privacy of customers by not contacting them after hours or without their permission. These measures are, however, very labour intensive”;

- “Social media is also used to direct traffic to the websites and generate sales. This is a cost efficient method of promoting one’s product”.

Bellini, Cardinali and Ziliani (2011: 480) agree that new mobile and social technologies are a turning point in retail because they redefine what is “mass” and what is “targeted” and personalised. The authors add that until now it was possible to isolate a segment of the customers for a promotion, but now these customers can widen the segment by instantly sharing the benefits with their network of friends.

### **Advantages / benefits of the CPA to retailers and customers**

If customers perceive a business to be compliant with all the applicable legislation, and are socially responsible, then the business is positioned better in the marketplace as customers want to deal with them. In terms of the CPA (Section 72), companies are obligated to elect a social and ethics committee to monitor and report on their activities with regard to social and economic development, promotion of equality and development of the communities in which they operate. Participants were asked to indicate if their organisation experienced any similar benefits/advantages after implementing the CPA. The following benefits have been highlighted: the businesses now have a customers’ complaints procedure and there is an attempt to minimise customer complaints. Because they timeously rectify issues. Customers appreciate this and tend to be more loyal. They now receive excellent feedback regularly from customers via their website. This helps them to improve their service offerings. Eleven respondents indicated that they had not received any major benefits or advantages of complying with the CPA. Chirwa (2013: 76) notes that there are significant consequences of not complying with the CPA. Failure to comply can result in loss of trust from customers; loss of market share to competitors that comply; fines; incarceration; and loss of listings for larger companies.

## **CONCLUSION**

This study found that CPA has had a negative impact on marketing and customer retention strategies for retail businesses in Durban. They now have to take responsibility for the dissatisfaction of the customers sometimes independently of their suppliers. However, Compliance with the CPA has the advantage of contributing to the image of the business. Consumers are most likely to purchase from a retailer that engages in fair and responsible practices. This is an indication that whilst the CPA is forcing retailers to be ethical in their business approaches, it is expensive, but it has competitive advantages that are not immediately apparent. The application of the CPA resonates with the ethical prescriptions of Rawls (1971) in bringing about fairness in retail practices, especially in a nation with a discriminatory customer treatment and the human right violation by chain stores in the apartheid era. The CPA has made marketing even more expensive and business owners need to use cash-flows from their businesses to market and promote their business. Unfortunately, marketing may only generate business many months later with the hope that the turnover increases. Returns from customers add to administrative costs and labour-intensity. Although the research participants focused on the negative impacts of the CPA on their customer retention strategies and increased marketing expenditure on the short-term, indications of its benefits to their businesses are undeniably on the long-term. Mugobo and Malunga (2015: 230) echoes that compliance with the CPA has several benefits and protects brand reputation, brand equity and most importantly the relationship with the customer. Suggestions for future research is based on participant suggestions that a consortium be set up for all retailers in a particular industry to benefit members in terms of trade discounts, joint promotions and group advertising. They also suggested regular focus groups discussions with industry experts to assist with identifying gaps and generating ideas on customer retention.

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# DIFFUSION OF GREEN BUILDING INNOVATION IN OFFICE MARKETS IN POLAND

Michał Gluszek\*

**Abstract.** *In recent two decades, several important innovations have emerged and been adopted in the built environment across the world. Amongst the most prolific technological innovations are green (sustainable) and intelligent (smart) buildings design. The adoption of that innovation was particularly visible in the commercial property market. In the case of sustainable design, the process has been facilitated by the emergence of independent third party governance institutions and the development of green building certification systems.*

*In many cases, the process of innovation diffusion is a spatial phenomenon that manifests as hierarchical/cascade or contagious dispersion of given technological advancements. Mechanisms of spatial diffusion of innovation have been discussed theoretically and investigated empirically in regional economics as well economic geography. The diffusion of innovation has also been addressed in business and economic research.*

*We analyse the spatial diffusion of sustainable innovation across commercial property markets in major cities in Poland. Using a city-level panel data we trace the diffusion of green building innovation diffusion. We focus on a major green building certification scheme — LEED developed in the US. In the empirical part, we investigate the adoption of new technologies by analysing the fraction of innovative (green) office space in particular office markets.*

**Keywords:** *innovation; diffusion; smart buildings; green buildings; office market; real estate; Poland.*

**JEL Classifications:** *R33, Q55, O33.*

## INTRODUCTION

In recent two decades, several important innovations have emerged and been adopted in the built environment across the world. Amongst the most prolific technological innovations there is green (sustainable) and intelligent (smart) buildings design. The adoption of that innovation was particularly visible in the commercial property market. In the case of sustainable design, the process has been facilitated by the emergence of independent third party governance institutions and the development of green building certification systems.

In many cases, the process of innovation diffusion is a spatial phenomenon that manifests as hierarchical/cascade or contagious dispersion of given technological advancements. Since Hägestrands seminal contribution on the mechanisms of spatial diffusion of innovation (1953) the problem has been discussed theoretically and investigated empirically in regional economics as well economic geography. The diffusion of innovation has also been addressed in business and economic research.

We analyse the adoption of sustainable innovation across commercial property markets in major cities in Poland. Using a city-level panel data we trace the diffusion of green building innovation diffusion. We focus on the major green building certification scheme — Leadership in Energy & Environmental Design (LEED) developed in the US. In the empirical part, we investigate the adoption of new technologies by analysing the fraction of innovative (green) office space in particular office markets.

## LITERATURE REVIEW

The sustainable (green) building may be defined as responsibly created and managed construction, complying with the guidelines of natural environment protection and the efficient use of natural resources (Eichholtz, Kok, & Quigley, 2008; Kibert, 2013). Typically green buildings share some distinct attributes that make them environmentally and economically sustainable in the property life-cycle. The list includes, but is not limited to: use of ecological technologies in construction, maximum use of daylight, high indoor air quality and climate control; high energy and water-use efficiency (Gluszek, 2015).

The higher economic utility of green buildings should translate into several benefits for their users and owners. Several empirical studies report economic premiums associated with green buildings. Empirical research shows that green buildings usually have higher rents, and lower vacancies, and are

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generally high-valued by potential investors (Fuerst & McAllister, 2011; Pivo & Fisher, 2010; Wiley, Benefield, & Johnson, 2010). Despite the economic benefits, the diffusion of green buildings was not eminent, as the quality of buildings is difficult to observe. The adoption of technology was fostered by the creation of independent third party governance institutions and the development of green building certification systems — such as LEED. It has been demonstrated that independent institutions have a positive impact on multi-criteria building certification and diffusion of green innovation (Sedlacek & Maier, 2012).

The seminal empirical work on the diffusion of green innovation on the commercial real estate market suggests that there are strong economic fundamentals fostering the adoption of Energy Star and LEED certification in the US (Kok, McGraw, & Quigley, 2011). The results are confirmed and further extended in another US study (Fuerst, Kontokosta, & McAllister, 2014). Empirical evidence shows that adoption of LEED-certified commercial buildings is higher in densely populated cities with dynamic economic growth. Similar patterns are found in residential real estate markets. Diffusion of LEED certificates is faster in economically strong markets, with high household incomes, and facilitated by ecological policy measures. (Rakha, Moss & Shin, 2018) Ma and Cheng (2017) used clustering analysis to identify the local markets with high rates of green building adoption and factors that affect diffusion of green innovation. The research suggests that US based research findings may as well translate to other countries, including China (Ma & Cheng, 2017). Due to data limitations empirical results are scarce outside of the US or Europe, but there are also papers addressing green building adoption in emerging markets (Anzagira, Duah, & Badu, 2019).

## METHODS AND DATA

We investigate the diffusion of green technologies in office buildings using the data on LEED registered office projects in Poland. LEED system created in 1998 by the United States Green Building Council (USGBC) is the global leader in green building assessment and one of the most popular certification systems in Europe — second only to Building Research Establishment Environmental Assessment Methodology (BREEAM) created in 1990 in UK (Gluszak 2015). Other important green building European certification systems Haute Qualité Environnementale (HQE) created in 1992 by Association pour la Haute Qualité Environnementale (ASSOHQE) or Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB) created in 2007 by Deutsche Gesellschaft für Nachhaltiges Bauen e. V has not achieved similar popularity in Poland based on the number of certified projects.

We track the adoption of green building innovation in three major office markets in Poland — Warsaw, Krakow, and Wroclaw from 2009 to 2020. Warsaw is the capital of Poland and by far the biggest commercial real estate market in the country. It is also the biggest office market in Central and Eastern Europe. Krakow and Wroclaw are the biggest regional office markets in Poland ranked as second and third based on the office stock available.

There are several measures of market penetration of green innovation in the built environment. The most simple measure is the fraction of green buildings ( $k_i$ ) in total number of office buildings ( $n_i$ ) in study area (metropolitan area, city, country). It is given by following equation (Eq1):

$$K_i = \frac{k_i}{n_i},$$

Another simple measure of adoption of green technologies in the built environment is a share of green buildings in total building area in question. The fraction of green office space can be calculated in accordance with the following equation (Eq2):

$$F_i = \frac{z_i}{x_i},$$

where  $z_i$  is the stock of LEED-certified office space in a city  $i$  and  $x_i$  is the total office stock in a city  $i$ .

This particular measure was used in the seminal work on green building adoption in the US (Kok et al., 2011). It can be argued that simple measures of technology adoptions may lead to biased estimates - for discussion see Fuerst et al. (2014). In general the formulae based on the number of green buildings may overestimate the market penetration rate in cities with a significant number of small green projects, whereas the formulae based on the area may overvalue the markets with big green projects (in extreme case one certified building may account for a big share of commercial area in small town).

Fuerst et al. (2014) suggested a new green building adoption measure based on the proportion of sustainable space in a given area normalized by the overall sustainable space. The G index is derived from spatial Gini coefficient and has a following form (Fuerst et al., 2014) (Eq3):

$$G = \sum_{i=1}^N \frac{z_i}{Z} - \frac{x_i}{X},$$

where  $z_i$ ,  $x_i$  are as in Eq 2,  $Z$  is the sum of LEED-certified office space in all cities and  $X$  is a total office stock in all cities.

The data on LEED registered projects are taken from LEED Projects Directory administered by USGBC (<https://www.usgbc.org/projects>). The data on office stocks are from Cushman & Wakefield market reports on regional commercial real estate in Poland. The exploratory analysis of adoption of green building technologies on regional office markets in Poland is presented in the following section.

## RESULTS

In the beginning of the study, we explored the data on LEED building registration and certification in Poland. According to the LEED project directory as of 31 October 2020 there were 200 office projects registered and 127 already certified in LEED in selected cities in Poland. The average number of points received in LEED certification by office projects was 71.1, with the median of 69. Minimum number of points received was 30 and maximum was 92. The number of points is associated by the label — silver (up to 59 points), gold (60 to 79 points), and platinum (80 points and more). The number of points achieved by certification label is presented in Figure 1.

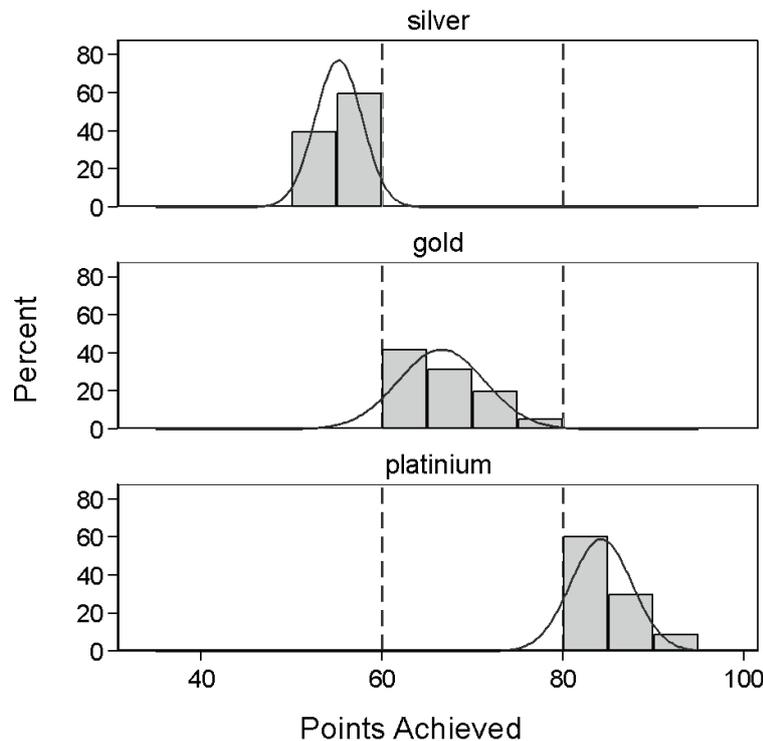


Figure 1: Points received in LEED certification and label achieved

Source: own elaboration

The research is based on a registration data rather than certification for one fundamental reason. Data shows that certification in the LEED system is a lengthy process (median time to achieve certification is 856 days), and registration is a valid signal of a green quality of the building. The situation is even more complicated when we account for a certification type (Figure 2).

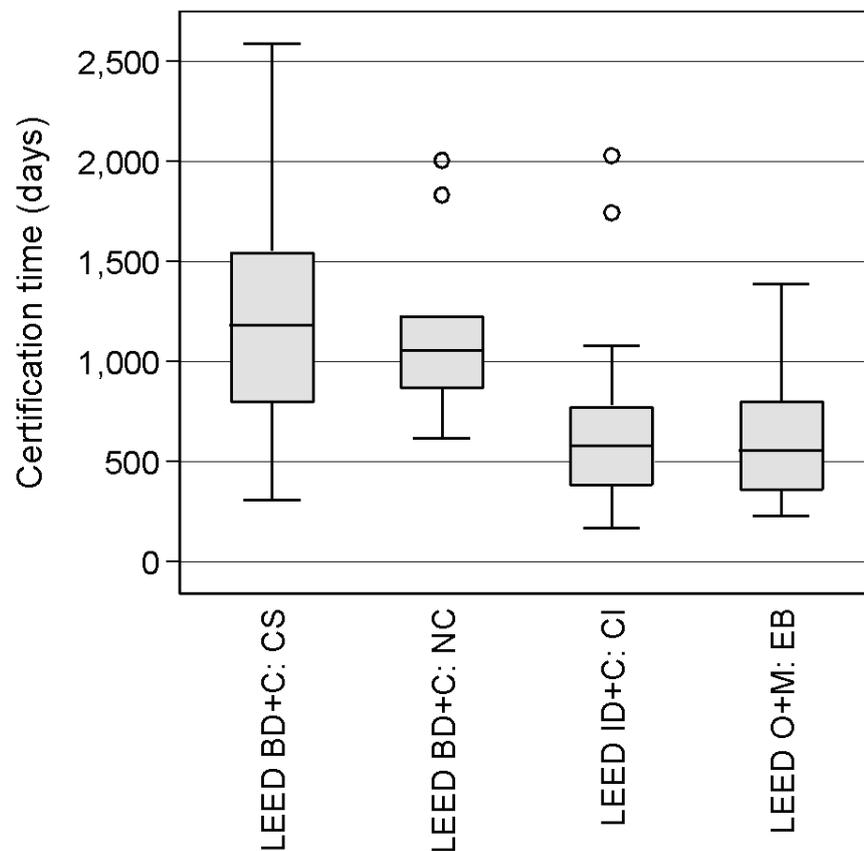


Figure 2: Time between registration and certification by certificate type in Poland

Source: own elaboration

Certification time is the longest in the case of Building Design and Construction (BD + C) LEED rating system (intended for buildings that are new construction or major renovations) — median of 1179 and 1055 for Core and Shell and New Construction respectively. On average getting certification in Interior Design and Construction (ID+C) LEED system (created for interior spaces that are a complete interior fit-out) takes considerably less time (median equal to 579 days). The registration time is similar in case of Building Operations and Maintenance (O + M) LEED system (for buildings that are fully operational and occupied for at least one year).

In the second step of the research we focused on the number of office projects registered in LEED certification scheme. We tracked adoption of green technologies in Krakow, Warsaw and Wroclaw. The Figure 3 shows the cumulative number of LEED registered projects in these three cities from 1 Jan 2009 to 31 Oct 2020.

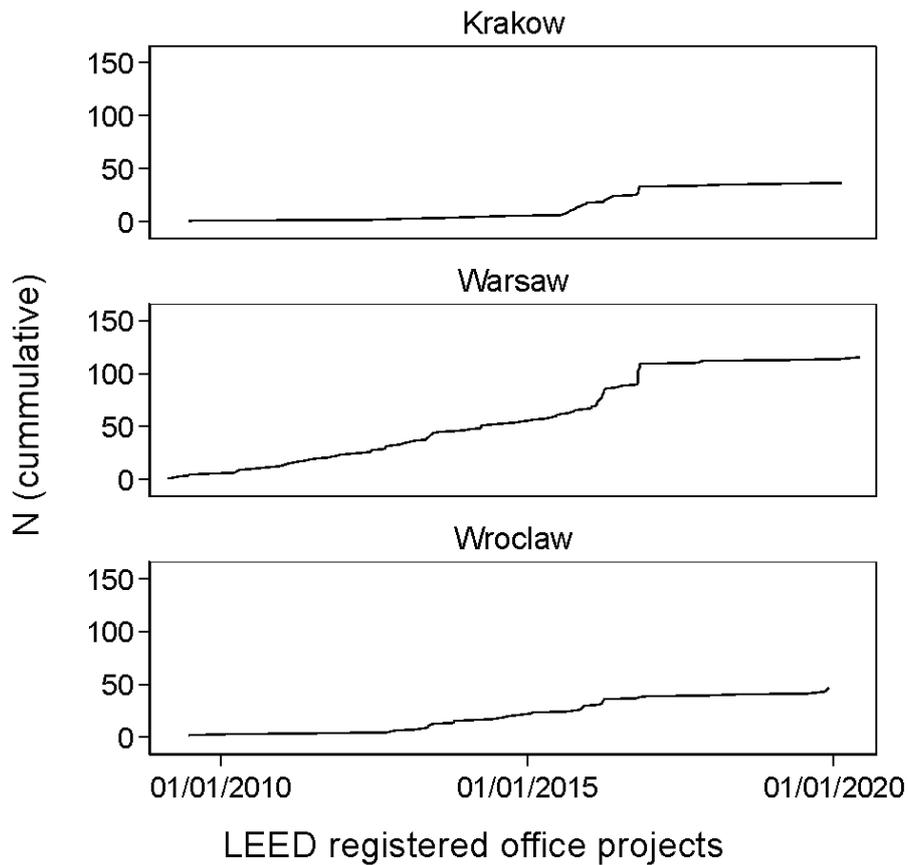


Figure 3: The number of LEED registered office projects in selected cities in Poland

Source: own elaboration

We explore the adoption of green technologies using a simple measure suggested by Kok et al (2011). The fraction of LEED registered office space changed significantly in the study period in all three cities (Figure 4).

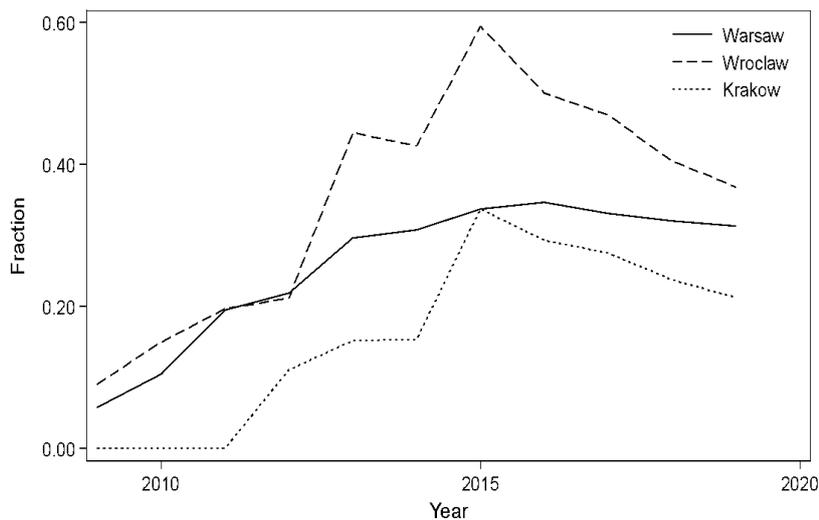


Figure 4: Fraction of LEED buildings in selected cities in Poland

Source: own elaboration

The data analysis suggests that the fraction of LEED registered office space steadily increased in Warsaw, Wroclaw and Krakow from 2009 to 2015. The share was the smallest in Krakow and generally

the highest in Wroclaw. In both regional cities the measure was more volatile than in Warsaw, mainly due to lower amounts of office stock. The share of LEED registered space decreased from 2015 to 2020, following the significant increase in overall office stock. It is worth noting that the decrease of the share of LEED registered office space can be at least partially attributed to the competition from other green building certification schemes. Especially BREEAM system has a strong competitive position in Poland, and particularly in Krakow.

To explore penetration of LEED certification systems on the office market in Poland we used G-index as suggested by Fuerst et al (2014), and tracked it in all three cities from 2009 to 2020. The results are shown in Figure 5.

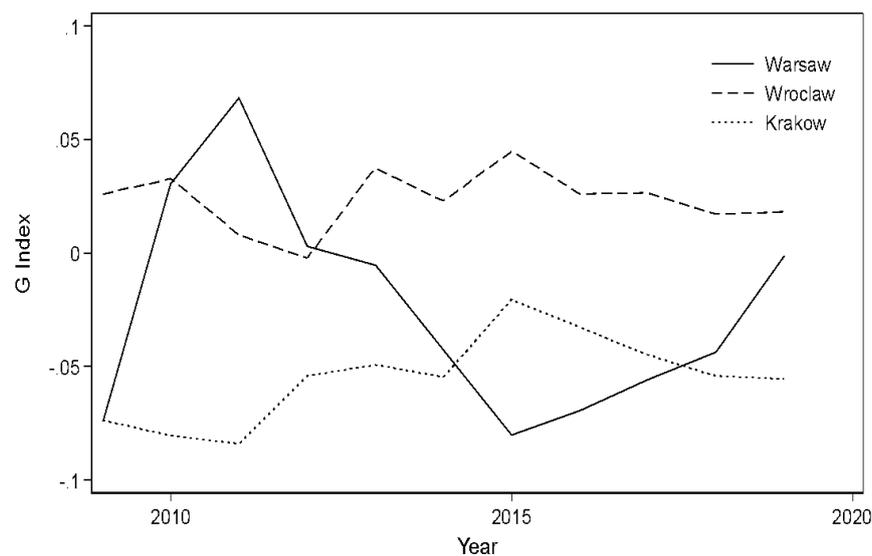


Figure 5: G-index of LEED building adoption in selected cities in Poland

Source: own elaboration

G-index captures the difference between a proportion of all LEED-certified office stock and a proportion of all modern office stock in a given city. In three major office markets in Poland the G-scores changed dynamically during the study period. In Warsaw G-index increased from 2009 to 2011 to reach its peak in 2011. In the following period it decreased, and for the most of the period remained negative. The G-index was more stable in Krakow, albeit its values were negative in the study period. The results suggest that despite its importance as a major Polish regional office market, Krakow was not a centre of green buildings diffusion, at least when we measure it by LEED adoption.

The simple measures of market penetration based on a fraction of LEED registered projects must be treated with caution. The office area registered in LEED in a given year is linked both with existing space and space under construction — thus high share in a given year may be misleading. Also a considerable share of green office space is certified in other schemes — mostly in BREEAM. The complex study of green building certification in European countries is thus more complicated than in the US.

## CONCLUSION

In the paper we tracked the adoption of green building innovation in three major cities in Poland — Warsaw, Wroclaw and Krakow. We focus on the major green building certification scheme LEED developed in the US, and popular in Poland. The diffusion of green innovation was particularly fast between 2010 and 2020 in all selected cities. Nonetheless the explorative research suggests that the dynamics of adoption of green technologies is different in selected cities. The adoption rate was the highest in Wroclaw, and the lowest in Krakow. The study, albeit explorative, contributes to the understanding of green building adoption in emerging markets.

## ACKNOWLEDGEMENTS AND FINANCIAL DISCLOSURE

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# RESEARCH ON BANKING: THE INTEGRATION OF INNOVATIVE BIBLIOMETRICS AND LITERATURE REVIEWS

Mikhail Lychagin\*

**Abstract.** *The aim of the paper is to show the main trends of world research on banking in 1991–2020. The database includes the publications with the term “banking” in the titles (13 514 in EconLit and 12 168 in Scopus) and hundreds of literature reviews concerning banking. The full texts of corresponding journal articles, books and working papers helped to deepen the understanding of the banking issues and approaches of solutions. The core methodology was innovative bibliometrics that embraces the analysis of publication activity, the frequency analysis of terms and their combination, and structural and morphological analysis based on JEL and ASJC subject codes. The first new and important result of bibliometric analysis based on EconLit is the map that shows the emergence of new banking research because of the inclusion of new JEL subject micro categories. This map permits range research directions each year according to the numbers of corresponding publications. The analysis based on Scopus data gives two possible directions. The first direction shows the frequency distribution of publications on banking according to ASJC subject macro and micro codes. The second direction based on publication activity and banking terms presents a set of interesting works connected with innovation like “mobile”, “online” and other types of banking activity. The both directions will get additional impulses for development with a combination of systemic and other literature reviews. Among them are “knowledge management”, “omni-channel banking”, “climate-related prudential risks”, “deep learning”, “banking sector performance, profitability, and efficiency”, etc. The final part of the paper contains brief information of publication on banking in EconLit and Scopus concerning countries in the list of the ASECU members.*

**Keywords:** *banking, research, innovation, bibliometrics, review.*

**JEL Classifications:** *G21, E50.*

## INTRODUCTION

The electronic bibliography EconLit contains 308 385 records (one record for one publication) at the end of 1991. Among them, there are 2119 records (0.69 percent of total quantity) with the word “banking” in the titles. We are able to find 1 660 103 records at the end of 2019. Among them, there are 13 514 records (0.81 percent of total quantity) with the word “banking” in the titles. The presented data in the usual bibliometric analysis of publication activity show the growing interest concerning research on banking. However, the presented indicators do not reflect the main trends in banking research.

The first issue concerns the qualitative aspect when the new approaches arise at the intersections of JEL classification categories. The innovative bibliometrics helps to solve this issue. The second issue touches the size and the framework of the EconLit. EconLit embraces not only the journal articles and books, but also book reviews, dissertations, collective volumes articles and working papers. This range of publication types exceeds the ranges in Scopus and in the Web of Sciences. However, Scopus includes three times more journals on economics and management than EconLit. Because of this, it is necessary to add Scopus database to the study of publications on banking from the innovative point of view. The third issue arises when we are going along the hundreds of literature reviews concerning banking and see the drawbacks in the links with innovative bibliometrics. At last, the fourth issue and the way of new development involve the examination of banking research in the ASECU countries.

The aim of the paper is to show the main trends of world research on banking in 1991–2020 from the point of view of the mentioned four issues and innovative combination of their solutions.

## METHODOLOGY

This paper unites and develops the 50 years study of financial innovations, including in banking, and 30 years applications of innovative bibliometrics based on different sources (Lychagin, 2019a, 2019b). As in our previous works, we combine the types of bibliometric analysis: analysis of publication activity, term and lexical analysis at different levels of frequency and structural and morphological analysis using existing subject classifications. The term “innovative” concerning

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bibliometrics denotes the orientation towards the new research emerging at the new intersections of subject fields or due to new combinations of existing approaches. This methodology has brought good results on the EconLit base with the JEL classification. Then we tested it on a Scopus database with ASJC classification. A set of literature and bibliometric reviews presented in top rating sources helped at all stages of the research.

## RESEARCH DESIGN, DATA ANALYSIS AND FINDINGS

### Analysis Based on EconLit

#### Research Design for EconLit

At the first stage, we extracted all records from the EconLit with the term “banking” in the titles for each year in 1991–2018. Then we constructed the dynamic frequency dictionary according to JEL codes at the end of 2018 using the method presented in (Lychagin et al, 2018, pp. 1807–1829) and determined the most important trends.

At the second stage, we divided all records into two almost equal parts. Part 1 includes NP1 = 831 385 records for 1886–2004 years. Part 2 contains NP2 = 828 735 records for 2005–2019 years. Based on analysis of JEL titles, abstracts and keywords, we have chosen 50 significant banking terms. Then with the EconLit help, we found the numbers of publications NX1 and NX2 that contain the words “banking” and the additional term “X” for the corresponding first and second periods, and on this basis the indicators  $D1 = NX1 \times 1000 / NP1$ ,  $D2 = NX2 \times 1000 / NP2$ , and  $DD = D2 - D1$ .

#### Data Analysis and Findings for JEL codes

Let us consider the absolute numbers of records with the term “banking” and ratios these numbers to the total numbers of records in percent in the following six periods: 1991–1995 — 1330 (0.9); 1996–2000 — 1568 (0.8); 2001–2005 — 1693 (0.73); 2006–2010 — 2271 (0.78); 2011–2015 — 3206 (0.94); 2016–2018 — 1327 (0.94).

The publications on banking involved 89 JEL micro codes in 1991. The prominent inclusion of new JEL micro categories was in the sequential years: 1995 — 200, 2000 — 305, 2005 — 398, 2010 — 481, 2015 — 563, 2018 — 592 codes from the total 853 micro codes of JEL subject classification.

Table 1 shows different trends in banking research in the frameworks of JEL macro categories. There are two groups of categories. The group of *diminishing significance* includes five categories: A General Economics and Teaching; B History of Economic Thought, Methodology, and Heterodox Approaches; G Financial Economics; N Economic History; R Urban, Rural, Regional, Real Estate, and Transportation Economics. The group of *growing significance* includes four categories: C Mathematical and Quantitative Methods; D Microeconomics; L Industrial Organization; M Business Administration and Business Economics, Marketing, Accounting; Z Other Special Topics (cultural and sports economics).

However, if we are looking at the levels of meso and micro categories the picture is more complicated. The ranking of 16 first meso categories in diminishing order according to increase of the share (the number in round brackets) in 2010–2018, percent: G0 Financial Economics: general (contains the booming micro category G01 Financial Crises) (1.5). G3 Corporate Finance and Governance (1.35). O1 Economic Development (0.92). L2 Firm Objectives, Organization, and Behavior (0.58). E3 Prices, Business Fluctuations, and Cycles (0.55). Z1 Cultural Economics (0.42). D1 Household Behavior and Family Economics (0.38). M1 Business Administration (0.35). E2 Consumption, Saving, Production, Investment, Labor Markets, and Informal Economy (0.34). M3 Marketing and Advertising (0.3). L5 Regulation and Industrial Policy (0.2). M4 Accounting and Auditing (0.2). D8 Information, Knowledge, and Uncertainty (0.18). H6 National Budget, Deficit, and Debt (0.15). F4 Macroeconomic Aspects of International Trade and Finance (0.12). C5 Econometric Modeling (0.12).

Code and Name of JEL Macro Category	1995	2000	2005	2010	2018
A General Economics and Teaching	0.59	0.31	0.21	0.18	0.14
B History of Economic Thought, Methodology, and Heterodox Approaches	1.46	1.29	0.95	0.66	0.55
C Mathematical and Quantitative Methods	0.08	<b>0.38*</b>	<b>0.35</b>	<b>0.44</b>	<b>0.65</b>
D Microeconomics	1.61	<b>1.47</b>	<b>2.12</b>	<b>3.10</b>	<b>3.96</b>
E Macroeconomics and Monetary Economics	11.9	11.4	10.7	10.1	<b>11.9</b>
F International Economics	5.12	<b>5.62</b>	<b>5.89</b>	5.56	4.98
G Financial Economics	52.2	51.1	48.6	46.9	45.1
H Public Economics	0.39	<b>0.48</b>	<b>0.50</b>	0.42	<b>0.58</b>
I Health, Education, and Welfare	0.12	0.10	<b>0.15</b>	0.14	<b>0.19</b>
J Labor and Demographic Economics	0.87	1.09	0.89	0.80	<b>0.86</b>
K Law and Economics	0.71	0.61	0.48	<b>0.63</b>	0.59
L Industrial Organization	2.80	<b>3.63</b>	<b>5.53</b>	<b>7.58</b>	<b>7.81</b>
M Business Administration and Business Economics, Marketing, Accounting	0.91	<b>0.82</b>	<b>0.86</b>	<b>1.34</b>	<b>2.30</b>
N Economic History	11.07	8.36	6.36	4.64	3.15
O Economic Development, Technological Change, and Growth	3.27	<b>6.00</b>	<b>8.26</b>	<b>9.08</b>	<b>9.98</b>
P Economic Systems	5.51	<b>6.07</b>	<b>6.71</b>	6.14	4.69
Q Agricultural and Natural Resource Economics, Environmental and Ecological Economics	0.28	<b>0.48</b>	<b>0.62</b>	<b>0.80</b>	0.70
R Urban, Rural, Regional, Real Estate, and Transportation Economics	1.06	0.79	0.70	0.62	0.58
Z Other Special Topics	0.0	<b>0.03</b>	<b>0.12</b>	<b>0.58</b>	<b>1.01</b>

\* *Bold shrift shows the increase of share.*

*Source. EconLit data and the author's calculations*

*Table 1: The Shares of JEL Macro Categories in Accrual Total Numbers of EconLit Publications for Indicated Years in 1995–2018, percent*

Among leading micro categories for the whole period 1991–2018 we see (according to impact in percent, the value in round brackets): G21 Banks; Depository Institutions; Micro Finance (22.9). G28 Financial Institutions and Services: Government Policy and Regulation (9.9). O16 Economic Development: Financial Markets; Saving and Capital Investment; Corporate Finance and Governance (6.7). G32 Financing Policy; Financial Risk and Risk Management; Capital and Ownership Structure; Value of Firms; Goodwill (3.8). E44 Financial Markets and the Macroeconomy (3.1). E58 Central Banks and Their Policies (2.1).

Many new micro categories appeared after 2010. A few of them are the following (in diminishing order according to the number of publications): F45 Macroeconomic Issues of Monetary Unions (10). D25 Intertemporal Firm Choice: Investment, Capacity, and Financing (9). C61 Optimization Techniques; Programming Models; Dynamic Analysis (7). K34 Tax Law (7). M51 Personnel Economics: Firm Employment Decisions; Promotions (7). F38 International Financial Policy: Financial Transactions Tax; Capital Controls (6). B26 History of Economic Thought since 1925: Financial Economics (5). B59 Current Heterodox Approaches: Other (5). C93 Field Experiments (5).

### ***Data Analysis and Findings for Significant Terms in EconLit***

The first number in the round brackets in the next succession of terms shows the level of D2 (see subsection 2.1.1), the second is equal to DD. *The growth*: banking (8.586; 0.917), crisis (1.015; 0.521), risk (0.609; 0.35), islamic (0.403; 0.3), shadow (0.221; 0.217), efficiency (0.482; 0.217), global (0.217; 0.184), stability (0.267; 0.165), effect (0.307; 0.159), management (0.192; 0.115), model (0.235; 0.105), competition (0.372; 0.095), regulation (0.355; 0.084), credit (0.269; 0.072), capital (0.247;

0.071), internet (0.090; 0.070), stress (0.066; 0.065), Basel (0.065; 0.06), mobile (0.052; 0.052), e-banking (0.057; 0.052), asset (0.063; 0.041), comparative (0.079; 0.032), default (0.036; 0.029), modeling (0.040; 0.026), online (0.028; 0.023), innovation (0.071; 0.018), effective (0.020; 0.014), strategy OR strategic (0.096; 0.012), institutional (0.042; 0.01), bankruptcy (0.013; 0.007), audit (0.007; 0.006), web (0.007; 0.006), simulation (0.006; 0.001), supervision (0.099; 0.001). *The stable level*: corporation (0.013; 0), structure + capital (0.022; 0), financial market (0.055; 0). *The recession*: econometric (0.013; -0.001), distress (0.02; -0.002), electronic (0.032; -0.006), law (0.040; -0.01), control (0.043; -0.02), security (0.031; -0.022), multinational (0.019; -0.038), issue (0.082; -0.04), transition (0.057; -0.04), reform (0.227; -0.042), problem (0.036; -0.071), international (0.322; -0.079), policy (0.301; -0.097), money (0.164; -0.123), central (0.321; -0.158).

**A Brief Conclusion.** The presented analysis based on EconLit shows the growing interest in the problems of risk, crisis, financial stability, globalization, regulation and innovative technologies of communications.

### **Analysis Based on Scopus**

#### **Research Design for Scopus**

There are a few useful variants of advanced search with Scopus software. The phrase TITLE (banking) gives us 19 982 documents on 22d of October 2020. The leading role in banking play two branches of knowledge or two macro categories of ASJC classification: 20 Economics, Econometrics and Finance (8569 units) and 14 Business, Management and Accounting (7289 units). However, the term “banking” exists in the titles of the other 25 of macro categories of ASJC classification. Sometimes this term points to monetary banking. In many cases, this term denotes the conservation of blood, genetic and other resources. Because of this fact, we limited our search by two obviously monetary banking ASJC macro categories 14 and 20 using the following search phrase:

TITLE (*banking*) AND SUBJTERMS (14\*\* OR 20\*\*)

The result is equal to 12 168 documents. The phrase SUBJTERMS (14\*\* OR 20\*\*) gives 4 847 553 publications for both macro categories for business and economics. The ratio  $12\ 168 \times 100 / 4\ 847\ 553 = 0.25$  (percent) shows the share of works on research banking. The phrase TITLE ( banking AND risk ) AND SUBJTERMS ( 14\*\* OR 20\*\* ) brings the number 842 and the ratio  $842 \times 100 / 12\ 168 = 6.92$  (percent). This result signifies the growing role of risks in banking research. Scopus gives an opportunity to trace publications of all ASJC codes and terms from the beginning of the 19th century.

#### **Data Analysis and Findings for ASJC codes in Scopus**

The following list shows (in diminishing order according to percent in round brackets) the shares of banking research in ASJC micro categories that belong to macro categories of business (20) and management (14): 2003 Finance (1.60). 1402 Accounting (0.88). 2000 General Economics, Econometrics and Finance (0.83). 1406 Marketing (0.63). 2002 Economics and Econometrics (0.63). 1401 Business, Management and Accounting (miscellaneous) (0.53). 2001 Economics, Econometrics and Finance (miscellaneous) (0.52). 1400 General Business, Management and Accounting (0.45). 1403 Business and International Management (0.43). 1404 Management Information Systems (0.42). 1405 Management of Technology and Innovation (0.38). 1407 Organizational Behavior and Human Resource Management (0.37). 1408 Strategy and Management (0.31). 1410 Industrial relations (0.16). 1409 Tourism, Leisure and Hospitality Management (0.03).

#### **Data Analysis and Findings for Significant Terms in Scopus**

As shown in the upper part of Table 2, there is the growing interest in risks issues concerning banking. The approaches to the effective methods of bank management and efficiency of banking activity have remarkable significance.

The name of the term	NP*	1990	1995	2000	2005	2010	2015	2020
Banking	12168	0.1	0.1	<b>0.12**</b>	<b>0.13</b>	<b>0.16</b>	<b>0.21</b>	<b>0.25</b>
Risk	842	<b>2.87</b>	<b>3.34</b>	<b>3.65</b>	<b>3.98</b>	<b>4.57</b>	<b>5.96</b>	<b>6.92</b>
Effect	686	5.1	4.69	4.68	4.17	<b>4.02</b>	<b>4.37</b>	<b>5.65</b>
Efficiency	559	<b>1.12</b>	<b>2.5</b>	<b>3.2</b>	<b>3.94</b>	<b>4.97</b>	4.90	4.59
Capital	292	<b>2.23</b>	<b>2.29</b>	2.24	<b>2.32</b>	2.21	<b>2.25</b>	<b>2.4</b>
Consumer	204	<b>1.28</b>	<b>1.46</b>	1.28	<b>1.69</b>	<b>1.83</b>	1.62	<b>1.68</b>
Innovation	145	0.96	<b>1.46</b>	1.22	<b>0.91</b>	<b>1.06</b>	<b>1.18</b>	<b>1.19</b>
Supervision	139	0.32	<b>0.52</b>	<b>0.64</b>	<b>1.02</b>	<b>1.21</b>	<b>1.25</b>	1.14
Model OR modeling	589	1.59	1.56	<b>2.05</b>	<b>3.07</b>	<b>3.29</b>	<b>3.93</b>	<b>4.84</b>
Internet	458	0.0	0.0	<b>0.58</b>	<b>2.36</b>	<b>3.95</b>	<b>4.24</b>	3.76
Mobile	307	0.0	0.0	0.0	0.0	<b>0.6</b>	<b>1.42</b>	<b>2.52</b>
Online	199	0.0	<b>0.1</b>	<b>0.13</b>	<b>0.55</b>	<b>1.57</b>	<b>1.65</b>	1.64
E-banking	196	0.0	0.0	0.0	<b>0.51</b>	<b>1.19</b>	<b>1.59</b>	<b>1.61</b>
Electronic banking	129	0.8	<b>0.83</b>	<b>1.02</b>	<b>1.14</b>	<b>1.21</b>	1.12	1.06
Review	92	1.28	<b>1.04</b>	<b>1.02</b>	0.75	0.57	<b>0.65</b>	<b>0.76</b>
Research	74	0.48	<b>0.52</b>	0.38	<b>0.43</b>	<b>0.51</b>	<b>0.57</b>	<b>0.61</b>
Trend	57	0.64	0.52	<b>0.64</b>	0.55	0.51	0.5	0.47
Knowledge management	20	0.0	0.0	0.0	0.04	<b>0.11</b>	0.1	<b>0.16</b>

\* NP — number of publications on 22 of October 2020. \*\* Bold shrift shows the increase.

Source. Scopus data and the author's calculations

Table 2: The Changes in Shares in the Accrual Manner for the Significant Terms in Research on Banking in the Titles in Scopus for Indicated Years in 1990–2020

The problems of capital, relations with consumers, innovations in general and supervision are less important and have not constant interests of the researchers. The middle part of Table 2 presents the instrumental part of banking research and activity. First, we see the constant growing interest in models and modeling. In addition, there are the different developments in various types of electronic banking. At the bottom of Table 2, we see the certain interests concerning banking research in the whole, reviews and “trends” that are in question of many studies. The general transition to the economy and society based on knowledge gave an impulse to the emerging and development of “knowledge management” in many research fields. One of these fields is banking research.

### Systemic and Other Literature Reviews on Banking Research

**Knowledge management (KM).** (Easa, 2019) indicates that the application of KM in banks started at the World Bank in 1996. Then was application in several developed countries that are both human- and technology-oriented in terms of KM. The possible future research relates to topics such as innovation, customer relation and risk management.

**Omni-channel banking.** Academic dictionaries determine “omni” as a combining form of all things. (Menrad, 2020) considers omni-channel as a new stage of bank management after single-, multi- and cross-channel banking. The author shows the rapid growth of publications about omni-channel in all sectors and in banking since 2013 and comes to conclusion that “omni-channel management will influence bank sales, staff, processes, and, the customer side, customer satisfaction, and loyalty” (Menrad, 2020, p. 117).

**Climate-related prudential risks.** (Feridun & Güngör, 2020) starting from the statement that climate-related financial risks have been intensifying over the last decade, suggest indicative lists of transitional and physical risks (table 2), describe emerging international trends and guiding principles regarding climate risks for 22 countries (table 3), give examples of climate-related factors affecting

prudential risks (table 4). Important result is the “Indicative List of Quantitative and Qualitative List of Climate Risk Disclosures for Banks” (Box 1).

**Deep learning (DL).** The paper by (Huang, Cha & Cho, 2020) provides a comprehensive survey of the literature on the application of DL in finance and banking and reviews 40 articles refined from a collection of 150 articles published between 2014 and 2018. The review recognizes seven core domains (prediction of exchange rates, stock market and trading, macroeconomics, portfolio management, default risk) and establishes the relationships between the domains and their frequently used DL models. The authors analyze the optimal models toward each domain and make recommendations according to the feasibility of DL models.

**Banking sector performance, profitability, and efficiency.** A citation-based systematic literature review by (Ahmad et al, 2020) gives the list of the most influential journals in the banking efficiency field and on the basis of top 100 papers indicates five most focused areas and themes (determinants of efficiency, model and method, ownership, financial crises and scale economies). The results of this review do not contradict the results of our bibliometric and content study.

The limit of our paper compels us to leave outside the text many interesting new developments concerning banking research like “complex adaptive system”, “big data”, “cloud computing”, and some other.

### **Publications on Banking in ASECU countries**

Using the bibliometric methods presented in the upper sections of the report we calculated for each ASECU country the following indicators that displayed in the round brackets. The first and the second indicators are the numbers of publications in Scopus and EconLit with the term “banking” and the indicators for the specified country, like Greece and Greek, correspondingly. The third and fourth indicators are the numbers of publications in Scopus and EconLit per one million of the specified country population, correspondingly. The source for population data were the reports of the World Health Organization.

**Full Members:** Albania (10; 7; 3.47; 2.43). Armenia (0; 2; 0.0; 0.68). Bosnia Herzegovina (3; 1; 0.9; 0.3). Bulgaria (9; 17; 1.28; 2.41). Greece (90; 80; 8.55; 7.6). Montenegro (6; 7; 9.55; 11.15). Poland (39; 48; 1.03; 1.27). Republic of North Macedonia (4; 10; 1.92; 4.80). Romania (18; 14; 0.92; 0.72). Russia (119; 54; 0.82; 0.37). Slovakia (11; 5; 2.02; 0.92). Serbia (16; 16; 1.82; 1.82). Turkey (178; 154; 2.16; 1.87). Ukraine (62; 32; 1.4; 0.72). **Associated Members:** Bangladesh (81; 32; 0.5; 0.2). China (385; 308; 0.27; 0.21). Egypt (30; 16; 0.3; 0.16). Hungary (20; 52; 2.06; 5.36). Kazakhstan (14; 11; 0.76; 0.6). Lebanon (9; 3; 1.31; 0.44). Palestine (2; 2; 0.4; 0.4).

**Countries for comparison:** Germany (34; 65; 0.41; 0.78). France (68; 65; 1.0; 0.96).

The topics of the mentioned publications are similar to the themes in the other counties.

(Apergis & Eleftheriou, 2019) study the impact of the 2008 financial crisis on the Greek banking system using panel data across all Greek banks, spanning the period 1984–2015.

(Feher & Varga, 2019) examine the possibilities of the digital transformation of the Hungarian banking industry through the “One Week Sprint” method, derived from general design thinking methodology.

(Sokic, 2015) investigates the differences in cost efficiency of the banking industry in Serbia and Montenegro over the period 2005–2012.

## **CONCLUSION**

Scientific literature about banking includes thousands of publications of different types. The main part of this literature appeared during the last three decades. There is no united database that reflects all scientific publications. EconLit and Scopus are one of the leading sources of economic literature. However, they have different types of works and subject classifications. These features make obstacles for findings of the research trends. Because of this, the aim of the presented paper is to overcome the mentioned barriers and to discover the main trend in banking research. The text describes the

integrated approach that united the bibliometrics based on EconLit with JEL classification and Scopus with ASJC classification and permits to determine main trends in banking research and to indicate the points of growth at the intersections of subject fields with combination of significant terms. Content analysis of publications with conjunction of systemic, bibliometric other reviews supplement the innovative bibliometric creates new complementary mapping. A brief bibliometric review of publications on banking in ASECU countries supports the presented approach.

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# IS A PLATFORM ECOSYSTEM A NEW TYPE OF A MARKET?

**Milena Balanova\***

**Abstract.** *This paper explains the nature of a platform ecosystem as an evolutionary result of Industry 4.0 with industry and business digitalization along with a business ecosystem providing arguments for positioning it in line with a market, a hierarchy and a network. Specifically, the aim of this work is to show the transition to business ecosystems and the gripping power of one of its actors — platform companies. It also makes a short overview of the latest definitions of the platform and business ecosystem in the frame of international business, attempts to define ecosystem participants that are differently viewed in the related literature and depicts mechanisms of value creation inside the platform ecosystem.*

**Keywords:** *platform ecosystem, platform company, business ecosystem, value creation, ecosystem,-specific advantages.*

**JEL Classifications:** *D14, F23, L14, O14.*

## INTRODUCTION

The word ‘*ecosystem*’ is likely to be the most ambiguous term that has been struggling to become “crystalized” and unanimously understood in the frame of business. Having emerged at the junction of industrial and postindustrial era, it is only acquiring its common image of the structured system of specific relationships among market players.

The main task of this paper is to confirm or refute the assumption that the platform ecosystem is a new type of a market or another new organizational structure and demonstrate the scope of the platform and business ecosystem. Another task is to explain the mechanism for value creation in the platform ecosystem.

## MATERIALS AND METHODS

Since the subject of the study is the ecosystem conceptualization, findings produced by the result of scholars’ community initiatives (e. g. MIT Sloan Management Review (MIT SMR), the Platforms Initiative at Boston University), scientific articles of scholars dedicating their research mainly to the platform ecosystems (Jacobides, Cennamo & Gawer (2018); Inoue & Tsujimoto, 2018) and business ecosystems (Moore, 1993; 2006; Iansiti & Levien; Adner, 2017) as well as reports of tech and platform companies’ teams (Alibaba, IBM) were used as the material for this research. This paper is a qualitative study using a synthesis method.

## RESULTS

### Defining an Ecosystem

The introduction of the term “ecosystem” dates back to 1986. It was initially used by the sociologist Amos Hawley. Business environment acquired a new understanding of an ecosystem in 1993 due to the work of Moore “Predators and prey: a new ecology of competition”. The term ‘*ecosystem*’ in terms of business generally refers to a group of interacting firms that depend on each other’s activities (Jacobides et al., 2018).

One of the tasks of this paper was to confirm the findings of Jacobides et al. (2018) by updated definitions as a result of the latest literature review which categorized researches on ecosystems in three broad groups: business ecosystems, innovation ecosystems and platform ecosystems. Table 1 below reflects the latest views on business and platform ecosystems.

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Year	Definition of the business ecosystem
1993	An economic community in which a variety of inter-related stakeholders co-evolve (Moore, 1993; Iansiti & Levien, 2004).
2014	A complex web of interdependent enterprises and relationships that creates and allocates business value (Davidson, Harmer & Marshall, 2014).
2017	Defined by the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize (Adner, 2017).
2018	A set of actors that contribute to the focal offer's user value proposition (Kapoor, 2018).
2018	A set of actors with varying degrees of multilateral, nongeneric complementarities that are not fully hierarchically controlled (Jacobides et al., 2018).
Year	Definition of the platform ecosystem
2013	"Multi-sided markets" enabling transactions between distinct groups of users (Cennamo & Santaló, 2013).
2014	Semi-regulated marketplaces that foster entrepreneurial action under the coordination and direction of the platform sponsor (Wareham et al., 2014).
2018	Form two-sided (or multi-sided) markets, and participants in any group develop derivative items (complementary products) with the platform technology (Inoue & Tsujimoto, 2018).

Table 1: Definitions of a business and platform ecosystem

In terms of the platform economy and at the platform level, we suggest that:

*An ecosystem is a platform-based community of interdependent actors embedded freely or on certain conditions for the joint value creation with a core product or service and complementarities (Balanova, 2019).*

### Ecosystem Participants

In the previous paper related to the business ecosystem (Balanova, 2019), a platform ecosystem model was introduced as the one consisting of four main actors: a leading firm, complementors, supply-side users and demand-side users. The model reflects the platform ecosystem architecture. The reversion to the fundamental paper of Jacobides, Cennamo & Gawer (2018) as well as the works of Ben Letaifa (2014), Rong, Wu, Shi & Guo (2015) gave us an impetus to show the scope and position of the platform ecosystem and its correlation between two other groups of ecosystems in the figure below.

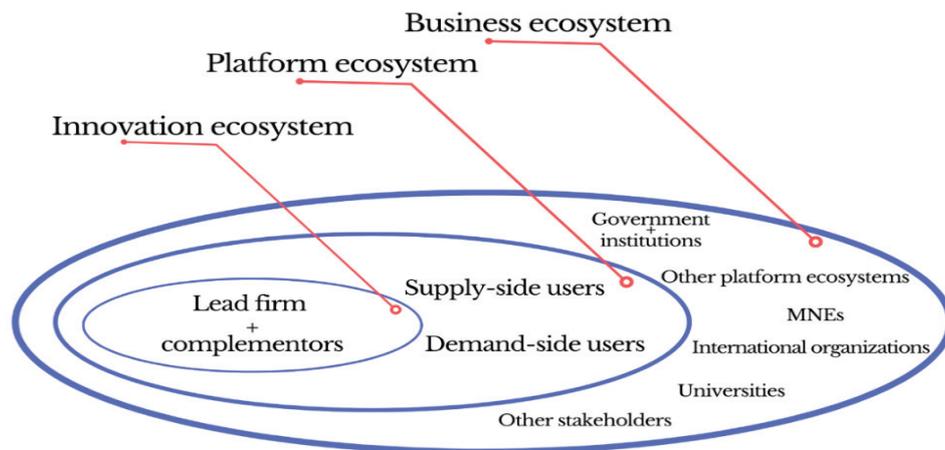


Figure 1: Scope of innovation, platform and business ecosystems

The figure shows that the scope of the business ecosystem is larger and entails more participants than the platform ecosystem, including economies' governments at all levels and their institutions, other competing platforms organized in the platform ecosystem (both competing and the ones belonging

to the leading firm of the business ecosystem), MNEs, international organizations, universities and other stakeholders. The modelling of the business ecosystem, i.e. its major participants (Moore, 2006; Rong, Wu, Shi & Guo, 2015), is still not unified among scholars, but has common understanding reflected in Figure 1 above. It is worth concluding that the business ecosystem is rather a new type of the market than the platform ecosystem. It can be put on par with the traditional market and the hierarchy as organizational structures. “Just as the firm internalized markets under the visible hand of the entrepreneur, the ecosystem internalizes systems of firms and the markets that connect them under the guiding hands of community leaders” (Moore, 2006, p. 73). Community leaders here are the leading firms of the platform ecosystems (other synonyms are *‘platforms sponsors’*, *‘platform owners’*, *‘platform orchestrators’*, *‘platforms’*).

Observing the scope of ecosystems, two logical questions arise. **Question 1.** What can be categorized as a firm — a platform ecosystem or a business ecosystem? **Question 2.** Where is the place of the platform in the ecosystem?

The answer is that both ecosystems can be categorized as a company depending on the scope of the firm and the applied business model(-s). The better answer to the question is providing examples. Analyzing “The Most Innovative Companies 2020” ranking by Boston Consulting Group (BCG), we can define them all as large, technology-driven, innovative business ecosystems. The nuance is that not all of them use platform ecosystems. For instance, Tesla, Unilever or Coca-Cola do not entail platforms inside their ecosystem, while Apple, Alphabet (Google), Amazon, Microsoft, Alibaba Facebook and others do. According to Fuller, Jacobides & Reeves (2019), there is a big myth that a business ecosystem is a digital platform. In reality, they are not always led by platform ecosystem(-s) and cannot be categorized as a larger digital platform, they can be managed by hierarchies or much power of the business ecosystem is given to a traditional market. Figure 1 serves us as a tool to view the scope of both ecosystems and differentiate them. The most successful example of the developed and constantly coevolving business ecosystem is Alibaba Group or simply Alibaba. It orchestrates over 11 platform ecosystems — Taobao, Tmall, Alipay, AliExpress, Alibaba Cloud, Lazada, Youku Tudou, UC Browser, AutoNavi, Koubei and Ele.me — that can be otherwise called platform companies or platforms. Their business ecosystem is constantly growing working on new initiatives and investing in new start-up companies (Zeng, 2019).

Thus, the major outcome of this paper is that a platform ecosystem is not a new type of the market but rather its new community, which can be embedded, collaborate, coevolve and compete in a number of business ecosystems simultaneously. Business ecosystem is a new market and organizational structure, but it is not always platform-based. Both ecosystem types can be firms.

### **Ecosystem vs Market, Hierarchy & Network**

Literature that contrasts the ecosystem and the traditional market, the hierarchy along with the static supply chain is abundant (Moore, 2006; Ben Letaifa, 2014; Davidson, Harmer & Marshall, 2014; Fuller et al., 2019). The ecosystem is often contrasted and compared with networks (Davidson et al., 2014; Li Chen, Yi Mao, & Liao, 2019).

Networking underlies an ecosystem. The network approach to economics dates back to 1890 in the work of the English economist A. Marshall “Principles of Economics” long before the emergence of the concept of an ecosystem as a form of economic interaction. The ecosystem is a new form, meaningfully representing a network, therefore, the properties of the network are reflected in its functioning — the achievement of the competitiveness of individual participants through the joint, complementary functioning of all participants in the created network (Marychev & Tishina, 2011).

Nevertheless, an ecosystem “reflects much more than a network, and it differs fundamentally from a market” (Davidson et al., 2014). According to Zeng (2019), the business ecosystem is synonymous to a ‘smart network’ developing to solve complex problems of its clients. The business ecosystem functions on using two major strategies: network coordination and intellectual data processing, the latter not being intrinsic to traditional networks in terms of the theory of international business and logically making ecosystems going beyond the scope of the network. Moreover, partners of the

ecosystem are autonomous actors from diverse industries possessing complementary assets, while networked firms entail upstream and downstream partners at different stages of the same value chain.

Table 2 based on the analysis of Akbar and Tracogna (2018) and Li et al. (2019) reflects the main differences among existing organizational structures.

Criteria	“Pure” Market	Hierarchy	Network	Platform-based ecosystem
Contract form / Normative basis	Classic (complete) contracts/Arm’s length (spot) transactions	Employment contract	Relational contract	Neo-bartering and platform contracts
Scope of exchange	Typically bilateral	Vertical, multilateral with one common party	Bilateral with one common party, ‘hub-and-spoke’	Multilateral, orchestrated by the platform
Identity of parties	Irrelevant	Relevant	Relevant	Partially relevant
Means / Intensity of communication	Price / Low intensity	Authority, internal processes, rules, hierarchical relations / High intensity	Authority, internal processes, rules, relational relations / Medium intensity	Platform mechanisms, open social networks / Medium intensity
Exchange period/ Uncertainty	One-shot / Low	Unlimited/High	Limited by the contract / low	One-shot to long-term (depending on transaction) / From low to high
Monetary incentives intensity	High-powered	Low-powered	Medium-powered	Medium-powered
Non-monetary incentives	None, limited	Organizational membership, career advancement, status	Reputation, trust, membership of community	Reputation, trust, membership of community
Control intensity	Low	High (administrative system, authority)	High (by the hub firm)	Medium (platform-based)

Table 2: Ecosystems vs market, hierarchy and network firm

The major factor that influenced the emergence of ecosystems along with markets and hierarchies is businesses’ search of innovation.

Ecosystems have their distinctive attributes, namely:

a) multi-entity (ecosystems are made up of groups of companies and are dynamic changing their infrastructure) (Parente, Geleilate, & Rong, 2018; Fuller et al., 2019);

b) dynamic in structure (ecosystems are not isolated, there are multiple dynamic supply chains undergoing shifts due to technological advancements and innovation (Moore, 1993, p. 78) and evolution (players coevolve as they redefine their capabilities and relations to others over time (Fuller et al., 2019);

c) relatively open compared to other organizational structures (ecosystems are more closed compared to markets, but more open compared to hierarchies, i.e. open to the expense of control and closed with respect to new participants or data and more intellectual property (Fuller et al., 2019);

d) modular by type of governance (ecosystems entail networks of shifting, semipermanent relationships linked by flows of data, services, and money (Fuller et al., 2019); the overarching architecture design parameters are set by the lead firm, organizations forming an ecosystem have a large degree of autonomy in how they design, price, and operate their respective modules (Jacobides et al., 2018).

e) complementarity-focused (ecosystems are “nurtured” by the platform’s close and regular partnership with its complementors for local providers, consumers, and complementors in different national ecosystems to survive (Rong, Wu, Shi, & Guo, 2015, p. 294).

It is of note in the conclusion that none of the forms of organizational structure are antagonistic, but, on the contrary, complement each other (Marychev & Tishina, 2011). The shift from a centralized firm to an ecosystem is driven by a shift in strategies and capabilities by enterprises to exploit open innovation opportunities (Van der Borgh, Cloudt, & Romme, 2012). Second, the hierarchical GVC management model works worse in the face of significant and unpredictable technological and market changes (Velu, 2013).

### **Value Creation inside the Platform Ecosystem**

The success of the firm relies on the value created by it. Building on Porter (1980), the firm owns a more competitive advantage than its competitors on the market, if it creates more value than they do.

Platform ecosystem participants need to fulfill certain actor roles within the platform for value to be created. These roles should be clearly viewed early in the platform design by a participatory process, despite their changeable nature, as Van Alstyne, Parker and Choudary argue (as cited in Tura, Kutvonen, & Ritala, 2017).

Both users and platform complementors (e.g. third party content providers) are heterogeneous in their motivation and attributes (Cennamo 2016; McIntyre & Srinivasan 2017). Therefore, platform design needs to address the value creation mechanisms, benefits and value functions from each stakeholder's perspective to define value propositions for each (e. g. Le Masson, Weil, and Hatchuel 2009; Van Alstyne, Parker, and Choudary 2016 as cited in Tura et al., 2017). For example, for the customer this can mean money and time savings, and for the supplier (or a complementor) increased brand awareness and access to additional customers.

Discussing the constituent mechanisms of the value created in platform ecosystems, they fall into 3 major groups:

- 1) A core product or products created by the platform leader (a new business model or even market, technology or data itself, including customer analytics),
- 2) A complementary product/complementarity,
- 3) Network effects or data-enabled network effects.

The **core product**, as a rule, is the company's unique selling proposition (USP). In the case of the pioneering platform companies, this is the creation of a new market. For example, Airbnb created a rental market for individual entrepreneurs, displacing the world's largest hotel chains. Naturally, over time, this USP is duplicated by domestic competitors and overseas. The second type of Platform Company's USP is the technology or information to which it provides access. Information is the content for users (both buyers and sellers of services) inextricably linked to technology. We put a broad sense in the concept of technology and mean client analytics, that is, information received by platform companies from users, which forms their preferences and expectations, as well as data on which technical characteristics of the platform can be improved. The USP has an obvious innovative nature. Adner and Kapoor (2010) underline the significance of innovation in the value creation and capture and claim that innovation depends on the changes in the firm's environment, which 'embed the focal firm within an ecosystem of interdependent innovations' (p. 2). It relates both to the core product itself and complementarities.

Working on the core product, the platform leader responds not only by matching ecosystem participants, but also 'structures the nature of the product or service', works on its development, maintenance and selling. Helfat and Raubitschek (2018) view continued innovation as a consequence of information technologies advances fostering inventing new ways to sell new services and miscellaneous complementary propositions.

A **complementary product** or service is understood as an asset developed and provided by other ecosystem participants, complementors which increase the added value of the main product. A striking example of a complementary product is the introduction of the Qiwi electronic payment system for Russian buyers using the AliExpress trading platform. Qiwi in this case is a complementary product.

The third mechanism of value creation inside the platform ecosystem is **network effects**. Network effects are 'the incremental benefit gained by an existing user for each new user that joins the network'

(Johnson, 2018). **Data-enabled network effects** are distinct from regular network effects, although the earlier tend to make advantages based on the regular ones stronger. According to Hagiwara and Wright (2020), data-enabled network effects are not so dependent on the minimum number of users to generate a positive loop as in the case of regular network effects, but the initial amount of data to start the cycle of learning. Second, they make the firm work constantly to learn more from customer data compared to the regular ones. Third, nearly all the benefits of learning from customer data can be mainly achieved with relatively low numbers of customers.

According to Tura et al. (2017), network effects are a fundamental mechanism of how platform value is created. Whereas, in practice, if the firm has all three mechanisms, its leading firm can claim long-term market presence and competitive growth and the platform ecosystem is nurtured by dynamic competitive advantages.

### **Ecosystem-specific advantages come to play**

It was earlier mentioned that business ecosystems can be platform-based, but it is not its key condition. The mechanisms of value creation inside the platform ecosystem described above are applicable to the business ecosystem, but it should be taken into account that a platform ecosystem (or a platform company here) is not an isolated community that operates independently. Getting embedded into one or several business ecosystems, it is not only its firm-specific advantage (FSA) — a core product (a new business model or even market, technology or data itself, including customer analytics) — that work as a competitive tool. According to Li et al. (2019), “platform-centric ecosystems’ need advantages arising from a greater range of external resources, positive externalities among their activities, and effective governance that keeps ecosystem participants aligned with the interests of the ecosystem” (p. 1455). Thus, the implication of ecosystem-specific advantages (ESAs) arises in the theory of international business.

Li et al. (2019) indicate three components of the ESA, namely “resources — structure — governance”.

1. Heterogeneous resources and distributed innovation contributed by ecosystem participants. The greater the amount of complementary resources, the greater the ecosystem’s value.
2. Cooperation among ecosystem participants. Ecosystem users prefer greater supermodular complementarity to homogenous or unrelated activities.
3. Elaborated governance type (formal rules, subsidies, gatekeeping, etc.) providing access, support, guidance, and incentives to various ecosystem participants.

## **DISCUSSION**

The object of this paper is of high relevance and needs further investigation. Competition among other platform ecosystems in the business ecosystem, the power of each stakeholder in the business ecosystem, its national and international regulation, the nature and evolution of ESAs when platform-based business ecosystem internationalizes are the directions for further investigation.

## **CONCLUSION**

Thus, several concluding remarks should be made. First of all, it should be emphasized that business ecosystems are the new organizational structure introduced in the line with markets, hierarchies and networks. They can be platform-based, but it is not a constant and uniform condition. Platform ecosystems in their turn are platform-based communities of interdependent actors embedded freely or on certain conditions for the joint value creation with a core product or service and complementarities. Both ecosystems can be categorized as firms. The value of the platform ecosystem is achieved by 3 major mechanisms, namely a core product or products created by platform leaders, complementarities, and network effects or data-enabled network effects. The platform-based business ecosystem possesses not simply FSAs, but ESAs.

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# THE EVOLUTION OF FOREIGN DIRECT INVESTMENT IN ALBANIA AND THEIR IMPACT ON THE ECONOMY

Najada Murataj\*

**Abstract.** *The focus of this study is the analysis of Foreign Direct Investment (FDI) and macroeconomic factors that affect the performance of these investments such as: technological development, free competition, market liberalization. FDI is the main source of external financing in developing countries as well as Albania. Foreign investment can increase fixed capital and help balance payments. FDI has the potential to generate employment, increase productivity, transfer capabilities and new technology, increase exports, and contribute to the long-term economic development of developing countries.*

*In this paper we will study the evolution of foreign direct investment according to the main economic activities in our country taking into account the transition from a centralized economy to a decentralized economy and a free trade. In terms of time FDI has had a non-development uniform in Albania starting from the communist period (1945–1990), where statistics and information sources show that they were almost 0 %. An important approach is the role of FDI in a country's economy given that they are a strategic priority of governments, linking these investments to international trade based on "currency strength".*

*In host countries the effects of FDI are very important both economically and politically and socially. Benefits which do not come automatically but depend on the timely realization of these investments which bring the necessary capital, increase the productivity of the economy, increase employment and also affect the well-being of the population.*

*Through a statistical analysis with empirical data which show the macroeconomic relationship between FDI and economic growth, we have managed to prove that there is a strong link between FDI and Economic Growth, so FDI positively influences the economy of countries in transition.*

**Keywords:** *Capital, Statistical Analysis, Decentralized Economy, Economic Growth, Employment, Foreign Direct Investment, Macroeconomic Factors.*

**Organization of the study:** The study begins with detailed information on the Evolution of Foreign Direct Investment in Albania over the years, FDI capital stock by investor country of origin and main economic activities. In the second part we will present the distribution of FDI by districts and the connection of Foreign Direct Investment with other economic variables as well as from the assumed monopolistic point of view. In this paper we will address 2 main theories:

FDI theory based on the strength of the currency and FDI theories related to international trade.

In the third part we present a statistical analysis. The aim is to provide a more complete picture of the link that exists between FDI and economic growth

**Methodology:** This paper focuses on the analysis of foreign direct investment in Albania and their economic, social and political impact. In this study 2 basic methods are used:

1. Theoretical treatment method (information collection).
2. Method of analysis (research method, hypothesis selection, study and data analysis).

For the compilation of this study, an extensive literature has been used, which consists of materials and works of many foreign and domestic authors, in studies of regional and national character. Analytical evaluation, research and information gathering, international reports, journals and published research. This phase involves the creation of the database, which served to identify and evaluate the information. The data were then processed and presented in graphical and tabular form.

## FDI IN THEORETICAL PERSPECTIVE

Foreign Direct Investment is one of the key elements of a country's economy that plays a special role in international integration by creating direct, long-term and stable links between countries. Through these links they allow economies to promote their products in international markets. FDI is considered as an additional source of financing for investments, where by using the right policies they serve as a means of incentive for development. From a theoretical point of view we know that investments are part of the GDP (GDP) in the national account of a country, namely the equation:

$$Y = C + I + G + (X - M) \text{ where } I \text{ are Investments plus Foreign Investments.}$$

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- Classification of foreign direct investment

The classification of FDI depends on the perspective from which they are judged. There are two main points of view:

- a) From the investor's point of view
- b) From the point of view of the host country
  1. From the investor's point of view they are classified into: vertical, horizontal and conglomerates.
    - **Vertical IHD**

This type of investment is more prevalent in the secondary and tertiary sector such as manufacturing industries. Their peculiarity is that it is transferred outside one of the stages of the production process. This stimulates trade across borders (within the company) and increases the tendency of branches to export.

- **Horizontal IHD** Produced abroad (in the host country) what is also produced in the parent company. So the same production standard as in the country of origin is duplicated abroad. This type of foreign investment represents the most common typology of FDI.
- **IHD conglomerate** These types of investments are a mixture of vertical and horizontal ones which also include investments of various natures in the host countries.

2. From the point of view of the host country, they are divided into: substitute import FDI, increasing export FDI, government-initiated FDI.

- **Import substitute FDI** These types include the production of goods that were originally imported into the host country. This type of FDI is influenced by the market, transportation costs, and market barriers.
- **Increasing export FDI** They are mainly related to the search for raw materials or even intermediate goods.
- **Government-initiated FDI** This type has to do with government policies which provide incentives for foreign investment and is done in order to eliminate the deficit from the balance of payments.

Based on the direction of investment, FDI is divided into two types: internal and external. Domestic investments are those investments made by the foreign entrepreneur in the reporting economy, ie the stock entering at a given point in time refers to all direct investments by non-residents in the reporting economy.

Të Foreign investments are investments made by a local entrepreneur in another country, different from that of residence. Outflows are those investments of the reporting economy abroad.

### Year Important event in terms of the evolution of FDI in Albania

Year	Year Important event in terms of the evolution of FDI
1990	The law of 1976 was abolished that prohibited any form of FDI in Albania and we have the creation of joint ventures between Albanian and foreign companies.
1991–1992	Establishment of a stabilization program consisting of price liberalization, balancing the budget deficit, controlling the growth of money supply and liberalizing foreign trade
1995	The law on concessions was approved, which created some facilities in the form of «Build, Operate, Transfer»
1995–1996	Pyramid schemes were in full swing influencing FDI
1997	During 1997 the country achieved the largest decrease in FDI by 47% due to institutional chaos
1998–1999	The increase in FDI resulted from the privatization of state-owned enterprises
2004	The sale of the Savings Bank which was acquired by Raiffeissen Bank in Austria marked an increase in FDI
2005	Almost all small and medium-sized state-owned enterprises were privatized
2011	The Albanian economy has maintained an upward trend but this can not be said about foreign investment
2014	Foreign investments begin to decline in Albania

Table 1: Year Important event in terms of the evolution of FDI in Albania

## **Macroeconomic and Microeconomic effects of FDI**

### **• Macro**

Economic effects can be seen in both microeconomic and macroeconomic perspectives by affecting variables such as the output / product of a firm, but also the whole country, balance of payments and even market structure. The theory recognizes that the arrival of companies Foreign directives can improve competition or even worsen it by attempting non-competitive forms, due to their dominant position. But the most important macroeconomic point of view is that of linking FDI with output / output, ie economic growth of the host country.

Theories of growth and economic development of the host country, evidence of capital accumulation, population growth, technological progress and the discovery of new natural resources. However, as the driving factor of economic growth and development of the host country, the accumulation of capital is evidenced. Specifically, the theory of endogenous growth underlines the effects of exports as a factor which influences the establishment of a sustainable and long-term economic growth, allowing technological and dynamic innovations from abroad, especially from the countries of origin of FDI (/ lucas, 88, Romar 86.89, Grossman and Helpman, 91 Edwards, 92).

FDI is seen as one of the potential beneficiaries of economic growth especially for emergency countries and is sometimes needed to give a boost to a country's economic growth (Adewumi 2006). FDI can help the host country especially in the transfer of technology, and for its use also for domestic investment, transfer of know-how and managerial or professional skills. In his study (Krkoska 2001), he emphasizes the importance of spillover in the economy of the host country, and the replacement of devalued capital of that country with the new foreign direct investment capital, which also increases the productivity of the host country.

### **• Micro**

In addition to macroeconomic effects, the theory (Moose, 2001) also recognizes effects on employment and wages. Specifically:

*1. They directly increase employment by introducing new benefits, or indirectly by stimulating employment according to different distributions. So employment can increase in different fields as well as in different cities.*

*2. They can preserve employment especially if investments are made in existing enterprises on the verge of crisis, bankruptcy, etc., so in "sick", by restructuring or acquiring these types of companies.*

*3. FDI can reduce employment through disinvestments and restrictions on production facilities. However, practical evidence shows that the impact of FDI on employment is low.*

**Vaitos (1976)** analyzed the effects of multinational corporations in terms of scale, concentration, and transnationality. But last but not least, it's worth mentioning the effect on productivity. FDI generally tends to increase productivity and reduce unit costs if:

*1. They are export promoters and destined for a very large global market from where economies of scale can be rooted.*

*2. Conditions and policies allow the installation of plans designed to achieve full-scale savings.*

## **FDI theory based on the strength of the currency**

Aliber (1970) made one of the first attempts to explain FDI based on the power of currency. He presented his theory of foreign direct investment based on the relative strength of different currencies. He conveyed his theory as to the differences in the strength of currencies in the host and source countries. He proved that the weaker currencies compared to the stronger currencies of the invested countries had a higher capacity to attract FDI, to take advantage of changes in the market capitalization rate. Aliber tested his hypotheses and found the matching result between FDI in the United States, England and Canada.

Dunning (1981) initially proposed four phases for the development path: Phase I is involved with pre-industrialization without FDI. In phase II, as a result of government intervention, some location-specific advantages are created and FDI begins to increase. In Phase III, domestic firms have gained ownership advantages, and domestic FDI wages fall at the same time as external ones begin to rise.

In phase IV the countries become foreign investors. In 1986, Dunning added Phase V to explain the convergence and balancing of FDI stocks in most developed countries.

### Foreign Direct Investment By Origin 2012–2018

Milion euro

Region / Country	2012	2013	2014	2015	2016	2017	2018
Austri	146.72	186.42	220.54	353.69	443.60	386.61	377.94
Gjermani	52.39	66.18	74.45	83.84	83.60	92.06	106.86
Greqi	520.56	565.61	559.63	601.05	507.45	766.54	1,070.43
Itali	220.10	321.46	347.86	386.79	427.36	124.77	(132.82)
SHBA	72.44	74.91	24.10	(97.72)	(47.23)	35.89	51.50
Liban	29.72	40.45	36.07	28.05	29.36	39.27	29.96
Turqi	154.05	189.70	235.12	186.66	187.78	234.77	279.34
Hollande	273.88	187.90	207.33	222.67	253.05	297.38	350.01
Ceki	—	0.01	55.38	(11.56)	(15.22)	(220.21)	(307.53)
Other	359.72	428.52	556.34	670.94	1,514.93	1,284.24	720.97
<b>TOTAL</b>	<b>1,829.58</b>	<b>2,061.15</b>	<b>2,261.44</b>	<b>2,435.97</b>	<b>3,399.90</b>	<b>3,261.53</b>	<b>2,854.19</b>

Table 2: Foreign Direct Investment By Origin 2012–2018

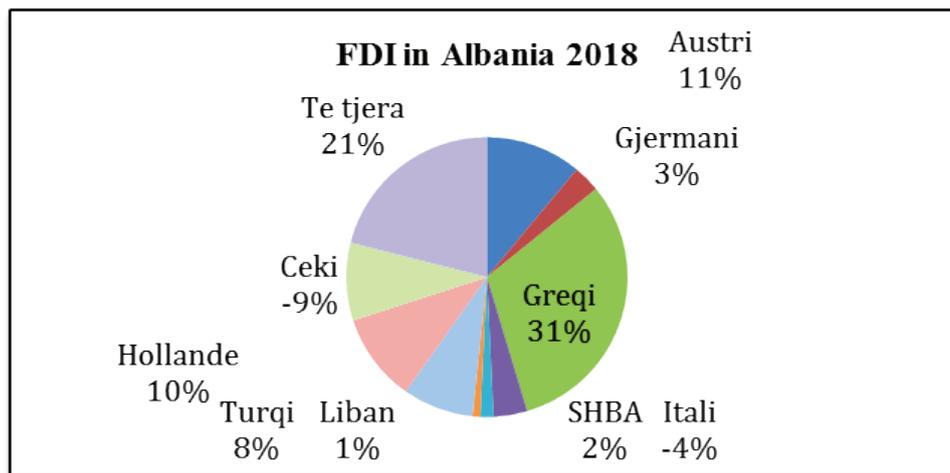
Source: Bank of Albania

### FDI theories related to international trade

The expansion of FDI in the last two decades and the continuous increase in the production of multinational firms has changed the structure of international trade to a great extent. In fact, about a third of all international trade takes place between domestic firms. A number of attempts have been made to integrate FDI theory with international trade theory. Smith (1776), followed by Ricardo (1817) the first to give explanations of trade flows between nations. Smith developed his theory based on the absolute difference of costs. This theory is based on the use of a factor of production-labor. Theories assuming the immobility of work across borders were not helpful in providing explanations for international capital movements.

### FDI stock in Albania by main economic activities

The number of foreign companies and joint-ventures according to INSTAT, at the end of 2011, numbered up to 3572 enterprises, representing 3.2 % of the total number of active enterprises in the country. A division of these foreign enterprises by economic sectors is; 32 % in the trade sector, 25 % in services, 23 % in industry, 11 % in construction, 6 % in transport and traffic, 3 % in hotels, cafes and restaurants and 1 % in agriculture and fishing. In some activities, branches of foreign companies make up the majority of these companies, e. g. more than half of them operate in oil extraction, more than a third of them in the ancillary sector for the production of transport equipment, electrical products and machinery, for oil, gas and energy. These are activities with high capital investment, where locally owned SMEs are rare. While in other activities, such as retail, hotels and restaurants, the presence of local SMEs is predominant in number. In the breakdown of FDI by economic activity, there is a high concentration of investments in the services sector.



They occupy the largest percentage of the FDI stock. This fact is estimated to be related to the privatizations that have characterized this sector over the years. Privatization of almost the entire banking industry by banks and foreign investors has resulted in a large capital inflow through which banks were restructured and expanded lending activity.

### Impact of FDI on economic growth

In recent years, policymakers, especially in developing countries, have come to the conclusion that foreign direct investment (FDI) is needed to grow a country's economy. It is claimed that FDI can increase employment, bring new technological developments to the host country and improve the economic situation of the country in general.

There are different views from researchers regarding the contributions of FDI to economic growth, based on theoretical and analytical data. Some see FDI as a very important tool for economic growth, especially in less developed countries, but some scholars claim that the contribution of FDI to economic development is not as pronounced as many people believe.

However, some scholars think that FDI has a positive contribution to the economic development of the host country. There has been a consensus on how FDI affects a country's economy and according to Lall (2002) it was concluded that the contribution of FDI to the economy depends on many factors and this changes over time, from one country to another.

Saltz (1992) has examined the effect of FDI on economic growth for third world countries. The results of his empirical tests show that there is a negative correlation between the level of FDI and economic growth during the period 1970–1980. His explanations agree with those of Bos, Sanders and Secchi (1974), that the level of production of a country will be stuck in cases of FDI, where monopolies and price transfers may occur, which will cause labor under-utilization, which will cause a delay in the level of domestic consumption demand and eventually lead to an economic stalemate.

Borensztein, De Gregorio and Lee (1998) examined the relationship between FDI and economic growth in developing countries. They showed that FDI affects economic growth when the host country has a minimum human capital stock threshold. Their results also showed that the main way FDI affects economic growth is by increasing technological progress in host countries.

Alfaro, et al. (2002) examined whether more developed countries, markets are able to benefit and increase the economic situation by attracting FDI. They argued that the lack of development of internal financial markets may reduce the ability of the domestic economy to benefit from Their results showed that for most of the 71 developing countries FDI has had a negative effect on economic growth, confirming their hypothesis that insufficient development of markets and financial institutions could reduce the effects. positive FDI.

Campos and Kinoshita (2002) examined the effects of FDI for the period 1990–1998, for 25 countries of the Soviet Union, Eastern Europe, Central and Eastern Europe. In these countries FDI was a pure transfer of technology. The main results showed that FDI has had a significant positive effect on the economic development of each selected country. These results were consistent with the theory that it equates FDI with technology transfers that the host country benefits from.

Based on studies conducted by various authors and the existing conditions of the economies of transition countries in Europe, a positive relationship between FDI and the economic growth of the host country is predicted.

### Hypothesis Testing and Methodology

Based on previous studies, we have developed our testable hypotheses. Our first hypothesis is about the assumption that FDI represents a transfer of technology and knowledge to the host country, therefore ensuring economic growth in the host country, Testing of Hypothesis:

**Baseline Hypothesis**  $H_0$ : A positive relationship between FDI and host country economic growth, measured by GDP (Gross Domestic Product) is expected.

The Alternative Hypothesis is based on the assumption that FDI causes distortions in price factors, the transferable price and poor trade conditions for the host countries, therefore it would lead to a reduction in the economic growth of this country.

**Alternative Hypothesis**  $H_1$ : It is expected that there is a negative relationship between FDI and the economic growth of a host country or no relationship between them, measured by GDP.

In this analysis we have collected data on GDP and net inflows of foreign direct investment (FDI) during the years 1995–1998. The analysis includes 17 countries in transition such as: Albania, Azerbaijan, Belarus, Bosnia, Georgia, Kazakhstan, Republic of Kyrgyzstan, Latvia, Lithuania, Moldova, Romania, Russia, Slovenia, Tajikistan, Turkmenistan and Uzbekistan. These 17 countries have been selected from 27 countries in transition based on available data. World Bank and International Financial Statistics of the International Monetary Fund.

We have implemented a simple proportional model based on our data, In particular we have estimated the statistical equation.

$$Y_{it} = \beta X_{it} + E_{it}$$

$Y_{it}$  — % of the economic growth of the country in the year t  
 $X_{it}$  — % occupying FDI in the GDP of the host country in year t

$\beta$  — presents the hypothesis that per capita income for poor countries tends to grow faster than richer economies

$E_{it}$  — the term of concern of a country in year t

Country Name	% Average economic growth $Y_{it}$ 1996–1998	% Average of net FDI in GDP $X_{it}$ 1996–1998
1, Shqipëria	3,35	2,30
2, Azerbajxhan	5,70	22,60
3, Bjellorusi	7,17	0,58
4, Bosnje	46,19	67,73
5, Gjeorgjia	8,07	0,21
6, Kazakistan	0,10	2,99
7, Republika e Kirkizës	6,37	8,28
8, Letonia	5,28	-21,06
9, Lituania	5,70	4,33
10, Moldavia	-3,60	11,51
11, Mongolia	3,30	0,003
12, Rumania	-2,52	0,52
13, Rusia	-2,47	0,62
14, Slovenia	3,97	0,63
15, Taxhikistani	0,87	20,99
16, Turkmenistani	-3,67	0,60
17, Uzbekistani	2,87	3,65

Table 3: % Average Economic Growth and FDI

The Pearson correlation coefficient measures the relationship that exists between the two variables  $x$  and  $y$ . The coefficient varies from  $-1$  to  $1$ . If the coefficient is in the negative zone then there is no correlation between the two variables, if the coefficient is in the positive zone there is a strong correlation between the two variables.

Pearson Correlation Coefficient Formula

$$R = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2][N \sum y^2 - (\sum y)^2]}}$$

ku  $N=17$

- Pearson correlation coefficient: **0.787** indicates that the relationship between the 2 variables is important
- Pearson correlation coefficient: **-0.095** indicates that the relationship between the 2 variables is insignificant if they leave Bosnia out of the analysis.

**STATISTICAL ANALYSIS**

- $H_0 : \beta \neq 0$ , indicates that there is a relationship between the two variables
- $H_0 : \beta = 0$ , indicates that there is no relationship between the two variables
- $\alpha = 0.05$

With these data we perform the statistical test which is:  $T_0 = \frac{b_1}{S_{b_1}} = \frac{0.48}{0.24} = 2$

x	y	x <sup>2</sup>	y <sup>2</sup>	x * y
2,30	3,35	5,29	11,2225	7,705
22,60	5,70	510,76	32,49	128,82
0,58	7,17	0,3364	51,4089	4,1586
67,73	46,19	4587,353	2133,5161	3128,449
0,21	8,07	0,0441	65,1249	1,6947
2,99	0,10	8,9401	0,01	0,299
8,28	6,37	68,5584	40,5769	52,7436
-21,06	5,28	443,5236	27,8784	-111,197
4,33	5,70	18,7489	32,49	24,681
11,51	-3,60	132,4801	12,96	-41,436
0,003	3,30	0,000009	10,89	0,0099
0,52	-2,52	0,2704	6,3504	-1,3104
0,62	-2,47	0,3844	6,1009	-1,5314
0,63	3,97	0,3969	15,7609	2,5011
20,99	0,87	440,5801	0,7569	18,2613
0,60	-3,67	0,36	13,4689	-2,202
3,65	2,87	13,3225	8,2369	10,4755
$\Sigma x = 126,483$	$\Sigma y = 86,68$	$\Sigma x^2 = 6231,349$	$\Sigma y^2 = 6231,349$	$\Sigma x * y = 3222,122$
$\bar{x} = 7,440176$	$\bar{y} = 5,09882$			
$\bar{x}^2 = 55,35623$	$\bar{y}^2 = 25,998$			

$$\gg b_1 = \frac{s_{xy}}{s_{xx}} = \frac{\Sigma x*y - n*\bar{x}*\bar{y}}{\Sigma x^2 - n*\bar{x}^2} = \frac{3222,122 - 17*7,440176*5,09882}{6231,349 - 17*55,35623} = 0,48$$

$$\gg s_{b_1} = \frac{\sqrt{S^2}}{\sqrt{s_{xx}}} = \frac{\sqrt{302,253}}{\sqrt{5290}} = \frac{17,38}{72,7} = 0,24$$

$$\gg S^2 = \frac{1}{n-2} * SKG = \frac{1}{15} * 4533,807 = 302,253$$

$$SKR = \frac{(s_{xy})^2}{s_{xx}} = 1255,576$$

$$SKG = SKT - SKR = 4533,807$$

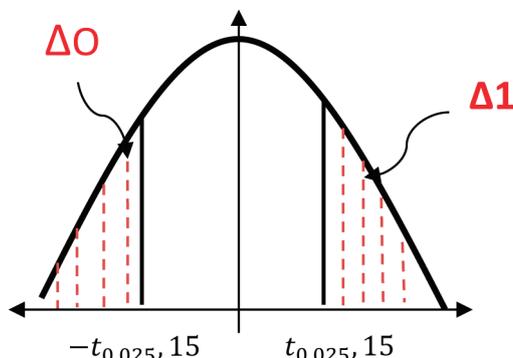
$$SKT = S_{yy} = \Sigma y^2 - n\bar{y}^2 = 6231,349 - 17 * 25,998 = 5789,383$$

**Risk area:**

$\Delta O$ -Admission Zone, if  $T_0 \in \left] -t_{\frac{\alpha}{2}, n-2} ; t_{\frac{\alpha}{2}, n-2} \right[$ , then the Basic Hypothesis is accepted,  $H_0$  hence there is a relationship between the two variables x and y.

$\Delta 1$ -Rejection Area if  $T_0 \in ]-\infty; -t_{\frac{\alpha}{2}, n-2} [ \cup ] t_{\frac{\alpha}{2}, n-2}; \infty + [$ , then  $H_0$  is rejected and Alternative Hypothesis  $H_1$  is accepted, so there is no relationship between the two variables x and y. In this case  $\Delta O : ] -2.131; 2.131 [$  dhe  $T_0 = 2 \in \Delta O$ , tranzicion.

**Conclusion:** This shows that the basic hypothesis is accepted and there is a link between FDI and Economic Growth, so FDI positively influences the economies of countries in transition.



## CONCLUSIONS

- FDI is the main source of external financing in developing countries as well as Albania. Foreign investment can increase fixed capital and help balance payments. FDI has the potential to generate employment, increase productivity, transfer capabilities and new technology, increase exports, and contributes to the long-term economic development of developing countries.
- The beginning of the 1990s for the country was the end of almost half a century under communist rule. In the beginning of these years the number of FDI was relatively small, but after the 2000s they began to grow significantly, this happens because of stabilization programs and other incentives that our country has used to enable the arrival of foreign investors in Albanian territories. The maximum increase was recorded in 2009.
- In the period 2012–2018 FDI in Albania originates mostly from Greece, investments that have increased from year to year, followed by Italy, Austria, Turkey, etc. So investors are not only from neighboring countries, but also from other countries.
- Regarding the economic sectors in the years 2012–2018, the main part was occupied by the monetary and financial intermediation sector, in 2013 the extractive industry and transport, storage and communication.
- Foreign investment having a direct effect on the domestic workforce (adding more employment opportunities and higher pay); on consumers in the form of lower prices and on the government through higher tax revenues, should be the focus of the latter for the design and implementation of policies that stimulate the attraction of investors.
- In addition to the empirical review of the macroeconomic link between FDI and economic growth, we conducted a statistical analysis, which shows that there is a link between FDI and Economic Growth, FDI positively influences the economies of countries in transition.

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# FACTORS DETERMINING THE ECONOMIC GROWTH IN BULGARIA, ROMANIA AND CROATIA: COMPARATIVE ANALYSIS

Nikolay Velichkov\*

**Abstract.** *This paper focuses on an empirical assessment of the impact of the fundamental factors determining the economic growth in Bulgaria, Romania and Croatia over the 2000–2019 period. The study is based on the Cobb-Douglas production function, in which the rate of economic growth is defined as dependent on changes in labor, capital and total factor productivity. The empirical results show that the various factors for the GDP dynamics have a variable effect over time, with certain peculiarities between the studied countries.*

**Keywords:** *capital, economic growth, labor, total factor productivity.*

**JEL Classifications:** *O47, E25, E22, E24.*

## INTRODUCTION

The analysis of the GDP dynamics and its determining factors occupy a central place within the research in the field of macroeconomics. In general, these studies can be divided into two main groups. The first group focuses on changes in macroeconomic activity which are provoked mainly by changes in aggregate demand. The second group focuses on the dynamics of aggregate production, which is presented as dependent on changes in aggregate supply. The existing theoretical and empirical literature within the two groups is extremely diverse. This heterogeneity is related both to the differences in terms of the factors determining the dynamics of aggregate production and to the time horizon of the conducted studies and the methodological approaches used in them (Raleva, 2013; Pirimova, 2001).

When interpreting economic growth in accordance with the logic of the second group of studies, it is traditionally presented as dependent on labor, capital and total factor productivity. In this regard, the purpose of this study is to assess the impact of these fundamental factors on the GDP dynamics in Bulgaria, Romania and Croatia for the 2000–2019 period, highlighting the existing similarities and differences between them.

## METHODOLOGY

The paper uses the tools of economic growth accounting, applying the Cobb-Douglas production function (Solow, 1956). It has the following general form:

$$Y = A \cdot L^{\beta} \cdot K^{\alpha}, \quad (1)$$

where  $Y$  — GDP level;

$L$  — labor amount;

$K$  — capital amount;

$A$  — total factor productivity;

$\alpha$  — coefficient of elasticity of GDP from capital;

$\beta$  — coefficient of elasticity of GDP from labor.

The existence of a constant return to scale is assumed, which means that the sum of the coefficients of elasticity equals one:

$$\alpha + \beta = 1 \quad (2)$$

In transforming the Cobb-Douglas production function, the GDP growth rate is presented as the sum of three components — the contribution of labor, the contribution of capital and the contribution of total factor productivity:

$$\frac{\Delta Y}{Y} = \alpha \frac{\Delta K}{K} + \beta \frac{\Delta L}{L} + \frac{\Delta A}{A} \quad (3)$$

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where  $\frac{\Delta Y}{Y}$  — GDP growth rate;

$\alpha \frac{\Delta K}{K}$  — contribution of capital;

$\beta \frac{\Delta L}{L}$  — contribution of labor;

$\frac{\Delta A}{A}$  — contribution of total factor productivity.

The contributions of the main factors of production - labor and capital, are estimated on the basis of their growth rates and coefficients of elasticity. The calculation of the coefficients of elasticity  $\alpha$  and  $\beta$  is based on the expenditure structure of the GDP. The coefficient  $\alpha$  is obtained as a quotient of gross capital formation (GCF) and absorption (AB), and the coefficient  $\beta$  is obtained as a quotient of final consumption (FC) and absorption:

$$\alpha = \frac{GCF}{AB} \quad (4)$$

$$\beta = \frac{FC}{AB} \quad (5)$$

The calculation of the coefficients  $\alpha$  and  $\beta$  by using the absorption as an element of GDP allows the assumption of a constant return to scale and the sum of the two coefficients to be equal to one.

Chain growth rates are used to assess labor and capital dynamics. The labor factor is measured by the number of hours worked. The rate of capital growth is presented as a quotient of the accumulation rate and the capital ratio reduced by the depreciation rate. The analysis allows for the invariance of the capital ratio over time, as it is defined as the quotient of the gross capital formation and the change in GDP, allowing the equality of the marginal and average productivity of capital.

The calculation of the capital ratio was made for the years up to the crisis of 2009, in which no significant macroeconomic changes were observed. Its average value for Bulgaria is 2.4. The value obtained is close to the results of other empirical studies (Raleva, 2013; Raleva, 2017; Minasyan, 2008). In Romania the capital ratio is lower than in Bulgaria, while in Croatia a higher average level of the capital ratio is observed compared to that in Bulgaria.

With respect to the depreciation rate, a value of 7 percent is applied, and in empirical studies a value of 5 or 7 percent is usually allowed (Raleva, 2013; Raleva, 2017; Minasyan, 2008; Ganey, 2005). The choice of a higher depreciation rate is explained by the faster, above all, moral depreciation of capital in contemporary conditions.

The contribution of total factor productivity to economic growth rates is defined as the residual value (Solow's remainder) by deducting labor and capital contributions:

$$\frac{\Delta A}{A} = \frac{\Delta Y}{Y} - \alpha \frac{\Delta K}{K} - \beta \frac{\Delta L}{L} \quad (6)$$

In the most general sense, the contribution of total factor productivity reflects the influence of other factors of GDP growth outside labor and capital which are primarily the technological level and the accumulation of human capital.

It should be noted that certain weaknesses are inherent in the presented methodology. Some of these weaknesses are directly related to the basic principles of the concept of economic growth accounting. Other weaknesses relate to the way in which specific variables are constructed. In this regard, criticism can be made regarding the measurement of coefficients of elasticity, the method of measuring capital growth, the assumption of constancy of the capital ratio over time, the choice of depreciation rate and others. Therefore, the obtained empirical assessments should not be absolute as a research result, but should be accepted as indicative.

## EMPIRICAL RESULTS

The obtained empirical estimates of the elasticities show that over the studied time period the average values of the coefficients  $\alpha$  and  $\beta$  in Bulgaria and Croatia are 0.22 and 0.78, respectively, and in Romania — 0.24 and 0.76 (Table 1). In Bulgaria there are larger fluctuations in the values of elasticities compared to those in Croatia and Romania, as the difference between their maximum and minimum value for Bulgaria is 0.13. In Croatia, this discrepancy is the lowest. The highest value of the coefficient  $\beta$ , respectively the lowest value of the coefficient  $\alpha$ , was observed in all three countries in 2008. The situation is opposite in the first year of the period when the elasticity of labor is highest for all three countries, and capital elasticity is the lowest.

Year	Bulgaria				Romania				Croatia			
	$\alpha$	$\beta$	$\frac{\Delta K}{K}$	$\frac{\Delta L}{L}$	$\alpha$	$\beta$	$\frac{\Delta K}{K}$	$\frac{\Delta L}{L}$	$\alpha$	$\beta$	$\frac{\Delta K}{K}$	$\frac{\Delta L}{L}$
2000	0.18	0.82	0.98	-4.09	0.19	0.81	2.19	-0.61	0.19	0.81	-0.71	-0.27
2001	0.20	0.80	1.95	-0.05	0.21	0.79	3.63	-1.09	0.20	0.80	-0.33	-0.69
2002	0.19	0.81	1.60	0.19	0.21	0.79	3.36	-9.45	0.23	0.77	0.69	0.74
2003	0.20	0.80	2.25	2.29	0.22	0.78	3.83	-1.66	0.25	0.75	1.75	2.43
2004	0.21	0.79	2.82	4.04	0.22	0.78	4.31	-1.40	0.25	0.75	1.37	0.85
2005	0.24	0.76	4.63	2.39	0.21	0.79	3.71	-0.82	0.25	0.75	1.40	0.91
2006	0.27	0.73	6.43	3.06	0.24	0.76	5.83	-0.11	0.27	0.73	2.08	3.19
2007	0.28	0.72	7.09	3.20	0.27	0.73	7.64	1.66	0.27	0.73	2.04	3.18
2008	0.31	0.69	8.49	4.78	0.29	0.71	8.46	-1.61	0.28	0.72	2.56	2.12
2009	0.26	0.74	4.96	-4.46	0.26	0.74	5.70	-4.69	0.24	0.76	0.82	-0.81
2010	0.22	0.78	2.49	-3.96	0.25	0.75	5.67	-1.90	0.21	0.79	-0.43	-3.13
2011	0.22	0.78	2.00	-2.28	0.27	0.73	6.14	-1.86	0.20	0.80	-0.80	-4.08
2012	0.21	0.79	2.22	-2.45	0.26	0.74	5.63	-0.63	0.19	0.81	-1.15	-4.42
2013	0.21	0.79	1.84	-0.40	0.25	0.75	4.89	-1.16	0.19	0.81	-0.97	-3.56
2014	0.21	0.79	2.04	0.31	0.25	0.75	4.57	-0.02	0.19	0.81	-1.11	1.68
2015	0.21	0.79	1.82	0.37	0.25	0.75	4.74	-1.64	0.21	0.79	-0.59	-2.17
2016	0.20	0.80	0.96	0.45	0.23	0.77	3.93	0.17	0.21	0.79	-0.46	0.67
2017	0.21	0.79	1.33	1.77	0.23	0.77	3.94	1.08	0.22	0.78	-0.16	1.85
2018	0.22	0.78	1.91	-0.03	0.22	0.78	3.64	0.15	0.23	0.77	0.29	1.88
2019	0.22	0.78	1.85	0.38	0.22	0.78	3.71	0.19	0.23	0.77	0.05	4.58

*Table 1: Coefficients of elasticity and growth rates of labor and capital*

*Source: Author's calculations based on Eurostat data*

The dynamics of labor and capital are characterized by certain specifics over time. The period up to 2008 is a typical trend of increasing capital growth rates in Bulgaria, Romania and Croatia. The highest capital growth was observed in 2008, with an increase in Bulgaria and Romania of nearly 8.5 percent. The observed maximum capital growth in Croatia is about 70 percent lower than in Bulgaria and Romania. Bulgaria also has the highest variability in the growth rates of capital, as the deviation between the maximum and the minimum for the period until 2008 is 7.5 percentage points.

The positive trend in the dynamics of capital was interrupted in the crisis year of 2009, when a significant decline in the rate of capital growth was observed in all three countries. Over the 2009–2019 period, the capital growth rates remained positive in Bulgaria and Romania, while in Croatia in most years negative ones were observed. It should be noted that the average capital growth rate in Romania during this period is about 2.2 times higher than in Bulgaria. Given the prevailing negative capital growth rates in Croatia, the average growth there is negative. Typical for the second time period are the weaker fluctuations in the capital dynamics in all three countries compared to those reported in the previous period.

The dynamics of labor shows higher variability compared to the amplitudes of capital, and this applies both to the entire time period and to the separate intervals before and after 2008. During the first interval in Bulgaria and Croatia the average growth rate of labor is positive, while in Romania it is negative. For the period after 2008, the negative values of the growth rates of labor have a dominant role in all three countries, as the average rate of change has similar values in the studied countries. During this period, the strongest decline in labor in Bulgaria and Romania was in 2009, and in Croatia — in 2012. In the specific values of these declines there are also significant similarities, ranging between 4.4 and 4.7 percent.

The obtained estimates of the contribution of labor, capital and total factor productivity to economic growth are also indicative of the existence of certain peculiarities over time (Table 2). The period up to 2008, which shows relatively high positive GDP growth, is characterized by a tendency to limit the relative importance of the contribution of total factor productivity to the growth of aggregate production. In Bulgaria, the weight of its growth decreased from 165.4 percent in 2000 to 4.3 percent in 2008. The observed decrease in Croatia is respectively from 112.6 percent to 18.4 percent. For Romania, this trend is relatively less pronounced. Over the 2000-2005 period, the contribution of total factor productivity in Bulgaria and Croatia exceeded the total contribution of labor and capital, with the only exception being 2004 in Bulgaria. During these five years in Croatia, the impact of capital on GDP growth was weaker than the impact of labor. The indicated dominant influence of labor on growth compared to that of capital is also observed in Bulgaria, with the only exceptions being in 2001 and 2002. The stronger influence of labor on capital for GDP growth rates is typical for Bulgaria and Croatia over the 2006–2008 period as well, and during these years the total effect of extensive growth factors was higher than the effect of total factor productivity. In contrast to Bulgaria and Croatia, the contribution of capital in Romania was higher than that of labor in 2005–2008, and their total contribution is lower than the contribution of productivity.

In the crisis year of 2009, the contribution of total factor productivity in Bulgaria, Romania and Croatia was negative and accounted for about 54 percent, 70 percent and 95 percent of the decline in GDP, respectively. These negative productivity contributions are combined with negative labor contributions, as in absolute terms the labor contribution in Bulgaria exceeded the contribution of factor productivity, while in Croatia and Romania the negative impact of productivity was stronger than the negative impact of labor. In all three countries, capital had a positive effect on macroeconomic dynamics in 2009, with its relative importance for the rate of change in GDP being higher in Bulgaria and Romania than in Croatia.

Over the next four years, the impact of labor on GDP growth in Bulgaria and Croatia remained negative, after which its impact was positive until the end of the period, except for 2018 in Bulgaria and 2015 in Croatia. In Romania, the negative impact of labor on GDP dynamics continued until 2015. For all years in the 2010–2019 period, the capital contributions in Bulgaria and Romania were positive, while in Croatia positive values were reported only in the last two years. During this time interval, the capital contributions in Romania were higher than the absolute value of the labor contributions, with the only exception being in 2015. As a result, in Romania the positive effect of the capital increase in 2010–2014 exceeded the negative effect from the reduction of labor, due to which the overall impact of intensive factors on growth was positive. The situation was similar in Bulgaria in 2013. Over the 2010–2012 period, however, in Bulgaria the positive contribution of capital was lower than the absolute value of the negative contribution of labor, as a result of which the total contribution of capital and labor to the growth of GDP was negative. In Croatia, empirical estimates show that the total contribution of extensive factors to GDP growth was negative in 2010–2013 and 2015, with the negative impact of capital on GDP growth rates complemented by the negative impact of labor.

Year	Bulgaria						Romania						Croatia					
	$\alpha \frac{\Delta K}{K}$		$\beta \frac{\Delta L}{L}$		$\frac{\Delta A}{A}$		$\alpha \frac{\Delta K}{K}$		$\beta \frac{\Delta L}{L}$		$\frac{\Delta A}{A}$		$\alpha \frac{\Delta K}{K}$		$\beta \frac{\Delta L}{L}$		$\frac{\Delta A}{A}$	
	p.p.	%	p.p.	%	p.p.	%	p.p.	%	p.p.	%	p.p.	%	p.p.	%	p.p.	%	p.p.	%
2000	0.19	3.90	-3.31	-69.29	7.91	165.39	0.33	13.28	-0.52	-21.23	2.66	107.95	-0.14	-5.02	-0.22	-7.60	3.22	112.62
2001	0.35	9.23	-0.04	-1.14	3.51	91.91	0.68	12.98	-0.89	-16.97	5.43	103.99	-0.06	-2.17	-0.56	-18.77	3.58	120.94
2002	0.31	5.26	0.16	2.61	5.48	92.13	0.71	12.43	-7.46	-130.74	12.45	218.31	0.14	2.48	0.59	10.33	4.95	87.20
2003	0.43	8.31	1.85	35.95	2.87	55.75	0.80	34.35	-1.31	-56.00	2.85	121.65	0.40	7.01	1.88	33.35	3.36	59.64
2004	0.57	8.77	3.23	50.18	2.64	41.05	0.93	8.90	-1.10	-10.56	10.60	101.66	0.35	8.38	0.63	15.26	3.17	76.35
2005	0.98	13.63	1.88	26.34	4.29	60.02	0.82	17.63	-0.63	-13.59	4.48	95.96	0.35	8.03	0.69	15.96	3.27	76.00
2006	1.56	22.88	2.32	34.08	2.93	43.04	1.21	15.09	-0.08	-1.05	6.90	85.96	0.52	10.34	2.40	48.02	2.08	41.64
2007	1.94	29.61	2.33	35.46	2.29	34.93	1.87	25.85	1.25	17.31	4.11	56.84	0.55	10.83	2.32	45.82	2.20	43.36
2008	2.40	39.46	3.42	56.28	0.26	4.26	2.32	24.95	-1.17	-12.58	8.16	87.62	0.69	36.24	1.56	82.14	-0.35	-18.38
2009	1.53	-45.35	-3.08	91.36	-1.82	53.99	1.67	-30.30	-3.32	60.10	-3.87	70.20	0.23	-3.14	-0.58	7.97	-6.97	95.17
2010	0.66	117.55	-2.92	-521.61	2.82	504.06	1.45	-37.14	-1.41	36.19	-3.94	100.95	-0.10	7.84	-2.38	181.02	1.17	-88.86
2011	0.44	18.67	-1.77	-75.36	3.69	156.68	1.56	81.90	-1.39	-72.89	1.73	90.99	-0.17	83.39	-3.23	1629.44	3.20	-1612.83
2012	0.48	134.00	-1.92	-539.14	1.80	505.14	1.50	73.27	-0.46	-22.70	1.01	49.43	-0.23	9.42	-3.55	148.50	1.39	-57.92
2013	0.39	120.03	-0.31	-96.31	0.25	76.28	1.26	33.33	-0.86	-22.79	3.37	89.46	-0.18	40.09	-2.90	649.51	2.64	-589.60
2014	0.43	22.73	0.25	13.07	1.21	64.21	1.15	31.95	-0.01	-0.33	2.47	68.38	-0.21	61.57	1.36	-398.79	-1.49	437.22
2015	0.39	9.75	0.29	7.30	3.31	82.94	1.17	39.57	-1.23	-41.81	3.02	102.24	-0.11	-4.58	-1.76	-72.31	4.30	176.89
2016	0.21	5.37	0.35	9.20	3.26	85.44	0.98	20.85	0.12	2.65	3.60	76.50	-0.10	-2.72	0.53	15.16	3.06	87.56
2017	0.27	7.61	1.42	40.48	1.82	51.91	0.91	12.47	0.83	11.30	5.58	76.22	-0.03	-0.98	1.45	42.27	2.02	58.70
2018	0.40	12.82	-0.02	-0.65	2.72	87.83	0.83	18.58	0.12	2.66	3.52	78.75	0.06	2.31	1.46	52.16	1.28	45.53
2019	0.40	10.90	0.30	8.05	2.99	81.06	0.82	19.67	0.15	3.53	3.19	76.79	0.01	0.41	3.52	123.08	-0.67	-23.49

Table 2: Contributions of labor, capital and total factor productivity in GDP growth rate

Source: Author's calculations based on Eurostat data

In all years of the 2010–2019 period, the total factor productivity in Bulgaria has a positive effect on GDP growth. Romania and Croatia also observed mostly positive contributions of the intensive factor, with the only exceptions being in 2010 in Romania, and in 2014 and 2019 in Croatia. Total factor productivity played a decisive role in the dynamics of GDP in Bulgaria and Romania in all years of the interval and only in 2012 in Romania there was a slight predominance of the influence of extensive factors. In Croatia, the combined effect of capital and labor dominated the effect of productivity over most years of the period, but on average for the interval the contribution of the intensive factor was about 2.6 times higher than the absolute value of the contribution of extensive factors.

## CONCLUSION

In most years of the studied period, the total factor productivity was of leading importance for the dynamics of GDP in Bulgaria, Romania and Croatia. This is a reason to conclude that economic growth in the three countries was mainly intensive. This qualitative characteristic of growth shows a definition of specificity, both over time and between countries. Until 2008, the dominant role of total factor productivity was most pronounced in Romania, with the contribution of the intensive factor many times exceeding the total contribution of labor and capital. In Bulgaria and Croatia in certain years the influence of extensive growth factors is stronger than that of productivity, as the effect of labor growth on GDP growth outweighs the effect of capital increase.

In the crisis year of 2009, the total factor productivity had a negative impact on the dynamics of GDP in all three countries, and its negative impact was complemented by the negative impact of labor. For the 2009–2019 period the contribution of the intensive factor to the dynamics of the GDP was higher than the contribution of the extensive factors in all three countries, as in Bulgaria the largest discrepancy between was observed. This is in line with the fact that in Bulgaria the dominant role of factor productivity for growth for the period after 2009 increased compared to the previous period, while in Romania it decreased. Unlike Bulgaria and Croatia, where the average total contribution of extensive factors for the last eleven years was negative, in Romania this contribution was positive and was due to capital growth.

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# CROSS CULTURAL MANAGEMENT AT THE INTERNATIONAL COMPANY

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**Abstract.** *Effective and successful use of cross-cultural management can be the key strategy of the competitive position. In this case, today's multicultural global business community should incorporate cultural differences. To achieve business goals and avoid cultural misunderstandings, managers should be culturally sensitive and promote creativity and motivation through flexible leadership. In attaining that goal, the main criteria for comparative analysis of different cultures were determined. The features of the main management functions implementation and approaches of solving a particular management situation were analysed. The current research of the main cultural differences has identified the main problem areas.*

**Keywords:** *cross cultural, globalisation, international staff.*

**JEL Classifications:** *F23, M54.*

## INTRODUCTION

The problem of cross cultural management is getting more important and essential in the current conditions of globalization. It makes managers focus on their organizational, creative and communicative skills, which provide the base for global society development.

In order to preserve the competitive positions, managers should take into account cultural background of their employees, business partners, vendors and etc. The strategy of creating multicultural teams will take the chance to operate on a bigger market and will be the perfect way to position themselves as an “open-boarded” company.

## LITERATURE REVIEW

This topic is reflected in the different literary sources. Nowadays, cross-cultural management is represented as an effort that appears at the interface of different cultures.

The categorization made by Hofstede is a classical cultural dimension. It shows the effects of a society's culture on the values of its members, and how these values relate to behavior, using a structure derived from factor analysis [2].

Also Richard Lewis made a valuable contribution to the evolution of international cross cultural management dividing cultures into three massive categories. This classification represents the generalized approach for dealing with the totally different cultures [4].

## METHODOLOGY

Cross cultural teams are groups formed from different cultures with the aim of performing common tasks. In contrast to mono-cultural teams, cross-cultural are characterized by the prevalence of different cultures, mixed languages and styles of interpersonal interaction. Therefore, in order to ensure the effectiveness of such a team, it is necessary to understand the degree of influence to each other.

Globalization results in more activities all over the world which leads to communication across cultures. The term “intercultural business communication” is a new term in the world of business which may be defined as “the communication that takes place within businesses whereby there are employees from different cultural backgrounds”. Therefore, good knowledge of intercultural communication as well as of international business communication is a key factor to do business [9].

According to Geert Hofstede, there are four ways to analyze and understand another culture [2]:

1. Power distance index (PDI). The power distance index is defined as “the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally”.

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2. Individualism vs. collectivism (IDV). This index explores the “degree to which people in a society are integrated into groups”.

3. Uncertainty avoidance (UAI). The index is defined as “a society’s tolerance for ambiguity”, in which people embrace or avert an event of something unexpected and unknown.

4. Masculinity vs. femininity (MAS). Masculinity is defined as “a preference in society for achievement, heroism, assertiveness and material rewards for success”. Its counterpart represents “a preference for cooperation, modesty, caring for the weak and quality of life”.

5. Long-term orientation vs. short-term orientation (LTO). A lower degree of this index (short-term) indicates that traditions are honored and kept, while steadfastness is valued.

6. Indulgence vs. restraint (IND). Indulgence is defined as “a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun”. Its counterpart is defined as “a society that controls gratification of needs and regulates it by means of strict social norms”.

This dimension forms the basis of overall cross-cultural analysis. Cultural values have a considerable effect on the way managers run an organization. All of the above presents the differences which managers may encounter when managing business at an international level.

One more approach by Richard Lewis classified all cultures into three main groups, which can be seen below (fig. 1) [4].

Type	Description
Mono-active cultures (Germany, Belgium, Switzerland, etc.)	Systematic planning of the future in details, carefully planned and analyzed, broken down into stage strict deadlines, formality and strictness are welcome, balanced and strong management decisions
Poly-active cultures (France, Spain, Italy, etc.)	Allow the execution of several cases at one time, planning just some general issues, the most attention to people, private and work life mix
Reactive cultures (China, Japan, Finland, etc.)	Analyze the general principles of a situation and react according to said context, quiet and yet caring, respectful, people-oriented

*Table 1: Lewis model of cultural classification*

As we can see, there are many attributes of classification categories, which should be on the managers’ focus. Although it is a time-consuming process to build an effective multicultural team, it seems the best investment in the development [5].

In this case there are some guidelines that can be distinguished:

1. Managers should have political, cultural and language background in order to be able to solve emerging management issues.

2. Avoid cultural bias. Do not let some stereotypes work against the management system.

3. Develop cross cultural skills. This strategy keeps managers prepared for any kinds of negotiations and will serve as the basis for further international development.

To follow all these guidelines managers should be:

1. Tolerant and flexible in the decision making process.

2. Be aware of the strengths, development needs, and preconceptions of the team.

3. Gain consensus in group roles.

4. Effective in a long-term HR-prospect.

It can be summarized from the above that multinational organizations have a special role not only in building cross-cultural bridges, but in innovating synergies through their practical knowledge of putting together human and natural resources of managing both in the most effective ways.

## CONCLUSION

If companies want to go international, the ability to attract, retain and motivate people with different cultural backgrounds can be the competitive advantages in creativity, problem solving and flexible adaptation to change.

The importance of the multicultural workforce strategy is becoming the new management reality. Implementation of this strategy can help to achieve global goals and avoid potential risks. The managers should be culturally sensitive and promote creativity and motivation through flexible leadership.

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# PHILOSOPHY OF ECONOMICS IN THE SYSTEM OF ECONOMIC KNOWLEDGE

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**Abstract.** *The paper discusses the specifics of philosophy comparing it with science. It differs from science at least by six features: philosophy does not satisfy such criteria as verification and falsification, it never acquired the dominant paradigm, philosophy does not have any specific methods of acquisition of knowledge as well as generally valid problems, there is no special language of philosophy in sense that such language exists in any scientific discipline. Philosophy deals with the world of meanings rather than with the material world. When philosophy approaches social sciences it is aiming towards the objective cultural reality which exists in the Popper's so called "third world", opposing, from one side, the material world and, from another side, the world of human senses. From this point of view the philosophy of economy includes the ideal types (in Max Weber's sense), positions of researcher; criteria of validity of acquired knowledge, etc., occupying the reflective position in relation to scientific economic knowledge.*

**Keywords:** *philosophy, science, reflection, objectivity, philosophy of economy, the "third world", ideal types.*

**JEL classification:** *A 12.*

There is no clear idea of the philosophy of economics as a form of intellectual activity and its relation to the economic sciences. It seems quite difficult to get a clear answer to the question, on what grounds the selection of texts, works, correlated with the category "philosophy of economy" is made: the "Objectivity" of socially-scientific and sociopolitical knowledge" of Max Weber, "Limitations of marginal utility" of Thorstein Veblen, "Science and ideology" of Joseph Schumpeter, etc. [1]. The reference to intuition is not sufficient in this case.

Yet the situation is "aggravated" by the fact that something similar can be concluded about philosophy in general, about its attitude to science in general. It is easy to justify this statement observing the variety of definitions of the "subject" of philosophy. Our philosophy textbooks suggested that it should be considered "the science of the universal laws of the development of the nature of society and thought." The philosopher of the Russian silver age S. L. Frank argued that "the subject of philosophy and religion coincide, for the only subject of philosophy is God." According to M. Heidegger — "philosophy is the last utterance and the last argument of a person, capturing him completely and constantly". A. Camus considered the only one really serious philosophical problem that was suicide. It is sometimes even argued that "there is no such thing as a certain essence of philosophy that can be distinguished and cast in a certain definition. The definition of the word "philosophy" can only have the character of a convention or agreement" (Karl Popper).

We have also to emphasize a certain sharpness of the demarcation problem, i.e. the problem of searching for criteria that would allow us to separate the actual scientific knowledge from the philosophy of (science from non-science, from pseudoscience and ideology). This problem manifested itself from the mid-nineteenth century, from the time when science had been recognized as the autonomous sphere of cultural life. While this problem had been discussed, several characteristic features were identified that distinguish science from other forms of spiritual activity, including philosophizing [2]. It is worth to note that the theme of the formation of economics as a form of scientific knowledge proper is present in economic philosophy [3]. The main characteristics, the presence of which is believed to demarcate science and philosophy, are as follows:

**Verification criterion.** Science requires confirmation of hypotheses and theories by empirical observations and experiments (facts), philosophy in its turn does not need this.

**Falsification criterion.** Scientific statements should be not only empirically verifiable, but also refutable in principle, if not at the moment with the help of available means of scientific knowledge, yet at least in the form of an indication of a possible experiment, the implementation of which would lead to the refutation of this theory. The statements of philosophy are neither empirically verifiable nor refutable.

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**Paradigm criterion.** In every science, there should be a certain set of standards of scientific cognitive activity, accepted by the majority of members of the scientific community as a guide for action and a basis for further work. The American philosopher and historian of science Thomas Kuhn expressed this aspect of science in the concept of a paradigm. There is no and never has been a dominant paradigm in philosophy. It is characterized by a principle pluralism of schools and directions.

**Methods.** In science, there are specialized methods of obtaining knowledge — empirical and mathematical. Nothing like this can be found with philosophy.

**Problems.** The processes of scientific knowledge always involve the solution of generally significant problems (tasks). These are problems that are principally solvable according to the rules accepted in science (according to paradigm), and the results of solving them, if they meet certain criteria, are accepted by the entire scientific community. There are no universally valid problems in philosophy, and there are no objective criteria for evaluating them. Philosophical doctrines do not apply to the assessment of truth and falsity, the basis of which in science is the correspondence between knowledge and object. This specific relates to the peculiarities of the development of philosophy. There is a cumulative effect in the growth of scientific knowledge, however the criteria for quantitative and qualitative growth are not applicable to philosophy.

**Language.** In specific sciences, a set of more or less strictly defined concepts and terms is developed, and so we can talk about specific “language”. There is no need to speak about a special language of philosophy. The language of philosophy is vague and not clear at all. In different philosophical systems, the same terms take on different meanings.

It can be argued that the general premise of the presented differences between philosophy and science is the fundamental difference in their thinking positions: the reflexive position marks philosophy, and non-reflexive position — science. The mental activity inherent in a person can unfold in two directions: either outwardly in relation to the thinker, or upon the thinker himself. Therefore science represents reality in the form of an object (matter), as it exists “by itself”, independently of the thinker, while philosophy (reflection) represents the world in its human dimension, as it is represented in thinking. Philosophy, therefore, is a reflection, an explication of the ultimate foundations of human activity, and this differs from other forms of reflection inherent in every thinking person.

Thus the main feature of philosophical thinking is its reflexivity. This is the ability to build models of yourself and at the same time observe yourself building these models. Philosophy, according to the method of theoretical development of being, is a cultivated form of reflection which had been accepted by cultural tradition. The specificity of philosophy, its “subject”, ultimately boils down to the fact that reflective position and process of reflection have become its main goal and content. By the way, Marx also noted that for philosophy, “thinking comprehended in concepts is a real person, and, therefore, only the world comprehended in concepts as such is the real world” [4, p. 727].

The final foundations of being, as it is given in concepts, are accepted in the philosophical tradition referring to the sphere of ontology (the doctrine of being as such). The ultimate foundations of knowledge — epistemology (theory of knowledge). Finally, axiology is the theory of values, that is, the ultimate grounds for choice (freedom).

The methodology of science is a relatively independent field of philosophizing. Its composition is associated with the genesis of science, in particular with the modern philosophy, which was focused on “the problem of method” (Descartes). A clear awareness of the specifics of methodological reflection is found in I. Kant, with his principle questions in the “Critique of pure reason”: how is pure mathematics possible? How is pure natural science possible? How is metaphysics (philosophy) possible as a natural inclination? It can be seen, Kant does not place philosophy in the same category as mathematics and physics.

Philosophy is a reflection and explication of the foundations of human activity. The world of meanings (“senses” in G. Frege’s philosophy) encloses these foundations. Meanings are not elements of the physical world, their existence and properties are revealed not by scientific knowledge as such, but by reflection. The reality of meanings is supersensible. A psychologist might say that the “specialness” of this reality is that it is impossible to observe it directly. The same content can

adequately be represented by a judgment, that linguistic definition of “meaning” is impossible, or that it is beyond the boundaries of linguistic analysis of language, information theory, etc. In other words, the meanings are existing in the inner experience, unlike outer, based on the almost sensual relation to the world. Philosophical reflection is a direct explication of the universal semantic foundations of human existence, which, for example, finds expression in the concept of the meaning of life.

Reflective analysis of meanings as a certain primary given reality, considered in their relation to objects, has become the main, defining aspect of phenomenology — one of the main directions of philosophy of the twentieth century. The creator of phenomenology, the German philosopher E. Husserl developed a special method for studying semantic structures in their primary authenticity, “purified” from all kinds of ideological, everyday, scientific additions and schemes. Husserl called this phenomenological reduction, and defined phenomenology as a whole as a “descriptive method” whose application can “provide the only reliable basis” upon which a strict “empirical psychology” can be built [5].

However, Husserl’s use of the terms “phenomenological psychology” and “empirical science” does not mean that phenomenology is identified with the sciences in the proper sense; rather, there are analogies, a symmetry between non-reflexive consciousness and reflection. From this point of view, it is quite legitimate to say that “phenomenology... is the focal point of all philosophy”.

Despite the fact that the methodology of science in all arguments about its subject, one way or another, is associated with philosophy, considering it to be, for example, a section of epistemology, nevertheless, the question of the specifics of the knowledge produced by methodology is not emphasized normally. This uncertainty leads to two essentially different definitions of its “subject”. In the first version, the methodology of science is identified with the philosophy of science. So, in the following example, the list of basic questions related to the competence of the philosophy of science, it is quite possible to enroll in the category of methodology of science — the philosophy of science tries to answer the following basic questions: what is scientific knowledge, how it works, what are the principles of its organization and functioning, what is science as a knowledge production, what are the laws of formation and development of scientific disciplines, how do they differ from each other and how do they interact?. The second version of identification of the methodology of science treats it as a scientific discipline that studies the methods of scientific cognitive activity or even constructs them.

This point of view was developed by G. P. Shchedrovitsky. It was interpreted as a theoretic and activity based approach. The immediate task of the methodology is focused on practice and is aimed to develop methodological provisions necessary for designing new activity procedures. In order to do this the individual goes beyond the boundaries of the structures and positions of his activity, becoming in relation to them in a “reflective attitude”. Reflection is not interpreted as “awareness of practice” at all. It is a mental position that allows anyone to manage the processes of practical activity. In this sense, it can be considered as a functional characteristic of «methodological activity.» Methodological activity, according to Shchedrovitsky, is drawn by a global mental structure that provides solutions to practical problems, a kind of control unit for practical adaptation of a person to the world, which has the output of developing methodological provisions. Its divisions are: 1) scientific research that produces knowledge of the type — “the law F is producing changes in object A”; 2) historical descriptions of changing norms of activity; 3) activity for the development of the actual methodological prescriptions. The “top floor” of the entire structure should be a special methodological discipline - the science of activity. Typical for Shchedrovitsky’s approach is the reservation about the epistemological status of this science: “This science differs in many ways from the natural sciences, although, like them, it must establish the internal laws of the life of its object; but these will no longer be so much the “eternal” and unchangeable invariants of activity but the laws and mechanisms of its historical development” [6, p. 218]. One can take the risk of understanding this in such a way that the concept of “science” appears here in the same context as in Husserl, with his “phenomenological reduction”.

Therefore, in order to solve problems that are adequate to science, the cognizing subject is sometimes “forced” to do something that is not typical for him in normal conditions — to analyze

the meaning of the fundamental concepts used, from the world of, say, physical (material) reality. He plunges into the world of the ideal (the world of meanings), which, of course, requires mastering skills that are non-specific for physicists, and even science in general. The situation in twentieth-century physics and the role played by Einstein and Bohr, for example, lead to this conclusion. The revolution in natural science and the formation of a new picture of the world has given rise to a close interest in the foundations of science, in the analysis of the entire system of “epistemological relations”, in which the scientist who solves his cognitive tasks is included. There is a surge of philosophical discussions and discussions with the active participation of the creators of the new natural science, especially the new physics. At the same time, they focus not only on traditional problems of scientific rationality, but also on the cognitive status of the researcher, his place and role in general. This was the essence of the reflective analysis of the current situation in science (physics).

Namely here the conditions were created for the next step, a step similar to the one that Husserl outlined for his psychology. We are talking about the possibility to describe in theoretical models of the connections and relationships inherent in the contexts of production and growth of scientific knowledge, as they are revealed in reflection. We find precedents for the implementation of such an intention in Popper’s logical and methodological concept, Kuhn’s concept of scientific revolutions, Tulmin’s evolutionary model of science development, and so on.

All these doctrines are characterized by an explicit or implicit interpretation of scientific knowledge as an inhabitant of a certain objective world in its status. The “third world” as it was designated by K. Popper. But obviously, this does not mean the same status that is given to the laws of nature by a physicist, chemist, etc. in their interpretations. Popper, after all, distinguishes the “Third world” from the other two: the world of physical objects and the world of mental states. The objectivity of the “Third world” is based upon the fact that it arises and develops independently of the other two worlds, independently of the will and consciousness of the cognizing subject. Thus, the world of science in certain respects can also be perceived as “objective reality”, but one should be aware that this is not “objectivity” in the sense of matter, but in the status of the existence of a cultural form, “objective spirit”, as it manifests itself in relation to individual consciousness.

In this point, there is a “full contact” with the direction of the vector in the philosophical (methodological) analysis of economic knowledge. The needs of this analysis are expressed in two questions: what is economic existence? What provides economic knowledge with the right to claim objectivity?

It can be argued that up to now our economic knowledge is dominated in one way or another by a “materialistic understanding of history”. Within the framework of this doctrine these questions and their solutions acquired an extremely vague sound. They were reduced to such postulates as “In the social production of their life, people enter into certain relations that are necessary and independent of their will — relations of production that correspond to a certain stage of development of their material productive forces. The totality of these relations of production constitutes the economic structure of society, the real basis on which the legal and political superstructure rises and to which certain forms of social consciousness correspond. The mode of production of material life determines the social, political, and spiritual processes of life in general. It is not the consciousness of people that determines their being, but, on the contrary, their social being that determines their consciousness. At a certain stage of their development, the material productive forces of society come into conflict with the existing relations of production, or — which is only a legal expression of the latter — with the property relations within which they have hitherto developed. These relations are transformed from forms of development of the productive forces into their fetters. Then comes the era of social revolution. With a change in the economic basis, a revolution more or less quickly takes place in the entire vast superstructure. When considering such revolutions, it is always necessary to distinguish a material revolution in the economic conditions of production, which can be ascertained with natural scientific accuracy, from legal, political, religious, artistic or philosophical, in short, from ideological forms in which people are aware of this conflict and struggle for its resolution” [7, p. 6–7].

The current state of the philosophy of science allows us to state quite clearly the aspects of methodological incorrectness of such arguments. How, for example, can we understand the use of the category “contradiction”, which relates to consciousness (logic), in the analysis of being that receives the characteristic of “material”? What does it mean, that “being determines consciousness”? An allegory of determinism? Things (productive forces) — causes, consciousness - effects? What does “natural-scientific accuracy” mean? This is the analogue of what takes place, for example, in mechanics or physics? There is an arbitrary transfer of paradigmatic features of natural science to social existence, which, obviously, is not nature. Characteristically, later Engels began to talk about the reverse effect of consciousness on being, about the relative independence of the superstructure in its evolution, although he did not understand that this would disavow the cognitive status of the materialistic understanding of history. In general, it should be borne in mind that the influence of Marxism was not due to its “scientific” nature, but to the fact that this teaching acquired the form of a quasi-religion in a world where “God died” (Nietzsche). As for the social and economic philosophy of Marxism, its main incorrectness can be designated as “naturalism”.

Social reality is “the activity of a person who pursues his goals”, in other words “practice”, as Marx himself interpreted it. Yet this is a reality of a special kind, and the most general concept reflecting its essence is the concept of culture. If we translate the analysis into the aspect of scientific knowledge, there is a problem of representation of social existence as an objective reality. Marx, and this was a mistake, used the category “matter” in this case. It is right that scientific rationality itself requires that the social reality under study be perceived precisely as objectively given to the cognizing subject. However to name it “matter”, indicating this objectivity, is false. What if the subject who is aware of himself becomes the reality under investigation. Clearly, this can not be a “thing by its own self”. If we follow the path of “Critique of pure reason”, we can resort to the concept of a “transcendental subject”, that is, a kind of super-Ego. The objective status of the existence of this super-Ego is manifested in the relative independence of its functioning and development relative to each ego.

As an illustration, we will refer to the following argument by Paul Heyne: “But what is ‘thinking technique’? In the most general terms, this is a certain premise about what a person is guided by in his behavior. With surprisingly few exceptions, economic theories are based on the well-defined premise that individuals take actions that they believe will bring them the greatest net benefit (i. e., benefit minus all possible costs or losses associated with these actions). Everyone is supposed to act according to this rule: the miser and the spendthrift, the saint and the sinner, the buyer and the seller, the politician and the manager of the firm, the cautious man who relies on preliminary calculations and the desperate improviser” [8, p. 23].

At the same time, the above can serve as an illustration of what Weber meant by “ideal type”. All the characters presented in the passage are so diverse and have only one property — to act solely in the name of profit. A researcher in any advanced science, such as physics or mechanics, does the same thing. The addressee of the solution of cognitive problems is not real things, bodies, but material points obtained as a result of abstraction and idealization procedures, ideally elastic bodies, etc. As Weber said, “the ideal type is not a ‘hypothesis’; it only indicates the direction in which hypotheses should be formed. Nor does it give an image of reality, but it presents an unambiguous means of expression” [1, p. 90].

These considerations allow us to indicate the place of philosophy of economy in the system of economic knowledge. It reflects upon the objective (yet not “material”) structures which constitute the “third world” of economic activity examined by scientists. This world includes the ideal types (like “homo oeconomicus”, always making decisions pursuing his profit; or substructure of theoretical reasoning), positions of researcher which outline the aspect of the study selected from the vague multitude of the events and occurrences which manifest economic activity, criteria of validity of acquired knowledge, etc.

All of this can serve as examples of proper philosophical reasoning, the nature of the relationship between the philosophy of economics and the actual economic scientific knowledge.

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# TRANSFORMATION OF COMPETITION POLICY AND ANTIMONOPOLY REGULATION UNDER DIGITAL ECONOMY AND GLOBALIZATION

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**Abstract.** *The end of the XX c. — the beginning of the XXI c. brought a dramatic transformation of the classic antimonopoly policy into the policy of competition protection. To a considerable extent, it was caused by radical reconfigurations of the form and essence of competitive processes in the modern markets, stemming fundamental reconsiderations of the competition–monopoly dichotomy and the evolving new conceptual approaches to government regulation of competition. The continued rapid changing of the market conditions in the course of the fourth industrial revolution in the past decade stimulates further modernization of the criteria, norms and standards of competition regulation and methods of enforcement, bringing, in particular, brand new, strategic developments in international collaboration in the field of competition protection at the global and regional scales.*

**Keywords:** *antimonopoly regulation, competition policy, digital economy, globalization, the Federal Antimonopoly Service.*

## INTRODUCTION: CHANGING CONCEPTUAL APPROACHES TO PUBLIC REGULATION OF COMPETITION

In the past decades of the XX c. the classic methods of and tools of antitrust regulation, that seemed to be carved in stone and had been robustly enforced for nearly a century in all developed economies, began to be put in questions [16, 17, 20, 24, 34]. The traditional paradigm relied on the concept of market competition — monopoly dichotomy, which origin goes back to the “invisible market hand” of Adam Smith. Although the competition-monopoly concept was naturally evolving in line with the development of economic-and social relations, any changes in the theory still fit the mainstream pattern of “perfect competition” as the ideal form of market in terms of efficiency and benefits for the society [19, 26]. Due to a number of, in no small part, institutional reasons, the theory of perfect competition, formulated and reinforced in the tideway of Keynesian economics / neoclassical resurgence, has held the fort in public enforcement practically throughout the entire XX c. even though the consensus was building up among both scholars and regulators that some key points of the theory of perfect competition that had used to be adequate for classical industrial economy with mass production of homogenous goods and with time were transforming increasingly more into a nothing more but a purely theoretical construct, quite useful, however, for understanding important aspects of economic analysis, modeled in the conditions of static equilibrium. Attempts to modify the concept without radically changing the entire paradigm, such as the concepts of monopolistic competition, workable competition did not break the ties to the mainframe regulatory principles of classic antitrust: unbundling and fragmentation for any significant divergence from the perfect competition pattern [21].

It is not until the last decades of the XX. century that the discrepancy between the perfect competition model and the antitrust theory based on it and the processes and trends on the actual markets as well as the consequences for business, consumers and the society became evident and generated in modernization of the “Structure — Conduct — Result” principle of public policy and “per se” violations in enforcement and shifting the main emphasis of competition analysis to behavior of economic entities. It was proven that competition can take place on the markets with different structure, either high or low level of economic concentration, and as a result competition leads to development of a particular structure that would be the most efficient for a particular industry or segment [18]. Developments in economic theory recognized potential efficiency of large economic entities and possibility of intensive competition in oligopolistic markets instead of full absence or

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“distorted” competition. Through trial and error, practitioners and theoreticians gradually developed more sharpened and comprehensive understanding and analysis of corporate conduct and efficiencies (new industrial economics).

Transformation of the approaches to the competition-monopoly concept at the modern stage is facilitated by various underlying social-and-economic, political (e. g., supporting national competitiveness) and institutional factors, particularly:

- Globalization of competitive environment and intensification of cross-border competition;
- Transition to the post-industrial, knowledge-intensive economy based on innovative breakthroughs;
- Focus on consumer satisfaction amidst growing consumer self-awareness;
- An imperative of constantly adapting business models and strategies to the new economic trends;
- The transforming nature of creating value as the ultimate elements of competitiveness.

As a result, the traditional antitrust remedies, rooted in the classical theory of monopoly and competition, and perfect competition as the efficiency benchmark, battle-tested in restructuring remedies against the leading companies, reinforced as tool of overcoming the consequences of the pre-war economic depression and military burden on the economy, became an obstacle to economic development in new economic conditions of late industrial — post-industrial world [1, 12]. The institutes of government economic policy set considerable restrictions to such actions and operations of economic entities that potentially stimulate and facilitate development of competition on the markets, which was contrary to the interests of consumers and the society in general.

System-wide reconsideration of the principles of antimonopoly regulation formed in the old paradigm of government intervention in the economy was determined by a number of factors, including:

- The need to establish and develop institutes encouraging a high level of competitiveness of national champions in the increasingly globalizing economy and drastically changing forms and methods of competition;
- Systemic cross-analysis of traditional antimonopoly remedies by regulators in terms of their conformance to the new economic trends;
- Incorporating and updating the foundational provisions of the new body of the economic theory of monopoly-competition;
- Identifying and considering system weaknesses of the classic antitrust policy with regard to potential short-term as well as long-term economic effects and challenges.

The utmost shortcoming of the old antimonopoly policy was that paradoxically its anticompetitive costs frequently exceeded the pro-competitive effects at both regional and national levels. Studies proved that market mechanisms cannot efficiently operate without adequate institutional “support infrastructure” building which is a mandatory condition for emerging and advancement of efficient, fair competition [6].

## **TRANSFORMATION OF ANTIMONOPOLY POLICY INTO THE POLICY OF PROTECTING COMPETITION IN THE POST-INDUSTRIAL ECONOMY**

Post-industrial markets demonstrate a clear tendency towards systemic changes of the form and essence of competition. Competition is increasingly fulfilled as the so-called co-opetition, transient interaction and collaborative creation of unique value for consumers and shaping new markets, rather than straightforward rivalry for market share. Classical opposition of individual economic entities within the same industry is being gradually replaced with inter-sectoral competition of multi-level systems of economic agents formed by large companies — market leaders. Post-industrial markets are generally characterized by intensified competition due to absence of sustainable competitive effect

[1, 11, 12]. Factors defining the specifics of intensified competition at the present stage of economic development are summarized in Table 1.

Continued economic globalization	Global and “distributed” products, technologies and management. Cross-sectroal and cross-border competition. Liberalization of control over foreign investment in economies and strategic enterprises. Global vs. local operators competition on domestic markets. General trends towards consolidation and economic concentration in parallel with a growing role of independent entities that provide unique products of global reach
Innovation and IP economy	Modern efficiency imperative — achieving transient monopolistic position and competitive advantages through innovations. Growing relative value of IP and intangible resources vs tangible assets. Dramatic increase of investments in R&D and smart technologies and management. Connected economy. ICT and immersing into digital as an integral element of successful competition. Network effects. New pattern of economies of scale based on innovations. Competition for intellectual capital. “Mass” customization in parallel with additive technologies and modularization for mass fabrication of standardized products. Compatibility requirements are instrumental in reducing entry barriers
Changes in customer behaviour models	Consolidation of consumer groups. Crystallization of consumer interests, growing self-awareness of consumers as a powerful market force. Demand evolving towards differentiation, customization and personalization. Branded or non-branded unique strategic value gains competitive advantage under the conditions of increasing consumer-side dominance. Trends towards shortening lead-time, product cycle, “real-time” satisfaction of consumer needs
Market restructuring	Market entry is increasingly determined and facilitated by reshaping value chains. A basic trend towards flexible, multi-level market structure constantly adapting to the rapidly changing environment and giving equal weight and value to actors of various size: building highly specialized business communities coordinated by the leading companies
Transparency and publicity over agents	Industry deregulation and liberalization. Developing a business environment that stimulates efficiency and innovation. Essential strategic values as competitive resources of market players are created through reputation in the eyes of consumers and the society in general. The growing role of competition advocacy in reducing costs and the risks of anticompetitive behaviour

*Table 1: Drivers of intensifying competition on the post-industrial markets*

Critical review of the core rationale and effects of antimonopoly policy and the impact of the above-summarized economic factors, that to a large extent, triggered such reconsideration and interpretation have led to a new level of conceptualization of public impact upon market processes — in the form of the policy of competition protection [17]. A brief summary of the new systemic features of competition policy and their comparison with the main characteristics of the traditional antimonopoly policy are given in Table 2.

Feature	AMP	CPP
Competition-monopoly and efficiency concepts	Perfect competition as the benchmark of market efficiency	Monopoly = essential element of efficiency, competition takes place through achieving transient monopolistic advantages of innovations
Object of competition	Market share and resources	Leadership in value creation (creating new markets)
Outcome of competition	(Re)Distribution of wealth	Augmenting wealth by adding value in from of valuable goods and services
Ideology of competition policy	Fair distribution of wealth to enhance public well-being	Facilitate efficiency and innovations as the mainstream way to improve well-being of the population and national competitiveness
Top efficiency	Price competition for non-differentiated products	Non-price competition for differentiated products
Competition enforcement	Systemic forced market restructuring	Stimulating economic agents (creating the environment to facilitate efficiency, innovations and production of publically valuable goods and services), establishing common playing field
Analyzing competitive environment	Static: focus on the market structure	Dynamic: focus on the conduct of market agents
Methods and tools of competition policy	Unbundling and downsizing. Per se principle dominates in recognizing violations	Limiting per se application, institutionalizing the rule of reason
Maximum effect	Coercion tools	Deterrence. Focus on the most dangerous violations (cartels). Leniency programs, publicity, increasing awareness about the advantages of competition and the measures of competition protection undertaken by the state
The balance of risks	The highest risk is no-punishment for anticompetitive conduct: judicial error (economic and social costs of the rules of antimonopoly liability) is not important	The highest risk is “freezing”, restricting pro-competitive conduct (recognizing the risk of judicial error and potential adverse social-and-economic impact)
Form of competition	Between individual economic entities in strict hierarchy of relations and limited communications between market participants	Corresponds to the modern challenges of competition in the form of business-systems: the risk of adverse impact of antimonopoly measures (unbundling, fragmentation, refusals to approve mergers) is increasing because it concerns all participants of a particular business-system
Actions by regulators	Mostly reactive	Initiative, proactive
Role of antimonopoly remedies	Antimonopoly measures dominate	Antimonopoly remedies are an element of a broader competition policy with equal significance of competition advocacy

*Table 2: Comparative analysis of systemic features of the traditional antimonopoly policy and the modern policy of competition protection*

Therefore, globalization and an innovative economy has generated a brand new form of competition with the most essential element being competitive actions aimed at gaining a monopolistic position through implementing innovative products. It resulted in modernization of the theory and practice of antimonopoly regulation, adapting to the new economic paradigm.

## COMPETITION POLICY AND ENFORCEMENT AT THE CURRENT STAGE

Several basic methodological constructs and classical standards of antimonopoly policy have been abandoned in favour of new institutional principles of antimonopoly regulation. These include, in particular:

- Rejecting structural approach to evaluate threshold of antimonopoly intervention in market operations;
- Legitimizing companies' aspiration to build up their transient market advantages through monopolization and possessing monopolistic power based on innovations;
- Institutionalising the category of "positive (pro-competitive) effects" that foster consumer well-being as well as social prosperity in general; establishing criteria for increasing market efficiency and strengthening the role of the institute of effects in enforcement of the antimonopoly norms.
- Preventing deterrence of pro-competitive behaviour of market participants as a result of antimonopoly control.
- Transition to a flexible system of antimonopoly regulation that gives market agents wide opportunities to choose, implement and correct their business strategies.
- Reducing transactional, economic and social costs of regulating a competitive environment for antimonopoly authorities, judiciaries, market participants and society in general.
- Providing conditions for developing competition based on increasing value for consumers, as an important element of the government policy towards stimulating innovations and supporting innovative companies.

International regulatory practice now demonstrates new, pronounced trends, determined by the transformational economic processes and developments in approaches to antimonopoly control:

- 1) Increasing liberalization of antimonopoly regulation;
- 2) Concentrating the efforts of antimonopoly authorities on the most serious violations of the competition law that inflicts the most harm upon the economy and the society;
- 3) Increased weight and significance of the measures designed to simulate desirable conduct of market participants (in terms of its efficiency and innovations);
- 4) Downgrading the measures directed at regulation of economic concentration (merger control);
- 5) Advancing the role of competition advocacy in preventative deterrence of anticompetitive actions;
- 6) Mainstreaming robust efforts of competition authorities to elaborate and refine international standards for analysis, investigation violations of competition, legal framework and enforcement practice.

One of essential elements of the new paradigm of competition policy is gradual shifting of the efforts of competition authorities towards tightening control and regulation over competition-restricting agreements and concerted actions (with the focus on the most widespread and at the same time most harmful type of restrictive business practices — hard core cartels due to an especially destructive impact upon incentives and efficiency of resource allocation) [28]. Such shifting stems from an array of economic conditions, particularly, the structure of the modern economy, which require global presence, consolidation of resources, R&D collaboration, unprecedentedly large-scale investments and gaining competitive advantage through operation of business-systems, with cross-segment, extended and distributed value chains to reach and control broader consumer and supplier groups. The flip side of the coin is intensive formation of complex multi-level cartels, penetrating all industries and countries and operating increasingly more often at the cross-border level, that appear to replace the traditional horizontal or vertical cartels. Furthermore, as bona fide collaboration between competitors within a particular project become a normal state of things in the knowledge economy, the line between constructive elements of partnership and actions designed to restrict competition becomes finer, making enforcement more complicated and costly for the regulators while the size of cartel benefits makes them more attractive for its members. Currently, in spite of the strategic focus

on countering cartels as per se violations, their prevalence is overwhelming and cartelization remains the major challenge in regulation.

Current massive immersion of the economy into digital is also ministerial to cartel formation, making it even more latent if not implicit, which is a major advantage for the violators, at the same time, hampering cartel exposure [15]. Furthermore, digitalization in general moulds new business practices, that have not been seen and categorized by regulators earlier, brings changes to corporate conduct and creates new problems in the segments that seemed to reach a satisfactory level of competition already. For example, despite the long-established Common Market, e-commerce within the EU has exposed a lot of competition-restricting issue issues (contractual restriction on use of price aggregators, restricting online retailers by producers in cross-border trade, etc.) [13, 14]. On top of that, classical tying practices show no signs of disappearing, which is illustrated by a recent wave of high-profile abuse of dominance cases against digital giants in various jurisdictions, including the US, the EU and Russia. Thus, digitalization marks a brand new stage in competition regulation and methods of enforcement requiring elaboration and refinement of criteria, norms and standards, and competition authorities must meet the challenge adequately and rapidly otherwise they risk a threat of losing the battle.

These factors are conducive to strategic developments in international collaboration in the field of competition protection at the global and regional scales. Since in the epoch of globalization and digitalization, antimonopoly violations are getting increasingly more cross-board and powerful, bringing cross-country collaboration to a new quality level has become an imperative. The Russian national regulator — the Federal Antimonopoly Service (FAS Russia) has been very proactive in this sphere, being vigorously involved in this kind of work through different institutional frameworks and leading such important initiatives as, for example, adopting the Guiding Principles and Procedures under Section F of the UN Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices, which is a major international anti-cartel initiative to be adopted at the UN 2020 Conference to Review All Aspects of the Set. Game-changing developments are also taking place at the regional level, when regional associations of competition authorities (i. e. BRICS, the Customs Union, CIS) are gaining momentum in terms of, for instance, being able to exercise joint leverage and undertake coherent measures to protect their national interests and force transnational corporations and industry champions to correct their unfair business practices that they pursue outside their jurisdictions and observe the competition rules and standards.

## **CONCLUSIONS: WILL COMPETITION POLICY STAND UP TO THE NEW CHALLENGE**

1) In place of recapitulating the main points of the paper, let's conclude with thoughts as to whether the current COVID-19 pandemic and its social-and-economic status can be a significant factor that can breed certain noticeable twists in the pattern of antimonopoly regulation. Will it be an additional stimulus of further continued liberalization of the antimonopoly framework, softening thresholds and fortifying the prevalence of the rule of reason over the per se principle and concentrating resources on major violations of the competition law, or a rising wave of unfair competition acts, unreasonable monopolization and concentration of market power, abuse of dominance and collusions, especially in the digital space in a great measure a counter move to the economic burden in the new-coronavirus “epoch”, will force the authorities to hold on and tighten back.

2) No doubt, self-isolation and shifting all segments of activities and transactions overwhelmingly online will be a further heavyweight factor pushing both the regulators and violators to go deeper into the digital. On the one hand, it means a practically inevitable aggravation of the situation and kind of “retreating” of fair competition due to creating excellent conditions for latent collusions and offering highly efficient “enabling technologies” for rooting cartelization across entire sectors or different economies, dramatic strengthening of the positions of large companies — market champions and transnational corporations to the point of threatening national security, painful market

share reallocation and changing the boundaries the large properties, weakening the positions of the real sector of the economy in inter-sectoral competition, hollowing out-small and medium business which will change the market concentration trends and generate a wave of mergers. On the other, the regulators have no option but to accept the challenge and speedily find the ways, particularly and increasingly, in the digital field to counter and mitigate the negative trends and elaborate on flexible models of competition support and development. It generally means that regulators would also have to mainstream digital tools of antimonopoly control and enforcement.

3) Another important question concerns further development of international cooperation in the field of competition policy and regulation. Robust efforts have been undertaken recently in this area and, hopefully, there will be no throwback to compartmentalization and, on the contrary, the tools of international collaboration in investigations, information exchange and joint initiatives will be further refined and adopted. Certainly, here the authorities will not escape an impact of the general political-and-economic trends in general — whether the coronavirus crisis will spur more dissociative rather than associative tendencies in at the regional and international levels. In any way, it is essential that competition authorities adhere to the newly gained preventative, proactive policies of competition protection and do not roll back reducing its measures to the old, mostly reactive antimonopoly policy.

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# DETERMINATION OF THE EFFECTS OF TAX-PRIVILEGED PRIVATE INVESTORS' INVESTMENTS IN THE SECURITIES MARKET

Olga Belomyttseva\*

**Abstract.** *The article states the question of the need to analyze the efficiency of private investors' investments in the securities market. This issue is gaining special relevance due to the stimulation of investment by private investors by providing them with significant tax incentives for the purchase of securities. The author analyzes foreign studies on this issue. The lack of research on this issue, both in foreign and Russian literature, is stated. Based on the opinions of foreign economists and the author's point of view, the author declares six effects characterizing the investments of private investors:*

- a) an increase in savings / investments of private investors;*
- b) an increase in the equity capital of corporations due to the acquisition of their shares by investors;*
- c) an increase in corporate debt of corporations due to the purchase of their bonds by investors;*
- d) an increase in corporate profits due to the additional financing;*
- e) an increase in corporate tax payments as a whole as a result of an increase in turnover due to the raising of additional financing;*
- f) a decrease in public debt as a result of an increase in budget revenues due to an increase in corporate tax payments.*

*The above effects are divided into intermediate and final ones. The author's method of determining the efficiency of private investors' investments, taking into account the tax benefits provided to them, is stated. The choice of individual investors as investors — owners of individual investment accounts and institutional investors — non-state pension funds has been substantiated. Discussion points of the methodology and opportunities for further research are noted.*

**Keywords:** *bonds, investment effects, private investors, shares, tax incentives.*

**JEL Classifications:** *H21, H31, H32, G11.*

## INTRODUCTION

Both in foreign and in Russian practice, tax incentives are widespread for private investors purchasing securities. We, in particular, mean IRA accounts in the USA, ISA in Great Britain, TFSA in Canada, Superannuation in Australia, NISA in Japan, RGESS in India, KISA in South Korea, tax incentives for investors in green bonds and similar preferential tax modes in foreign practice. In Russian reality, we have similar tax incentives in the form of individual investment accounts (IIAs), benefits for long-term ownership of securities, tax benefits for non-state pension funds (NPFs) and a number of others. Such incentives can be provided to both individual investors and institutional investors.

In connection with the active provision of tax incentives to private investors, the issues of assessing their effectiveness are of particular relevance. All of the above benefits imply the purchase by investors of different securities from a wide range of issuers, in different quantities and at different time intervals. Therefore, the use of standard methods for assessing the effectiveness of tax benefits, implying the ratio of the increase in tax payments of the company — taxpayer and the amount of benefits, is not possible.

The aim of this paper is to determine the effects of private investors' investments in securities from the position of the state, as well as to present the author's methodology for assessing these effects. Note that this issue is of particular relevance in the Russian Federation due to the announced reform of the IIAs, in particular — the introduction of IIAs type 3 and IIAs for savings for education.

Structurally, the article is divided into 4 sections. The second section declares six economic effects characterizing the private investors' investments in the securities. The author's method of determining the efficiency of private investors' investments is presented in Part 3. Directions for further research are stated in Part 4.

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### **Economic effects of the private investors' investments in the securities**

In foreign literature, the effects of private investors' investments in securities have been studied to the greatest extent in the United States using the example of IRA accounts. American economists primarily look at the growth in savings of individual investors. However, studies have opposite results. Poterba, Venti, and Wise (1996), Attanasio and DeLeire (2002) find beneficial effects. The latter, in particular, argue that a maximum of 9 % of IRA investments represent a net increase in national savings. Engen, Gale, and Scholz, (1994) look at the same data and find that there is little or no effect. Hubbard and Skinner (1996) take an intermediate position.

According to Feldstein (1995), growth of household savings through the IRA increases equity capital, the return on which increases corporate tax payments. Feldstein's research is continued by Ruggeri and Fougere (1997), arguing that similar effects only occur in a closed economy. In this case, changes in domestic savings are automatically transformed into domestic investment and can affect corporate income and corporate income taxes. The ideas of Feldstein (1995), Ruggeri and Fougere (1997) were not further developed.

In the Russian literature, none of the economists evaluated the investment incentives provided to private investors through investments in securities. The exceptions are the papers by Belomyttseva (2020) on the impact of IIAs on corporate debt and equity capital of Russian corporations and Belomyttseva (2020) on the effectiveness of IIAs.

Based on the opinions of foreign economists and the author's point of view, it is possible to form the following effects (results) of private investors' investments in securities:

- a) an increase in savings / investments in general;
- b) an increase in the equity capital of corporations due to the acquisition of their shares by investors;
- c) an increase in corporate debt of corporations due to the purchase of their bonds by investors;
- d) an increase in corporate profits as a result of attracting additional financing;
- e) an increase in corporate tax payments as a whole as a result of an increase in turnover due to the raising of additional financing;
- f) a decrease in public debt as a result of an increase in budget revenues due to an increase in corporate tax payments.

For points b–e, it is possible to calculate at the level of an individual organization, in total for the sector, on the scale of the economy as a whole, for points a and f— only at the level of macroeconomics.

The first three of the above effects, in our opinion, are in some way intermediate. By themselves, the growth in savings, equity and corporate debt, taken separately, is not indicative and does not indicate investment stimulation. At the same time, an increase in corporate profits, tax payments and a decrease in public debt (points d–f) are already indicative, effective and close the circuit of funds invested by the state in the tax benefit.

### **The author's method of determining the efficiency of private investors' investments**

The fundamental point for the application of assessing the effectiveness of the taxes impact on private investors' investments is to determine the size of the actually provided tax incentive (tax deduction, subsidies, amount of government funding), the sectoral structure of investments by private investors, as well as the effect itself — an increase in tax payments of issuers that have received financing.

The author's methodology for determining the effectiveness of private investors' investments in securities is as follows:

- a) The dynamics of investments by private investors who have a certain type of tax incentive are analyzed, with the allocation of investments in shares and corporate bonds. Quarterly data on a time interval of at least 5 years is recommended. At this stage, conclusions are drawn about the contribution of investors to the debt / equity capital of corporations.

b) Data on the amount of tax incentives granted to investors by type of securities (shares / corporate bonds) is collected. It is possible to use both the data of the tax authorities and the author's calculation, depending on the type of incentive.

c) The structure of the corresponding stock exchange index (index of shares / corporate bonds) is analyzed to reveal the average structure of private investors' investments. In addition to indices, it is possible to use other instruments at this stage, for example, the Portfolio of a Private Investor for shares, calculated monthly by the Moscow Exchange. The allocation of the amount of investment in specific sectors and sub-sectors takes place.

d) Based on the statistical data on the sectoral return on assets, the sums of profits of the sectors and sub-sectors, formed at the private investors' investments, are determined.

e) The increase in corporate income tax for the subsectors due to the private investors' investments is calculated.

f) Data on the assets and turnovers of specific corporations and consolidated groups of corporations, whose securities were acquired by investors, is collected.

g) Based on the share of investors' funds in assets and data on the tax burden of sub-sectors, the increase in revenue of individual corporations and consolidated groups of corporations is determined due to the private investors' investments.

h) The effect of tax incentives is determined:

- the growth in the corporate income tax of the sector is compared with the amount of tax incentives provided. The result is determined, the profitability of the state from the provision of tax benefits in percentage per annum is calculated;
- the increase in corporate tax payments of individual corporations and consolidated groups of taxpayers is compared with the amount of tax incentives provided. The result is determined, the profitability of the state from the provision of tax benefits in percentage per annum is calculated.

i) The amount of public debt is compared with the increase in corporate tax payments, and a conclusion is made about the percentage of decrease in public debt due to investment by private investors.

j) Proposals for reforming tax incentives are being discussed.

As objects for the application of the author's methodology in the Russian Federation for individual investors, we declare IIAs as the most striking and widespread example of the provision of tax preferences, which has sufficient statistical material for analysis. Other tax incentives for individual investors, for example, coupon incentives, long-term securities holding incentives, do not provide us with sufficient material for research.

For institutional investors, NPFs, which actively invest in securities, can be an indicative object for applying the methodology. NPFs were selected due to the availability of tax incentives for taxation of income from investment of pension reserves. Other institutional investors, for example, insurance companies, mutual funds, credit consumer cooperatives, do not have similar taxation features.

## **FUTURE RESEARCH**

As a continuation of the study, it is necessary to test the methodology declared by the author using the example of investments of individual investors (IIAs) and institutional investors (NPFs). To carry out these studies, statistical data from the Bank of Russia, the Moscow Exchange, and the National Association of Non-State Pension Funds should be used.

The debatable point of applying the methodology is to determine the influence of capital gains on the turnover growth of the analyzed corporation. It is also important to determine whether the purchase of a specific share or corporate bond is considered a contribution to a specific corporation or a consolidated group of taxpayers.

It should be noted that the application of the proposed methods is possible not only for investments by private investors, but also for any other type of subsidies, grants, government funding programs, etc.

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# DIGITAL ECONOMY — BANGLADESH TOWARDS DIGITALIZATION

Sunjida Khan\*, Shanjida Chowdhury\*\*, Lam Mim Ahmed\*\*\*

**Abstract.** *The revolution of information and communication technology has played a leading role to transform the global economy towards digitalization: the digital economy. It's considered as a driver of the modern economy to accelerate the economic growth of the nation. Nowadays, the traditional market has been replaced by a digital or online market with greater scope and confidence of the consumers. In the COVID-19 pandemic situation, it has already been proved that there is no alternative market place but online and the whole world solely depends on online economic activities. Using a self-constructed online questionnaire, this study collects data from Dhaka city of Bangladesh where a vast group of consumers are involved with online shopping. Based on both primary and secondary data, the study tries to analyze the digital economic uprising of Bangladesh by investigating the buying behavior of the consumers on online shopping and measuring the significance and obstacles of digital marketing. The article attains with the inference that digitalization has transformed the economy's progression rapidly with significant impact. It may assist the policymakers of less advanced nations to adopt the initiatives of Bangladesh as an example for the expansion of ICT knowledge base economy or digital economy.*

**Keywords:** *consumer, digital economy, online shopping, online marketing, technological transformation.*

**JEL Classifications:** *M21, M31, M37, 033.*

## INTRODUCTION

Digital economy refers to an economy focused on digital computing technology, but it is increasingly viewed as a business-driven economy by internet-based markets and the World Wide Web. The digital economy is often referred to as the Internet Economy, the Modern Economy, and the Web Economy. It is the single most important engine of innovation, competition, and development, and holds enormous potential for entrepreneurs. The digitization of a country's economy not only drives innovation in its service industry but also boosts domestic job opportunities, enabling faster economic growth. In recent years, Bangladesh has seen rapid growth in internet access and cell phone penetration, as well as a rapidly maturing support system for digital entrepreneurs and a young population with an open-minded approach to technology. Digital Shopping has reached a wider level with people's increasing willingness to shop online instead of visiting places physically. Skilled people with smart devices become accustomed to using digital payment methods like debit & credit cards, internet banking, mobile financial services and e-wallets. The ease of hassle-free cashless payment from anywhere has drawn people's attention and they embrace the digital economy every day.

Human society has come to a standstill in the light of the outbreak of the Pandemic Covid-19. Like many other facets of everyday life, people had to find an alternative to the physical buying of their daily goods and other purchases. To deter virus spread, a large amount of the entire customer base has moved towards online transactions. Not only did this change in the purchasing mode trigger a significant shift in customer buying behavior, it also created a distinction in the field of the digital economy. The term Digital Economy seems to boom faster than ever expected overnight at a radical pace.

The Covid-19 pandemic has promoted online shopping activities among Bangladeshi consumers. Previously it took a lot of effort to get the customer accustomed to online shopping but the outcomes were not as effective as the outbreak current phenomenon due to Covid-19. Therefore, our study aims to investigate how the buying behavior of the customers is changing during the Covid-19 and what changes it brings to the economy. One of the changes we have observed that people are approaching this period of isolation and uncertainty is in huge overnight changes to their shopping behaviors. People are changing the patterns of what they're buying, when, and how. Even the promotional activities are shifting towards digital promotion more and more where no human interaction is required. Digital and cashless transactions are becoming the new normal and the safest mode of

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transaction in terms of mitigation of transmission. Online business are booming at the fastest pace possible even the traditional businesses are now adopting online product delivery and services to keep pace with the emerging new normal and this shift is not momentary the more a country will be able to adapt to online businesses the faster it will be able to run in the digital economy race because it's just a matter of time for most of the business to operate in online platforms and the economies will eventually be turned into digital economies. This study mainly aims to investigate the online buying tendency of Bangladeshi customers in this crisis.

## LITERATURE REVIEW

Online shopping means electronic commerce allowing the seller to purchase goods or services directly from the Internet. Internet-based business model Click and Order replaced the traditional Brick and Mortar business model. More people use the web to shop for a range of items, from house to shoes to airplane tickets. Now customers have many opportunities to select their goods and services when shopping online.

According to Huseynov (2014), online retail means financial traction through the internet by keeping the privacy of customers and avoiding physical interaction. Demangeot and Broderick (2010) stated that security and privacy factors are mostly affected by the buying behavior of online consumers. Zuroni and Goh (2012) emphasized that the internet is the media between the customer and online shop and customers use and spend the internet for online purchasing.

Vrender (2016) stated that the evolution of the internet changes the consumer's preferences and their buying behavior depends on the use of the internet. Gaffar (2016) mentioned that the ICT sector playing a significant role for the development of finance and business, thus contributing for the future growth of developing economies like Bangladesh. According to Rashid MH (2020). Bangladesh is moving towards the fourth industrial revolution and the digital economy.

Haque and Ali (2015) emphasized about two factors that determine consumers buying behavior online, one is trust and another factor is benefit. According to Koufaris (2002), both satisfaction and usefulness (web page) increase the intention of customers for more purchases from online. Liao, Chu, Chen, & Chang, (2012) said that online and current historical data like product, price, service, review etc. influence customers re-purchase decisions from online. Gong, Stump, and Maddox (2013) mentioned in their study that customer's demographic features like age, education, income and marital status influenced the online buying decision in China. Haque (2015), product quality, brand image and popularity have a significant effect on online purchasing.

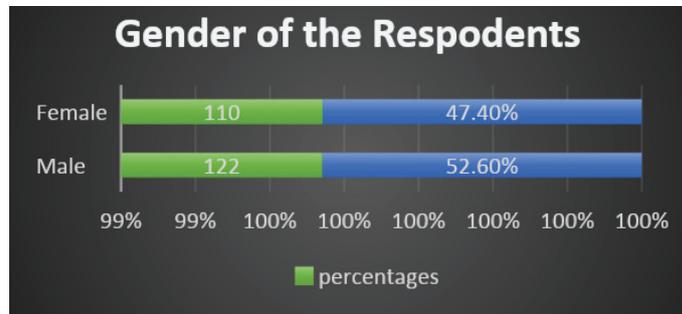
## METHODOLOGY

To examine the online buying behavior of Bangladeshi people during the Covid-19 situation, the study was conducted from both primary and secondary data. A self-developed questionnaire is used to collect the primary information online and various online articles are used as a secondary source of data. Thus, the study is designed as both qualitative and quantitative in manner.

According to many researchers, a convenient sampling method is easy to implement and cost-effective and more common in research that gets a higher response rate (Eze, Manyeki, Yaw, & Har, 2011; Ritchie, Lewis, Nicholls, McNaughton, & Ormiston, 2014). By using a simple random sample technique, the study has collected the response of 232 customers/respondents as primary data through an online survey for the analysis. The questionnaire consisting total 12 items are used to find out the research objectives, questions like, demography, income level, preference reasons, advantage, and disadvantage, buying items, past and present difference, etc. asked to determine and compare the online buying behavior of the customers who belong to different age group and occupations at Dhaka city. Many statistical tools are applied to analyze the primary data, such as; frequency distribution, percentage determination, pie chart, bar chart with the help of SPSS version 25.0. Different popular websites, national and international journals, newspapers, online articles, etc. are represented as the secondary data sources of this study.

## FINDINGS AND DISCUSSIONS

In the context of demography, samples are featured as gender, occupation and income level. Buying behavior of people determined by choice which is associated with their income level, moreover shopping tendency varies significantly from male to female. The following graph traces out the ratio of male to female in our study:



*Figure 1: Percentage of Male and Female*

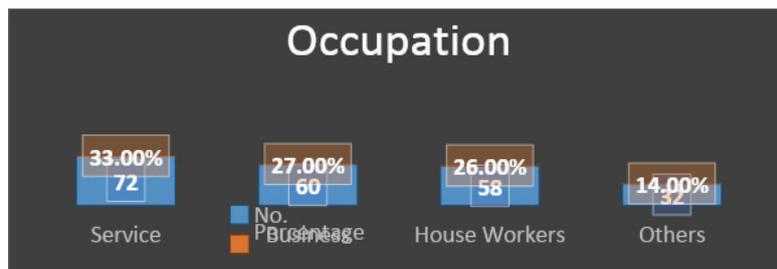
It is a common feature that the shopping tendency of the female is higher than male. However, from the above graph, it is shown that the male and female percentage is almost the same in the survey, male 52.6 % and female 47.4 % which indicates the true reflection of the whole population.

The following table shows the occupation status of our respondents.

Occupation	
Service	72
Business	60
House Workers	58
Others	32

*Table 1: Occupations of the Respondents*

The graph of the respondent’s occupation states that most of the participants are service holders, i: e: approximately 33 %. From the rest respondents, 27 % are business persons, 26 % are house workers and 14 % are involved with other activities like students, etc.



*Figure 2: Occupations of the Respondents*

Another important factor of the demographic is income level, which is expressed by the following table and graph:

Income Level	
1000 to 20,000	18
21,00 to 40,000	47
41,00 to 60,000	42
61,000 to 80,000	48
81,000 to 1,00000	49
Above 1,00000	28

*Table 2: Income of the Respondents*

Among the respondents, income level from 10,000 BDT to 20,000 BDT is the lowest number (18 %) and income level from 61,000 BDT to 80,000 BDT is the highest number (49 %) involved in online purchasing.

It has been observed that to maintain social distance, people have to avoid the crowded market place and they prefer online shopping rather than offline.

Preferred Shopping Manner During Pandemic	
Online	145
Offline	87

Table 3: Mode of Shopping During Covid-19

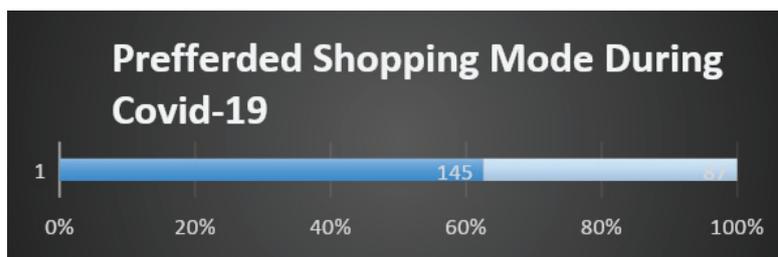


Figure 3: Mode of Shopping During Covid-19

The above graph represents that above 60 % of people prefer online shopping during the pandemic situation and below 40 % like offline.

Table 4 expresses the preferred shopping manner before Covid-19.

Preferred Shopping Manner Before Pandemic	
Online	81
Offline	151

Table 4: Mode of Shopping Before Covid-19

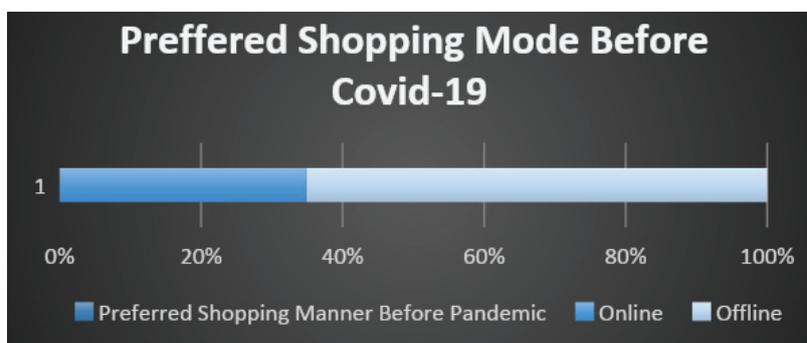


Figure 4: Mode of Shopping Before Covid-19

According to the above figure, very few people, approximately 37 % like online shopping before the crisis.

An important finding is also observed from the table below. It is shown that most of the respondents are habituated with online purchase regularly and occasionally. Very few, only 5 people in our survey have no buying experience from online.

Online Purchasing Frequency	
Frequently	98
Occasionally	129
Never	5

Table 5: Online Purchasing Behavior



Figure 5: Online Purchasing Behavior

The above feature indicates the online buying tendency of the sample, where 227 respondents are used to online shopping.

During Covid-19, people mostly depend on online purchasing. Their demand varies from regular time. The following table and graph explain the purchasing items from online during this situation.

Most Purchasing Item from Online during Pandemic	
Food / Grocery Item	89
Apparel	38
Health kits/Medicine	72
Accessories	23
Others (Travel ticket/Hotel Booking)	11

Table 6: Most Purchasing Items During Covid-19

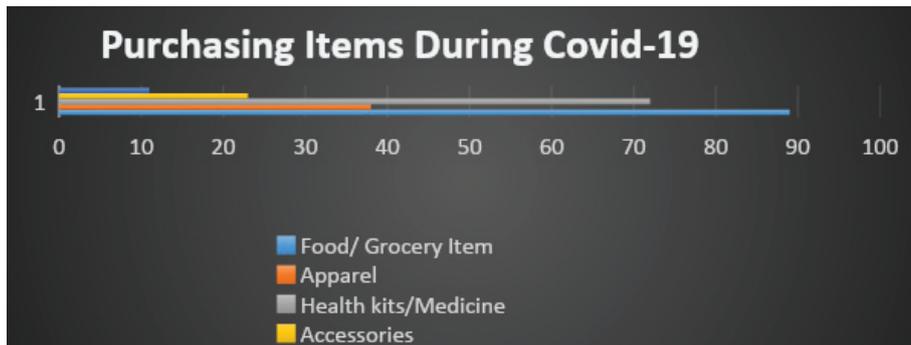


Figure 6: Most Purchasing Product During Covid-19

Most of the respondents depend on online for their food items and medical necessities. However, due to lockdown and other restrictions, the demand for ticket or hotel booking is reduced.

Most Purchasing Item from Online before Pandemic	
Food / Grocery Item	71
Apparel	42
Health Aid	35
Accessories	39
Others (Travel ticket/Hotel Booking)	45

Table 7: Most Purchasing Items Before Covid-19

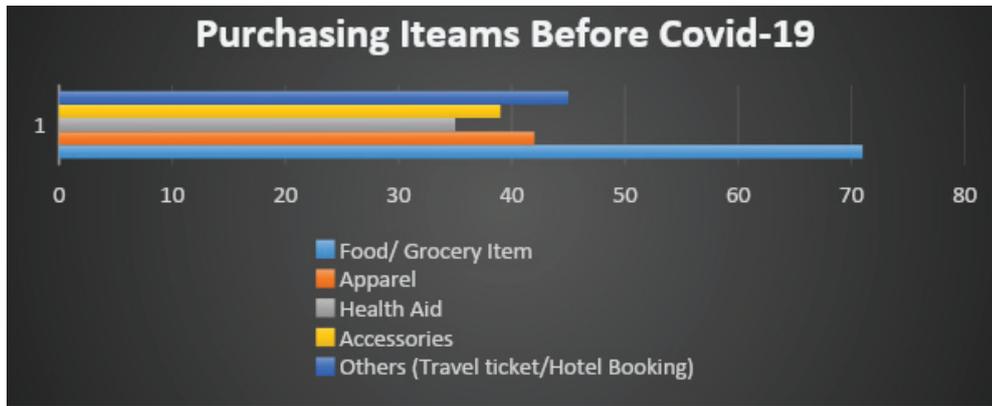


Figure 7: Most Purchasing Product Before Covid-19

The above picture states that before pandemic people preferred to buy travel tickets and hotel booking through online and food items purchase also highest for each situation.



Figure 8: Advantages of Online Shopping

In the issue of the benefits of online purchases, nowadays the most important factor is social distancing. In the study, about 42 % agrees with the advantage of social distance and choose online for their shopping.



Figure 9: Disadvantages of Online Shopping

It is found from the above graph that people mostly dislike online shopping for its high charge rather than offline. Near about 34 % mentioned this factor as major demerits of online.

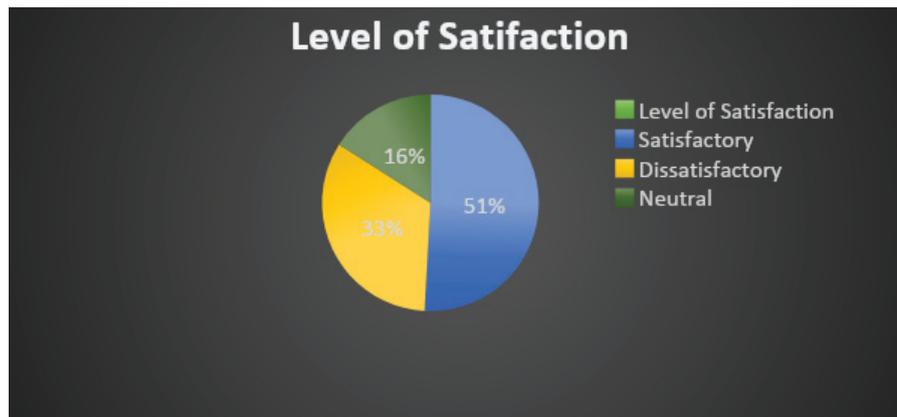


Figure 10: Customers' Satisfaction Level on Online Shopping

In the content of online purchasing satisfaction, almost 51 % are satisfied with their shopping experiences which indicates a technological upward trending to digitalization.

## CONCLUSION

Spreading of the internet, online payment methods, and overall ICT structure determine and drive the online business more rapidly. At present, the penetration rate of the internet and the coverage area of Bangladesh is higher than previously. Despite the various difficulties of online shopping, the factors like price, quality, security, reliability, time-saving, energy-saving, traffic ignorance, etc. are the most prime factors that lead the customers for choosing online shopping. However, Covid-19 adds the essential term 'social distance' that diverse a large number of customers to enhance their intention on online shopping and people have no alternative but online for their basic and daily requirements. A vast number of consumers now depend on online as well as the digital economy and in that sense, it turns the pandemic obstacle into an opportunity to expose us as more digitized. The study reveals the consumer behavior of online shoppers in Bangladesh and it helps the decision-makers and techno-entrepreneurs to synchronize their existing policies and put more emphasis on preparing new policies to explore and enhance the digital trends in Bangladesh. This is surely a good sign for the industry in the long run. However, if the pandemic continues for a longer period, then a large number of smaller e-commerce firms will drop out of the race and that might create a major problem," (Chief Executive Officer of AjkerDeal.com, Fahim Mashroo. 2020).

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# REGIONAL REGENERATION WITH SUSTAINABLE DEVELOPMENT: GOVERNANCE, AND SOCIAL CAPITAL OR COOPERATIVE (MOVEMENT) IN IRELAND, JAPAN AND TURKEY

Tomoko Oikawa\*

**Abstract.** *Regional regeneration and sustainable development should go hand in hand. From this perspective, this paper aims at clarifying a regional regeneration with sustainable development related to governance, and 'social capital' or 'cooperative (movement)'. It is stated that governance and social capital are significant components in the management and operation of industry or business. This paper brings agricultural cooperative (movement) into focus for the topic. With regard to 'social capital', it seems an established concept for universal application. The paper argues two issues: 1. 'Social capital' could be applied for the western society, but not necessarily for the eastern or somewhere else. 2. Cooperative (movement) instead could function with governance for regional and sustainable development. The idea of social capital is formulated as a concept based on the context of western history, politics, and culture. Non-western contexts could require alternative concepts. Here is a tentative proposal, cooperative (movement), and this paper focuses on cooperative (movement) related to Ireland, Japan and Turkey. Published case studies in these countries are used to explore the issues as such. This could expose the distinction between Ireland, Japan and Turkey in cooperative structure which reflects history, politics and culture. It is expected that such a comparative approach to these countries may show partly each country's own socio-economic reality regarding cooperative (movement).*

**Keywords:** *governance, social capital, cooperative (movement).*

**JEL Classifications:** *D, Q, R.*

## INTRODUCTION

Sustainable development has been getting into a central scheme to protect the planet. Indeed, the United Nations has emphasized that cooperatives are sources of sustainable development, and this importance can be widely noticed, mainly, in the agricultural sectors (International Cooperative Alliance, 2016). However, there are a wide range of approaches to it. There is very little agreement on what sustainable development means and even less agreement on what is required to promote a sustainable future (Baker, 2016:7). This paper focuses mainly on agricultural cooperative (movement), which is a local community-based and grassroots institution (movement). The cooperative (movement) is generally bottom-up based and interrelated with municipality or state governance, though not always so. The concept of cooperative originated in England, then the idea of cooperative influenced dairy farmers in Ireland. Irish dairy cooperative has evolved and changed in structure through time. (Murtagh & Ward, 2011). The origin of agricultural cooperative in Japan dates to the early twentieth century, the era of the Great Depression. It was state leading. The cooperatives in Turkey were originally established by the leadership of Atatürk during the early Republican period (Özdemir, 2005). These different processes of cooperative history may also suggest that each of these countries has its own characteristics in its cooperative (movement).

The paper is structured in the following way.

1. Literature review: sustainable development, governance and social capital
2. Origin of cooperative movement in England
3. A development of Irish cooperatives
4. Formation of agricultural cooperatives and cooperative movement in Japan
5. Cooperatives in Turkey
6. Conclusion

### **Literature review: sustainable development, governance and social capital**

#### (1) Sustainable development and governance

Sustainable development refers to three dimensions — ecology, economy and society (Baker, 2016). This is an aspect that sustainable development is an essentially contested political concept (Lafferty, 1995). According to the authoritative Brundtland formulation (WECD, 1987), sustainable

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development means the long-term transformation of basic aspects of the present industrial economic system. While this requires the construction of a new development paradigm, framed within the ecological limits of the planet, its desirable characteristics change over time, across space and location and within different social, political, cultural, and historical context (Baker, 2016). For this direction, governance is a pivot by combining different styles — hierarchies, market and networks (Baker, 2016). The EU conceptualized a system of multi-level governance, new governance, which is distinguished from the established features public/private partnerships and policy communities in policy making at various institutional levels. It includes not only political institutions, but also other actors involved in such network governance. It stressed the particular importance of social capital (Baker, 2008).

This aspect as such is to be discussed from the different aspects in terms of history, politics and culture in three countries in this paper, how social capital facilitates with governance. This involves a question whether the idea of social capital is applicable in the case of Ireland, Japan, and Turkey.

## (2) Social capital

Many articles maintain the view that social capital and governance play a significant role in collaborating for regional development with sustainability (Gorriz, Secco, Pisani, 2016; Borg&Toikka, 2015; Youngmin, Bush & Blanchard, 2016, more). In fact there is a distinction among their definitions of social capital about whether it includes trust. Also, one of these studies pointed out that the extant literature has not systematically conceptualized what forms of social capital exist in the context of collaborative activities (Oh & Bush, 2016). Further there is a critical view that Robert Putnam's social capital is too society-centered and undervalues state agency (Lowndes & Willson, 2001). The research of cooperatives (movement) in Ireland, Japan and Turkey (from published papers based on case studies) shows the crucial importance of state or local government support and/or intervention.

Here alternative view of social capital would be suggested that 'social capital' can be checked by the different aspects in terms of history, politics and culture. Then a question arises whether the idea of social capital is applicable in the case of Ireland, Japan, and Turkey.

First of all, such different approaches to social capital will require us to clarify what is 'social capital' basically. Basically 'capital' implies an accumulated sum of money, which to be invested in the hope of a profitable return in the future. In the 1960s the idea of capital expanded to cover people and their capacities, developed by Theodore Schultz (1961), and then by Becker (1964). Various capitals were thought of in strictly economic terms; their value was measurable, their worth could be added up and compared, the relationship between inputs and outputs was a direct one, and any changes in value could be accounted for in terms of a common currency (Field, 2003). Since the 1980s profoundly influential three leading social scientists, Pierre Bourdieu, James Colman and Robert Putnam, developed 'social capital' into a social science concept. At present 'social capital' is explained as follows: Relationships matter. By making connections with one another, and keeping them over time, people are able to work together to achieve things that they either could not achieve by themselves, or could only achieve with great difficulty. People connect through a series of networks and they tend to share common values with other members of these networks; to the extent that these networks constitute a resource, they can be seen as forming a kind of capital (Field, 2003).

People's social ties or relationships may have changed greatly in the historical context, before and after the Industrial Revolution. Emile Durkheim in the nineteenth century showed a contrast between the 'mechanical solidarity' of pre-modern societies on the basis of similarities in the status and routines, and the 'organic solidarity' of the capitalist societies on the basis of mutual advantage. This approach to the idea of social ties could have evolved into the 'social capital'.

At present there have been a lot of studies carried out about governance and social capital as a pair of components for sustainable development. How the idea of people's social ties is formulated appears the reflection of socio-economic transformation in their historical context. Such a process to 'social capital' could be a result of western historical, political and cultural experiences. Japan did not historically experience a western way of socio-economic or cultural development, either. Turkey has developed socio-economic and cultural structure in the different historical passages. In reality,

cooperative (movement) in Japan and Turkey is taking leading action with collaborative governance for regional regeneration. It has values and principles. It has vision.

### **CONCLUDING REMARKS**

Social capital and governance are significant components for sustainable development. However, Japan and Turkey, and could be non-western countries, may require alternative concepts instead of social capital. The essential distinction between social capital and cooperatives is linked to values, principles and vision, most importantly.

### **ORIGIN OF COOPERATIVE MOVEMENT: THE ROCHDALE PIONEERS SOCIETY**

The Rochdale Pioneers Society was founded on the evening of December 1844 by twenty-eight poor weavers. Although other co-operatives preceded them, the Rochdale Pioneers' cooperative became the prototype for societies in Great Britain. Their ideas were incorporated in the rules of the Society. Their principles are passed down to ICA.

- (1) Democratic control
- (2) Open membership
- (3) Fixed or limited return on capital subscribed.
- (4) Dividend on purchase
- (5) Trading strictly on a cash basis
- (6) Selling only pure and unadulterated goods
- (7) Provision for the education of the members
- (8) Political and religious neutrality

These principles show their ideals which reflect the ideals of Robert Owen. These Rochdale principles went on to gain universal acceptance. They have been adopted with modification, in most countries as the basic ideological structure for a wide variety of cooperative activities (Fairbairn, 1994; Bolger 1977).

### **A DEVELOPMENT OF IRISH COOPERATIVES**

Irish dairy cooperative has evolved and changed in structure through time. (Murtagh & Ward, 2011). "Most vital is that the members should receive the best possible benefits from the cooperative's activities. Ownership of external companies should be only pursued if this increases benefit to members. The cooperative also should remain in primary control. Under this categorization, the largest Irish cooperatives could be understood departing from the cooperative model' (Murtagh & Ward, 2011, p. 162)".

It is described that there are four development phases in the Irish dairy industry. During phase one, from 1880 to 1920, a large number of creameries existed and the industry grew rapidly. With economic depression, in the second phase, from 1920 to 1950, growth stagnated. Direct state intervention followed controlling the number of creameries, also aiming to improve production efficiency and milk quality. The third phase saw a resurgence of growth, from 1950 to 1983, influenced by EEC accession and the Common Agricultural Policy (Murtagh & Ward, 2011).

In Ireland it has been the dairy industry since the 19<sup>th</sup> century that has remained most prominent in terms of both industry and cooperative. The idea of cooperative in Ireland was influenced originally by the Rochdale Pioneers. In 1894 the Irish Agricultural Organisation Society (IAOS), which was established by Horace Plunkett with his supporters, promoted dairy cooperatives. His catchword was "Self Help" and "Cooperative Parish", for which establishing dairy (creamery) cooperative was promoted. The basic distinction of IAOS from the English cooperatives was: the former was producer cooperative and the latter consumer one.

During this time there were two distinctive groups, one is private capitalists and the other organisers and supporters of IAOS. The former was represented by former butter trade personnel and England-

based butter retailers. Both of them were operating within the economic realm of the dairy industry, which were occupied by their creameries, and they became competitive in activities (Jenkins, 2000, 2004). Further their competitive activities were mingled and juxtaposed with ‘Irish’ and ‘foreign’ or ‘nationalist’ and ‘unionist’ and further ‘class differences’. These are subsumed under cultural and political discourses and representation of identity in late 19<sup>th</sup> and early 20<sup>th</sup>-century Ireland (Jenkins, 2004).

It is also argued that Irish farmers did not take ownership of their cooperative, and they did not identify strongly with the cooperative ideology from the start. They left the running of the cooperative to management. They were interested only in milk supply, that is, only in milk price. It was commonplace that no-cooperative members (free riders) supplied milk (Jenkins, 2004).

Jenkins (2004) concluded: The challenge of dairy cooperatives to capitalist commerce was flawed in practice in Ireland, undermined further by individualism...it was far from ineffective in presenting an alternative for farmers.

At present there have been new generations of cooperative movement (Moroney, A., Carroll, B. and McCarthy, O., 2018). It seems that these cooperatives are at the start and sporadic. They have issues; (1) Support from government for funding for managerial or specialist support at key early moments which will push emerging initiatives on to the next level. (2) The current system is expensive and a key blockage in meeting the goal of having community-based organizations adopt the cooperative structure.

### **Formation of agricultural cooperatives and cooperative movement in Japan**

#### **(1) Origin and history**

Japanese agricultural cooperatives are comprehensive, which conduct credit business (savings, loan), economic business (sale of rice, vegetables, every kind of agricultural products), cooperative purchasing (fertiliser, feedstuff, agricultural machines, other commodities for living), mutual aid business (various life mutual aids, automobile mutual aids, etc), gas station, hospital. This configuration is derived from ‘zoning’, in which farmers joined as a whole agricultural cooperative in the district. In the West specified agricultural cooperative by business and by kind of crop is common (Ōtahara, 2013).

Prototype of cooperatives in Japan emerged in the first half of the 19<sup>th</sup> century (late Tokugawa shogunate). History shows two cooperatives in that era, one is cooperative for mutual aid organized by Ninomiya Sontoku and the other by Ōhara Yūgaku to help farmers. Their rule of organizations is based on moral and ethics. In the early 20<sup>th</sup> century the Great Depression caused agricultural depression. Thus, rural economic rehabilitation movement had been the central issue for agricultural and fishing villages. To overcome the

Depression, government executed the ‘Industry Cooperatives Expansion Plan’, which covered every city, town, village and every farmer, including comprehensive business. Its organisational ratio was 75 per cent in 1935. This is the origin and the base of Japan Agricultural Cooperatives. The cooperatives correspond each to three levels of government agencies, with municipality (659 single cooperatives), prefecture, and state. Further they function as administrative complement (Ōtahara, 2013).

#### **(2) What has been done**

It is the point that Cooperatives are organized essentially aiming at supporting economically disadvantaged people. In actuality, they support agriculture in many ways — sale, purchasing production materials, provision of information, coaching, technical supervision by permanent or visiting staff, and business. They meet needs for both large and small farmers, for elderly farmers, and farmers with a side-job. Apart from agricultural support itself, they support people’s everyday life necessities in the region as mentioned above. Notably, welfare work (Agricultural Cooperatives for Health and Welfare) is particularly helpful in rural areas where the aging population is increasing. At the municipality level, they provide regular health checks annually, at the prefectural level, they

provide clinics and hospitals, and welfare work for elderly people, in particular (Kawamura, 2016) (JA Zenkōren).

Agricultural Cooperatives have been thoroughly engaged and involved in agriculture and people both economically and socially. Their bond is with people, different from corporations which bond with money. Further, corporations target maximum profit and do not expand business if profit hits the limit. Cooperatives expand business as long as income is over expense. It is notable that cooperatives contribute to regional service (Kawamura, 2016).

Apart from agricultural cooperative, there have been many cooperative movements for local regeneration in Japan. Some cases are led by a talented person (leadership) and some other cases by municipalities (leadership) both based on local community's cooperation. Japan agricultural cooperatives have contributed basically to the regional regeneration through their business. It is notable that the cooperatives have accumulated a lot of useful and precise information, in terms of conversion of agricultural land, land use adjustment and village farming which have enabled them to contribute to administration.

It would be a natural consequence that cooperatives as such should be a core of local regeneration, managing and challenging issues of community or village. They have a link with Co-op (consumer cooperatives), and also a local organization of small and medium enterprises. Sometimes these three cooperate for local economic regeneration. However, the present government is planning to dismantle this comprehensive agricultural cooperative and to trust each part in corporations. This is the reality of Japanese agricultural cooperatives. This is far beyond managerial challenges to cooperatives.

## COOPERATIVES IN TURKEY

Exploring a number of articles, this section will try to describe the issues the cooperative (movement) in Turkey is facing, from the viewpoint of governance and social capital.

In Turkey, cooperative movement were established during the early Republican period by the leadership of Atatürk. 'Almost all Turkish schools have co-operatives which are staffed and managed by the pupils, says Dr. Meyering. These cooperatives serve the interests of the whole student body rather than only the members, and the profits are devoted to financing other school projects' (Meyering, 1948).

Today there are around 90 000 cooperatives and 9 million members in Turkey, accounting for 10 % of the population (Özdemir, 2013). The article "Cooperative-shareholder relations in agricultural cooperatives in Turkey" (Özdemir, 2005) consists of the results of a survey among the members of agricultural cooperatives in Tekirdag province. Tekirdag is situated in the European part of Marmara Region in North-Western Turkey. The total number of agricultural cooperatives is 11,449, which encompasses 4,631,270 farmer-members on economic, social, and industrial development of the country and the democratization of the agricultural sector and the community (Özdemir, 2005).

Among them ADCs are fully democratic organizations. They neither receive any financial support from state organs nor is their operation under state guidance. According to Law, however, the Ministry may provide help in their establishment and organization, give technical and financial support, and help in running the accounting and auditing systems (Özdemir, 2005). While the research shows the existing deficiency in terms of members' active participation in general meetings in general, the survey reveals ADCs was the most prominent type of cooperative in terms of participation into cooperative activities and trading with their cooperatives; attendance to and speaking in general meetings, nominating themselves for administrative posts, and favoring elections for managerial positions. Members' awareness of cooperative philosophy is one of the determinants of cooperative success. 91.30 % of ADCs members think that the most important feature of the cooperation lies in voluntary establishment and self-administration. As for economic relations ADCs were 100 % engaged in trading with their cooperatives.

The article (Özdemir, 2005) concludes: ADCs are in a better position than the state-driven cooperatives with respect to member cooperative relations.

The research of orange producer organizations in Turkey (Oral & Akpınar, 2017) may show the orange producers' great perception of cooperative organization. According to the research, 71.8 % of the total number of the producer enterprises is occupationally economically organized members of the professional and economic organizations. 61.3 % of the professional organization with the highest number of memberships was designated as the agriculture chamber. However, 79.7 % of producers stated that they do not have any information about the services provided by professional or economic organizations, but they also stated that 81.1 % of these producers did not benefit from the services provided. Besides, 74.6 % of producers have stated that producers do not have a positive conviction that they can get their products together without a cooperative organization.

"Women's cooperatives in Turkey" (Özdemir, 2013) are established with bottom-up movement, and developing rapidly since the 2000s. These are mostly established as enterprises, small handicrafts, agricultural development and consumption cooperatives. The most significant aims of these cooperatives are teaching women how to earn money by participating in production, social aims such as education, fighting against poverty, creating employment, and revealing local values.

The study "Factors affecting forest cooperative's participation in forestry in Turkey" (Atmiş, Günşen, Lise, Lise, 2009) was carried out with 71 forest cooperatives in the Kastamonu province, located in the Western Black Sea Region. It was found that the most important factors affecting forest cooperative's participation in forestry are: (1) member involvement, (2) forest ownership and administration, and (3) harmony within cooperatives and between cooperatives and the state. These three factors explained 59 % of participation within a cooperative. The findings (1) and (2) correspond to the first article. The finding (3) is interesting. Harmony may suggest mutual dependence based on a kind of trust. The reality shows, however, that it has been difficult to achieve these goals. The narrow business focus of agricultural development cooperatives acting in forestry has resulted in a loss of their collective and participative nature. They only focus on wood as the main product, and they are not able to create any added value to the wood sold. Furthermore, cooperatives cannot give enough importance to education and research. They are plagued by inadequate legislation, and suffer from a lack of professional managers. In order to overcome these problems cooperatives have formed higher level regional cooperative unions of which there are 27 in Turkey. These cooperative unions, in turn, are under the umbrella of the Central Union for Turkish Forest Cooperatives (ORKOOP) with its main office in Ankara. ORKOOP consists of 1341 cooperatives and 147,529 forest villagers. OR-KOOP has been able to make cooperatives more active in the forest villages, but still despite some improvements in the area of research, development, coordination, finance and sales only limited progress has been made towards solving the problems of the cooperatives or forest villages.

While it is important that cooperatives act together in an organized way in order to become successful, progress will mostly have to rely on strengthening the functioning of the forest villages cooperatives.

This study shows the ideal and actuality of cooperatives. It may suggest categorically the right direction to be taken, ultimately strengthening and relying on the functioning of the forest villages cooperatives.

It is acknowledged that only four articles about the case studies of cooperative (movement) in Turkey may not represent the features of Turkish cooperative (movement). However, we could detect a whole picture from a piece of evidence.

## CONCLUSION

Social capital may not be applied for non-western countries, such as Japan or Turkey. (1) Social capital is itself abstract. Technically speaking, it can be applied to any kind of movement. Ultimately, its goal can be harmful for non-members and beneficial only for members. (2) Cooperative (movement) has a clear vision, ie. Sustainable Development Goals, with values and principles, for which members work together. It is in continuous movement or evolution.

While the paper argues the importance of governance and cooperative, instead of social capital, for regional regeneration in Turkey and Japan, the idea of social capital could be applied to Ireland.

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# IMPACT OF THE LEVEL OF ECONOMIC DEVELOPMENT ON THE GENERATION OF PLASTIC WASTE WITHIN THE EUROPEAN UNION

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**Abstract.** *In 2015 in New York City the UN voted and adopted the so-called “Sustainable Development Agenda – 2030”, which includes 17 main goals, related to transformation of the world and the achievement of “a better and more sustainable future for all”. These aims are focused on “global challenges” which both developed and developing countries face. One of the main issues that is affected by the programme is environmental degradation. Today the challenge that all humanity stands before is how to reduce the negative influence that human beings have on the nature around us through our day-to-day activities. The main pollutant, which is going to be investigated, is plastic — one of the principal compilers of the “World Waste Crisis”. The aim of this paper is to evaluate the impact of the level of economic development on the generation of plastic waste within the European Union, measured by regression. Therefore, this paper investigates the statistics data of generation of plastic waste in EU countries for the period 2004–2016 and the trends in the gross national income per capita for all investigated countries. The results of this paper suggest that the impact of the level of economic development has a direct influence on the purchasing power of society, and hence the positive dependence between consumption growth, waste generation and one of the world’s most widely used materials — plastics.*

**Keywords:** *generation of plastic waste, economic development, regression, European Union, World Waste Crisis.*

## INTRODUCTION

We live in a fast-paced and high-tech world. There are thousands, millions of creative ideas, generated across the globe only in one single day. The development that humanity strives for every minute undoubtedly gives us many benefits, which have facilitated and continue to help our way of life. Although creating a much fuller world of possibilities and innovations has its positive meaning negative effects are not missing. There are many socio-economic issues like poverty, child labour, corruption, unemployment, illiteracy, energy crisis, inflation, overpopulation and unequal income distribution. However, today we are facing another enormous problem — the World Waste Crisis and the pollution that results from it. With no doubt, we can say this is one of the biggest problems for our ecosystem. It depicts destroying the Earth and its resources and leading to extremely unfavorable conditions not only for living, but also even for surviving.

In 2015 in New York City in order to take a step towards solving the problems that affect humanity as a whole, the United Nations voted and adopted the so-called “Sustainable Development Agenda – 2030”. This strategy includes 17 main goals, related to transformation of the world and the achievement of “a better and more sustainable future for all”. (United Nations, n. d.) These aims are focused on “global challenges”, which both developed and developing countries face. One of the main issues that affected the programme is also the environmental degradation. Today, the challenge that all humanity stands before is how to reduce the negative influence that we, as human beings, have on nature around us through our day-to-day activities and also how to develop a more sustainable sparing nature around our economy.

## LITERATURE REVIEW

The main pollutant, that is going to be inquired into in this paper, is the PLASTIC — one of the greatest discoveries in human history and at the same time one of the most dangerous materials for the environment and the health of every individual on the Earth.

The history of this “incredible good” is long, but the important year in the timeline is 1907 when “the first synthetic thermoset polymer (a phenol-formaldehyde (PF)), known as Bakelite, was obtained in 1907 by Baekeland through the polycondensation of phenol with formaldehyde”. “The commercial development of this PF material is considered to be the beginning of the truly synthetic plastic era and of the plastic industry”. (Feldman, 2008) According to the Science History Institute, this breakthrough “was revolutionary. For the first time human manufacturing was not constrained by the limits of nature. Nature only supplied so much wood, metal, stone, bone, tusk, and horn”. (Science History Institute, n. d.)

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As the world’s population continues to grow its needs increase as well. Finding the ways to meet the needs is crucial for increasing the chances for survival and continued development. That is why humans should create new ideas, which to turn into real materials, parts of the new economy type in the world. Since its inception, the plastic is gaining popularity and quickly became marketed as an innovative, much more practical, inexpensive and affordable material from all levels of the society. Its features make it easy to process and shape, which in turn makes it a substitute for many of the more expensive and hard-to-get materials used in the past.

At the beginning, from one side, “this development helped not only people but also the environment. Advertisements praised celluloid as the saviour of the elephant and the tortoise. Plastics could protect the natural world from the destructive forces of human need”. (Science History Institute, n. d.)

From the other side, we have been using plastic for years and years now and its footprints are observable almost anywhere. Because of its usage, we are witnessing terrible negative impacts towards nature. Due to the impossibility of its complete degradability today, we are facing an enormous problem. The impact on land and water can see for the both. “Due to the high disposability and low recovery of discharged materials, plastics materials have become debris accumulating in the environment”. (Rocha-Santos & C Duarte, 2015) All this affects life throughout the ecosystem. Animals die because of strangulation or poisoning after plastic waste ingestion. Polluted soil and water affects all consumers of these land resources. In this observed the destruction of life around us, not only of humanity, but also of the other inhabitants on this planet.

According to early research from Rochman, Cook and Koelmans (2016) since “Captain Charles Moore introduced the world to the “Great Pacific Garbage Patch” in the mid — 1990-s” “there has been increasing interest from scientists, the public, and policy makers regarding plastic debris in the environment” (Rochman, Cook, & Koelmans, 2016). The truth that it is one of the main culprits behind the deaths of so many living creatures, as well as global warming, ocean pollution and climate change, is clear. Recently, there has been an increasing awareness and active involvement of people around the world in the plastic case. Many other studies from different scientists have shown that plastic waste does have irreversible negative impact on the environment as well.

As stated in the scientific publication “Plastic Pollution” (Ritchie & Roser, 2018) world plastic production grows from some 2.00 million tonnes per year in 1950 to 381 million tonnes in 2015. (Chart 1) That means over these 65 years, “annual production of plastics increased nearly 200-fold. For context, this is roughly equivalent to the mass of two-thirds of the world population” (Ritchie & Roser, 2018).

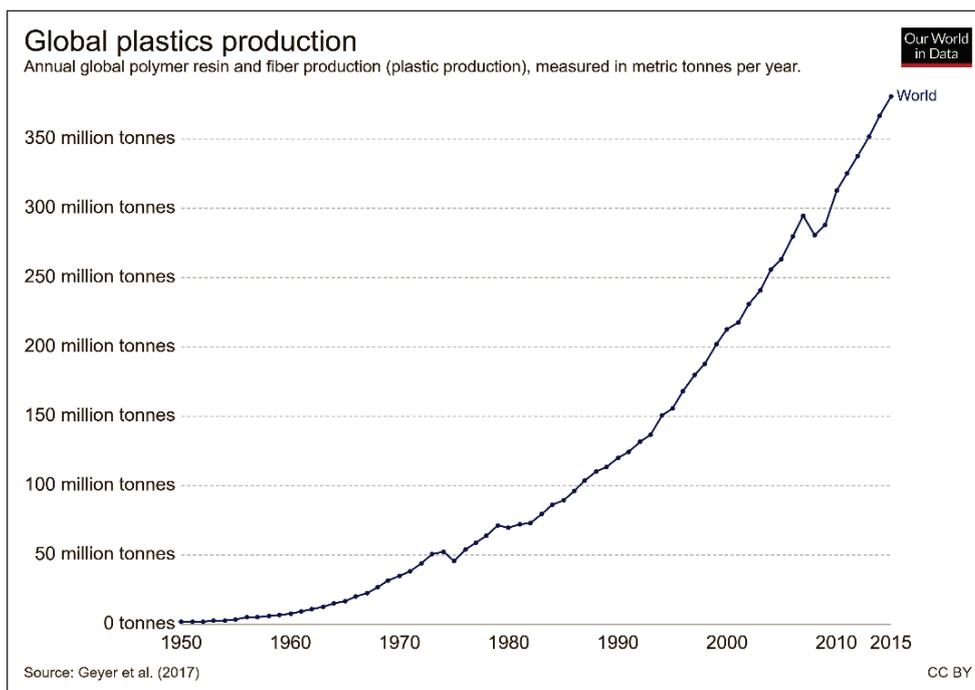


Figure 1: Global Plastic Production

Source: “Our World in Data”

As it has become clear, plastic has many physical advantages over other materials. Due to its low-cost, it is widespread and used. What exactly affects the usage of plastic and what are the ways of its reduction? According to Speth's article (1988), "today's pollution is integrally related to economic production, modern technology, life-styles, the sizes of human and animal populations, and a host of other factors" (Speth, 1988). From the study's standpoint, becomes clear that one of the main factors influencing the plastic use and plastic waste creation is the economy.

The aim of this paper is to evaluate the impact of the level of economic development on plastic waste generation. The chosen objects of study are the countries of the European Union. Therefore, this paper investigates the statistics data of generation of plastic waste per capita in EU countries for the period 2004–2016 and the trends in the gross national income per capita for all investigated countries.

This study is designed to assess the hypothesis that the higher the incomes of the population, the more plastic waste is generated, due to the increased purchasing power and the afford to buy plastic items which after consumption becomes waste.

Before understanding the connection between gross national income and plastic pollution per capita in the EU first, we are going to consider where in the world plastic pollution rank list is it.

In the article by Lebreton and Andrady (2019), we could see the main plastic pollutant for 2015 year (Fig. 1). It shows that the Asian continent was "the leading generating region of plastic waste with 82Mt, followed by Europe (31Mt) and Northern America (29Mt). Latin America (including the Caribbean) and Africa each produced 19Mt of plastic waste while Oceania generated about 0.9Mt." (Lebreton & Andrady, 2019).

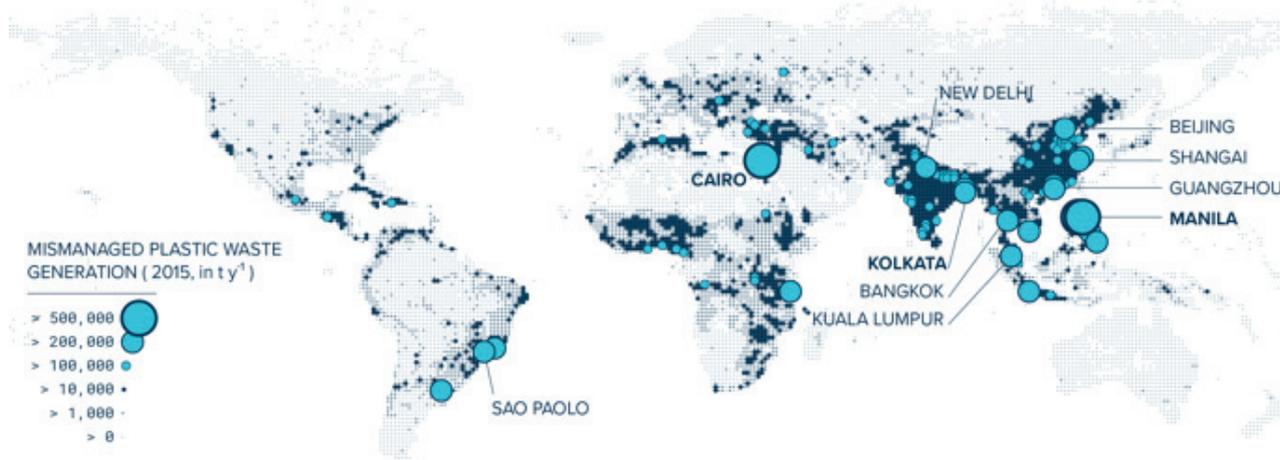


Figure 2: Global mismanaged plastic waste generation in 2015

Source: "Palgrave communications; Humanities Social Sciences"

According to another publication, related to the topic, as might be seen, Europe is at the forefront of plastic pollution (Buchholz, 2019).

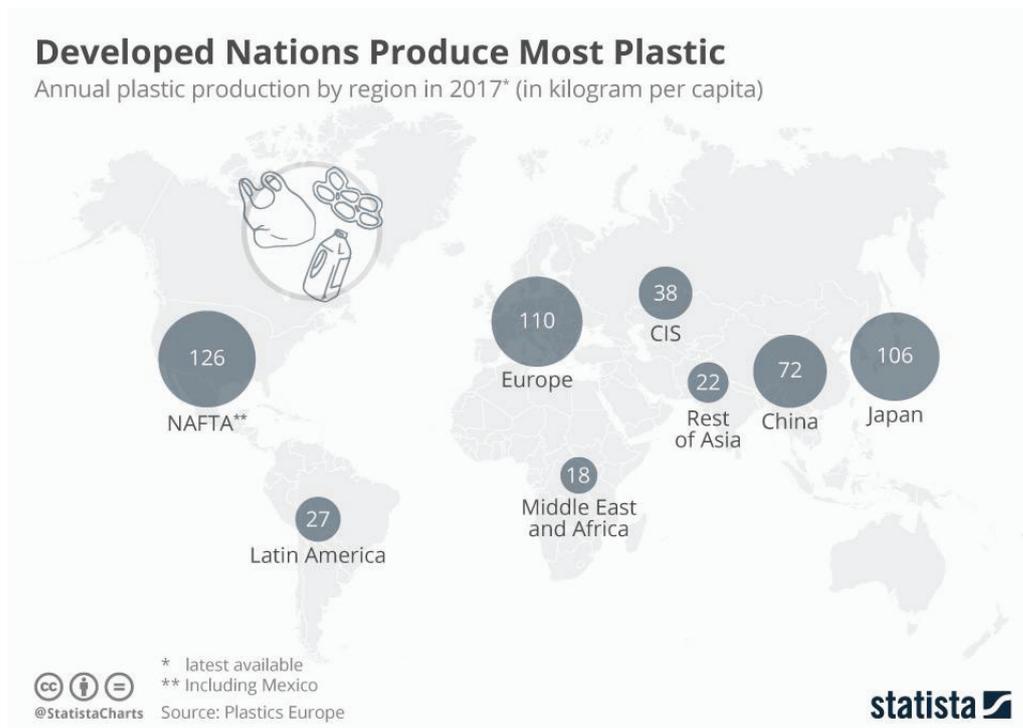


Figure 3: Developed Nations Produce Most Plastic, Annual plastic production by region in 2017 (in kilogram per capita)

Source: “Statista”

The figure shows that regions like NAFTA, Europe, Japan and China generate the most plastic waste in 2017.

The presented data, observing a strange phenomenon regarding the level of pollution from the states all over the world. According to scientific explanations “high-income countries typically have well-managed waste streams and therefore low levels of plastic pollution to external environments”. Then why despite the fact that the countries from the EU are committed to more innovative and environmentally friendly products and creates and develops sustainable development policies, a number of studies showed that it is one of the main generators of plastic waste. Does the level of economic development have a real impact on it?

## METHODOLOGY AND RESULTS

To determine whether there is a connection between the economic development and plastic waste generation in the European Union region, the strength of the relationship between generated waste per capita and gross national income per capita is going to be evaluated. The calculations are based on the period 2004–2016.

The methodology is based on linear regression (“Panel Least Squares”), using panel data that combines two components — country fixed effects and period fixed effects. This is a type of statistical measurement “that attempts to determine the strength of the relationship between one dependent variable, in this case this is the “*waste per capita*” and a series of other changing variables — known as independent variables”, (Investopedia, 2019) (in this case the “*gross national income per capita in USD*” for all counties among the European Union).

Linear Regression Analysis is the simplest form of a regression analysis that uses one dependent variable and one independent variable. In this simple model, a straight line approximates the relationship between the dependent variable and the independent variable. (Devault, 2019) The core idea is “to obtain a line that best fits the data” (Swaminathan, 2018).

For the calculation should be used the following equation. To find out the dependent variable — plastic waste per person, it is need to multiply “beta” by gross income per capita for the respective country and to add the constant, country fixed effect (which is same for the all years but different by county) and period fixed effects (which is same for all countries but different for years).

$$WASTE_{CAP} = \beta * GNI_{CAP} + C + [CX = F, PER = F]$$

where  $WASTE_{CAP}$  — Plastic waste per capita;

$GNI_{CAP}$  — Gross national income per capita;

$\beta$  — The slope of the regression line (how much  $Y$  changes for each one-unit change in  $X$ );

$CX = F$  — Country effects fixed;

$PER = F$  — Period effects fixed;

$C$  — Constant.

The constructed panel data set for all 28 EU member states is covering the period 2004–2016 with a two-year interval. The conduction of the analysis is with bi-annual data for each country, retrieved from Eurostat (Eurostat, 2019) and World Bank Group (US). (World Bank Group, n. d.).

The table below shows the results after the calculations according to the given formula (Table 1).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GNI_CAP	0.001758	0.000605	2.907010	0.0042
C	-25.88012	19.14305	-1.351933	0.1783
Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
R-squared	0.587895	Mean dependent var	29.66837	
Adjusted R-squared	0.500866	S.D. dependent var	22.79400	
S.E. of regression	16.10382	Akaike info criterion	8.556423	
Sum squared resid	41752.62	Schwarz criterion	9.141800	
Log likelihood	-803.5294	Hannan-Quinn criter.	8.793412	
F-statistic	6.755206	Durbin-Watson stat	1.773725	
Prob(F-statistic)	0.000000			

Table 1: Panel Linear Regression Analysis

The obtained results show a statistically significant positive relationship between the two variables — GNI per capita and Generate Plastic Waste per person. At a first glance, the relationship may seem very weak judging by the value of 0.001758. In this case, beta’s value shows how much the plastic waste per person is going to change if the unit of income changes in absolute terms. This means that if income per person increases by 1\$ the generated plastic waste per person is also going to increase, but with 1.7 grams. If we assume that the total income for the study period increased by \$1000, this means that the generated amount of plastic waste per person increased by as much as 1.7 kilos, which is a high amount considering that this is only a fraction of the kinds of waste that humans make. If we take as example a county like Estonia and tracing how much income per capita had changed during the period 2004–2016, it could be found that there is an increase of \$16 490. This

in turn means that the generated plastic waste per person has increased by 28 kilos — enormous waste quantity only for one person. From this calculation, it could be concluded that the „ $\beta$ “ parameter is statistically significant and the hypothesis is proven.

As we see from the table (Table 1) the value of “R-squared” (the coefficient of determination, which shows the model’s ability to describe real data) is approximately 59 %. Therefore, the interpretation of the significance of the created case study model might be described as “strong”. The Adjusted R-squared value is 0.50, with approximately 8 % difference from the R-squared. If we had more independent variables, it would have stronger significance for the case. Still this value has a positive meaning.

Due to the fact that the panel regression model is characterized by providing a more detailed analysis, we could find different features related to plastic pollution in the observed countries from the European Union. In the used method, country effects describe country-specific characteristics not covered or described by factors in the model. The data from the attached table express what the deviations from the average pollution values for the EU as a whole (Table 2).

As could be seen, countries like Denmark, Finland, France, Germany, Luxembourg, Malta, Netherlands, Spain, Sweden and the United Kingdom have negative values, which means that pollution in these countries is less than the Union’s average rate due to unexplained, but county-specific reasons. For example, Denmark has 35 kg less plastic waste per person than the average for the EU.

The rest countries — Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia and Slovenia have positive values, which means that the plastic pollution in these counties is more than the Union’s average rate, again due to the unexplained, but county-specific reasons. For example, Belgium has 40 kg more plastic waste per person than the average for the EU.

Looking at the time effects table, we could see how plastic pollution has changed over the study period. It represents the total deviation for all countries over time relative to the average amount of waste per person. Time-fixed effects are general, not country-by-country, but they change over time. The obtained results allow us to observe a clear and stable reduction of waste per capita during the observed period (Table 3).

	DATEID	Effect
1	2004-01-01	11.66129
2	2006-01-01	11.13679
3	2008-01-01	0.711574
4	2010-01-01	0.219681
5	2012-01-01	-7.801961
6	2014-01-01	-5.711779
7	2016-01-01	-10.21559

Table 2: Time fixed effects

	EU_COUN...	Effect
1	Austria	5.066285
2	Belgium	40.12644
3	Bulgaria	14.40465
4	Croatia	6.973825
5	Cyprus	27.82610
6	Czechia	6.628902
7	Denmark	-35.52086
8	Estonia	27.25305
9	Finland	-25.09981
10	France	-15.50499
11	Germany	-20.85822
12	Greece	11.77326
13	Hungary	7.034015
14	Ireland	2.773225
15	Italy	4.628284
16	Latvia	1.857047
17	Lithuania	4.041823
18	Luxembourg	-39.40190
19	Malta	-13.68828
20	Netherlands	-24.61015
21	Poland	10.36280
22	Portugal	11.74573
23	Romania	15.70027
24	Slovakia	3.010258
25	Slovenia	1.502253
26	Spain	-1.407604
27	Sweden	-25.90544
28	United King...	-0.710962

Table 3: Country fixed effects

For example, in 2004 there were around 11 kg plastic waste per person more than the average for all study period. In 2016, there were 10 kg less than the average per all study period, which outlines pronounced reduction in plastic pollution. This indicates that there is a reduction in generated waste, which in turn helps to reduce pollution.

## CONCLUSION

Plastic is one of the most used materials in our daily lives. The plastic waste is undeniably one of the greatest pollutants of our planet. According to the figures, the European Union is one of the most plastic polluted areas in the world. To find out whether there is a relationship between population income and the level of plastic pollution, a linear regression (“Panel Least Squares”), using panel data that combines two components — country fixed effects and period fixed effects. Although the data show that income has a positive impact on the generation of plastic waste, because of the large variations in income over time, the figures obtained over the years of the study period show that there is a steady decline in generated waste amount. This, in turn, may be due to changes in the way people think and live, as well as to the policies adopted in EU countries.

Grossman’s statement that there is growing concern that the continued expansion of the global economy will cause irreparable damage to the earth’s environment and reduced quality of life for future generations is more than valid today (Grossman, 1993). The truth is that we have such a huge privilege to live in times where we have access to so much information and resources to deal with such a serious problem. We are witnessing various innovative products, plastic substitutes, with the help of which the negative impact on the environment could be reduced. To make this vital goal for us a reality, we need to spread the idea and move as many people as possible to it. Only by realizing the problem we could create a more sustainable economy, create new rules, a new way of living in harmony with the nature around us! We are the last generation who could make the difference before it is too late!

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# THE BALANCE OF PROFESSIONAL AND ENTREPRENEURIAL ELEMENT IN AUDIT

Vladimir Kiz\*

**Abstract.** *Analysis of the legislation of the countries of South-Eastern Europe (Albania, Bulgaria, Poland, Serbia) and Russia has shown that in all these countries the audit activity is carried out in the form of a commercial organization. Putting on the auditors the suit of an entrepreneur, the legislator automatically endowed the auditors with all the signs of entrepreneurial activity. If the main goal of a commercial organization is to make a profit, then it becomes absurd to accuse auditors of dumping or signing a contract when, in accordance with auditing standards, an engagement was to be abandoned. After all, if the audit company has passed the break-even point, then any additional contract covering variable costs will only bring profit. To get rid of these contradictions, it is necessary to review the status of the auditor. For example, in Russia at the present time there is a “legislative retraining” of certain types of entrepreneurial activity into professional activity: appraisers, lawyers, notaries. The auditor confirms the accuracy of the accounting statements for its users, just like a notary confirms the authenticity of documents for third parties. The article formulates the main elements of professional activity, it is shown that all of them are applicable for audit. In the end, it is concluded that a legislative change in the status of the audit will bring significant benefits to the profession.*

**Keywords:** *audit concept, entrepreneurial element, professional element.*

**JEL Classifications:** *M 42.*

At the end of 2019, the Ministry of Finance of Russia developed the main directions for the development of audit activities in the Russian Federation for the period up to 2024. The main goal of the development of audit activities, proposed by the Ministry of Finance, is to build and maintain confidence in the business community and society as a whole in the results of audit services.

On March 24, 2020, the Audit Council adopted an Action Plan (“road map”) for the implementation of the main directions. As part of the implementation of the direction “Development of the audit services market”, an event is provided for “Development of the conceptual foundations of the implementation of audit activities”, the expected result of which is to clarify the subject and scope of audit activities, study the issues of the balance of professional and entrepreneurial elements in audit activities, the place and role of individual auditors in the market of audit services.

In this article, we will analyze one of the expected results — the identification of professional and entrepreneurial elements in auditing, their ratio and the impact of this ratio on the organization of auditors’ work.

Analysis of the legislation of the countries of South-Eastern Europe (Albania, Bulgaria, Poland, Serbia) and Russia has shown that in all these countries the audit activity is carried out in the form of a commercial organization.

Putting on the auditors the suit of an entrepreneur, the legislator automatically endowed the auditors with all the signs of entrepreneurial activity. If the main goal of a commercial organization is to make a profit, then it becomes absurd to accuse auditors of dumping or signing a contract when, in accordance with auditing standards, an engagement was to be abandoned. After all, if the audit company has passed the break-even point, then any additional contract covering variable costs will only bring profit. To get rid of these contradictions, it is necessary to revise the status of the auditor.

So what are the entrepreneurial elements of auditing? Analysis of the provisions of the Civil Codes and laws on companies allows crystallizing a number of features inherent in entrepreneurial activity, which allows us to speak of it as a concept narrower than the concept of “economic activity”. The main and mandatory signs of entrepreneurial activity are:

- 1) independence;
- 2) the presence of a goal of making a profit;
- 3) the systematic nature of making a profit;
- 4) economic risk;
- 5) the fact of state registration of participants.

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Albania	Bulgaria	Poland	Serbia
Law on legal audit, organization of the profession of legal auditor and approved accountant	Independent Financial Audit Law	Law on External Auditors, Auditing Firms and State Supervision	Audit Law
An audit company is a legal entity regardless of its organizational form, i. e. registered in the public register of external auditors and audit firms. The audit company must be established in accordance with the requirements of the Law on Traders and Companies. This law regulates the activities of <b>commercial companies</b> — collective companies, limited partnerships, limited liability companies, limited liability companies and joint stock companies	An audit company is a <b>commercial company</b> registered in accordance with the Commercial Law or in accordance with the legislation of another Member State of the European Union	An audit firm is a unit in which audits of financial statements are carried out by statutory auditors, and operating in one of the following forms: 1) economic activities carried out by the external auditor on his own behalf and at his own expense; 2) a civil partnership, a general partnership or a partner partnership; 3) limited partnership, in which only external auditors or audit firms are full partners; 4) a capital company or a cooperative; 5) cooperative auditing association	The audit company is created in accordance with the legislation governing the activities of companies. According to the Companies Law, a company is a legal entity established by legal entities and / or individuals to carry out activities for the purpose of making a profit. The organizational and legal forms of companies in the meaning of this Law are partnerships, limited partnerships, limited liability companies and joint stock companies (open and closed)

*Table 1: Forms of audit companies in the countries of Southeast Europe*

Autonomy in civil law is usually viewed from two perspectives:

- a) organizational independence — the ability to independently make decisions in the process of entrepreneurial activity (strong-willed character);
- b) property independence — the presence of a separate property for an entrepreneur to carry out entrepreneurial activities.

Entrepreneurial activity is aimed at making a profit, which is the result of a special human resource — entrepreneurial ability. These include the manifestation of the initiative to combine material and human factors for the production of goods and services, the adoption of extraordinary decisions on company management, the organization of labor and the introduction of innovations in the form of the production of a new type of goods or a significant change in the production process.

The systematic nature of making a profit is determined by the duration and regularity, which is ensured by entrepreneurial talent. In this case, it is the purpose of the person's activity that is important, and not the fact of making a profit. Activities aimed at making a profit, but causing a loss, are also entrepreneurial.

Business risk is a sign of an entrepreneurial relationship. Risk (from lat. *Risco* — “sheer rock”) — the likelihood of not receiving a planned or expected positive result. Risk constantly accompanies business and forms a special way of thinking and behavior, the psychology of an entrepreneur. Risk is the possible adverse property consequences of the entrepreneur's activities, not due to any missed opportunities on his part. The risky nature of the activity can not only lead to bankruptcy, but also turn out to be detrimental to the property and interests of citizens and organizations.

Possessing independence, organizing production in his own interests, the entrepreneur assumes responsibility, within the limits determined by the organizational and legal form of the organization, for the result of his activities.

Thus, entrepreneurship can be defined as the proactive activity of economic entities aimed at making a profit and based on their independence, responsibility and risk.

Currently, under Russian law, auditing is entrepreneurial, which is reflected in paragraph 6 of Art. 1 of the Federal Law of December 30, 2008 No. 307-FZ “On Auditing Activities”:

“Auditing organizations, individual auditors (individual entrepreneurs carrying out audit activities) are not entitled to engage in any *other entrepreneurial activity*, except for the audit and provision of services provided for in this article”.

Article 3 of the said law states that an audit organization is a commercial organization that is a member of one of the self-regulatory organizations of auditors. Thus, by dressing auditors in the costume of an entrepreneur, the legislator automatically endowed auditors with all the signs of entrepreneurial activity. In these circumstances, it becomes absurd to accuse auditors of dumping or signing a contract when, in accordance with auditing standards, an engagement was to be refused. After all, if the audit company has passed the break-even point, then any additional contract that covers variable costs will only bring profit. And this, as follows from the norms of legislation, is the goal of the audit company.

To get rid of these contradictions, it is necessary to revise the status of the auditor. As we can see, “legislative retraining” of some types of entrepreneurial activity into professional activity is currently taking place:

- The law on appraisal activity under appraisal activity means the *professional* activity of the subjects of appraisal activity, aimed at establishing market or other value in relation to the objects of appraisal;
- In accordance with the Bankruptcy Law, an insolvency practitioner is a citizen who is a member of one of the self-regulatory organizations of insolvency practitioners. An arbitration manager is a subject of professional activity and carries out professional activities regulated by the specified Law, engaging in private practice.

As part of this “legislative retraining”, the requirement to register the entities conducting this activity as entrepreneurs is canceled, and a rule is introduced that they carry out professional activities, engaging in private practice. This tendency has affected those entities for which the laws have introduced mandatory membership in self-regulatory organizations of the corresponding type.

For this research, another professional activity is of interest, which is very similar in terms of real consumers of the service. And the auditor confirms the accuracy of the accounting statements for its users, just like a notary confirms the authenticity of documents for third parties.

As a professional activity, notaries have developed a unique document — the professional code of notaries. The principles and commandments of the International Union of Latin Notaries, “developed over the centuries of the existence of the notary and proved their legal impeccability”, were taken as the basis of the Russian code. Here are some of the principles that resonate with auditing:

- respect your ministry, public authorities and professional community bodies;
- pay tribute to the Truth;
- act with caution;
- study materials with passion and increased thoroughness;
- consult with Honor;
- guided by Justice;
- limited by the Law;
- work with Dignity.

Analysis of the normative documents governing notarial activity allows us to single out the following principles:

***Impartiality and independence.*** This requirement is ensured by strict and strict compliance with the law. A notary in his activities is guided by the Constitution, the Fundamentals of Legislation on Notaries, other regulatory legal acts, as well as international treaties. Applying orders and instructions of ministries and departments, acts of local government bodies and acts of local government bodies, the notary must check whether they have been issued within the competence given to these bodies and whether they comply with the legislation.

**Accurate execution of laws.** The notary is obliged to check the compliance with the laws of the actions required of him and the documents submitted to him. The notary does not certify transactions that contradict the law, does not testify to the correctness of a copy of a document drawn up not in accordance with the law, does not transmit statements containing information discrediting the honor and dignity of citizens. He is obliged to refuse to perform a notarial act if it does not comply with the law.

**The secret about the actions being performed.** Information (documents) on the performed notarial actions may be issued only to persons on behalf of or on whose behalf these actions were performed. Information about the performed notarial acts is issued at the request of the court, the prosecutor's office, the investigation authorities in connection with the criminal, civil or administrative cases in their proceedings, as well as at the request of the bailiffs-executors in connection with the materials in their production on the execution of executive documents and notaries in connection with the performed notarial actions.

**Prohibition to engage in entrepreneurial** and other paid activities, with the exception of teaching, scientific or other creative activities. A notary should not be biased when performing a notarial act. He should not have any other interest, except for the official, in the performed notarial act.

**The prohibition on the provision of intermediary services** in the conclusion of contracts of any kind.

Professionalism is put at the forefront for another activity — advocacy. This requirement is enshrined at the legislative level. In accordance with the law “On advocacy and the legal profession in the Russian Federation”, a lawyer is an independent professional advisor on legal issues, and advocacy is not entrepreneurial.

To fulfill this provision, the law contains a number of requirements: the presence of a higher legal education; have at least two years of work experience in the legal profession, or completed internship. In addition, only an applicant who successfully passes the qualification exam becomes a lawyer. Persons who have an outstanding conviction for intentional crimes cannot claim the status of a lawyer. One of the constituent elements of the sign of a lawyer's professionalism is the duty of all lawyers to constantly improve their knowledge and improve their qualifications.

The elements of professionalism include the implementation of advocacy on the basis of an agreement on the provision of legal assistance and retribution for the activities of a lawyer. The retribution of a lawyer is that the client pays for the lawyer's work. However, situations are possible when the remuneration for the work of a lawyer is paid from the budget. In the latter case, the amount and procedure for remuneration is established by the Government. But even in this situation, an agreement on the provision of legal assistance is concluded between the lawyer and the client. The flow of funds is also important: the remuneration of the lawyer, as well as compensation for the expenses incurred by him, is subject to transfer to the account of the lawyer education in the manner and terms provided for by the agreement.

Since a lawyer is an independent professional advisor, the legal assistance is the main activity, incompatible with other occupations, with the exception of teaching, scientific and literary activities.

The elements of professionalism also include the implementation of activities according to certain methods and rules. With regard to lawyers, this is expressed in the observance of ethical and procedural rules of conduct in criminal proceedings. A Code of Professional Ethics has been developed for lawyers, the compliance with which is contained in the Law on the legal profession.

Let's try to formulate its elements based on the review of different types of professional activity:

- work in accordance with professional standards;
- independence;
- entrance educational and labor requirements for “entering the profession”;
- compulsory professional development;
- availability of a Code of Ethics for the profession or a Professional Code;
- determination of the amount of remuneration through the application of tariffs set by the state;
- observance of confidentiality of information obtained in the course of professional activity.

If these elements are applied to the audit, then you can find the actual match for most items.

The auditor is within the purview of relevant ethical requirements, including independence requirements. The Code of Ethics for Professional Accountants of the Council on International Standards of Ethics for Accountants (IESEC Code) establishes fundamental principles of professional ethics that are directly relevant to the auditor's activities in auditing financial statements and provides a conceptual framework for the application of these principles. The fundamental principles that are required of the auditor in accordance with the IMSE Code include:

- honesty;
- objectivity;
- professional competence and due diligence;
- confidentiality;
- professional behavior.

Polish law invites auditors to take an oath with the following words:

"I promise that, as an external auditor, I will perform my profession with a sense of responsibility, integrity and impartiality, in accordance with the law and applicable professional standards. I will be guided by the principles of professional ethics and independence in my actions. I will keep facts and circumstances known in the course of my work as an external auditor secret from third parties. You can add the words "God help me" to the oath."

That is, in fact, we have all the signs of professional activity, but dressed in an entrepreneurial form. The dialectic of form and content presupposes their relative independence, but with the leading role of content. The distraction of form from content cannot be absolute, since there are no "pure" forms indifferent to the content. Each change in form is a reflection of the transformation of the content, internal connections. This process, unfolding in time, is carried out through a contradiction, which is expressed in the lag of the form from the content, that is, the presence of such a state of the system when the new content does not have an adequate new form, but remains in the old one, oriented towards the content that has already outlived itself. The discussed contradiction of form and content is expressed in the multidirectionality of these moments of a single whole and is always resolved by the breaking of the old form and the emergence of a new one.

A statutory audit is a highly regulated process. The Australian Auditing Standards provide an audit algorithm from the client acceptance stage to the issuance of the auditor's report. If the service is standardized, then the price becomes the only selection criterion for the client. Therefore, in the current environment, the audit market is the customer's market. And the customer's market is characterized by the following features: dumping, free consulting included in the cost of the audit, struggle for the customer, loss of the auditor's independence.

Tariffication of audit services can eliminate this state of affairs. As we have already noted, working at predetermined rates is typical for many types of professional activity. The development of common principles for auditing tariffication has already been the subject of several studies and conference topics held by the audit community.

The recognition of audit activity at the legislative level as a professional activity, and not as an entrepreneurial one, will lead to the solution of the following tasks:

- will make the audit truly independent;
- will increase the prestige of the auditor profession;
- will make it possible to rate audit services;
- will help to avoid dumping in the audit market;
- will improve the quality of audit services.

The solution of the main contradiction of the audit activity will allow us to concentrate the efforts of the professional community on other, no less important tasks of the audit: increasing the information content of the audit report, improving audit techniques and standards.

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# CAUSAL INTERACTION BETWEEN BANK COMPETITION AND STABILITY IN EU TRANSITION ECONOMIES

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**Abstract.** *Banking sector has been revealed as an important component of economic growth through raising savings, efficiently fund mobilization and allocation. Therefore, an efficiently functioning banking sector is a critical factor for sustainable economic growth. In this study, mutual interaction between bank competition and bank stability in EU transition economies for the period of 2000–2017 was analyzed through causality analysis. The causality analysis revealed a one-way causality from banking sector stability to the banking sector competition.*

**Keywords:** *banking sector stability, bank sector competition, panel causality test.*

**JEL Classifications:** *C23, G21, G32.*

## INTRODUCTION

The banking sector is the dominant actor of the financial system especially in developing and emerging economies. The banks are one of the important financial intermediaries which collect deposits and channel the funds to the investors. In this context, the banking sector can improve the economic growth through mobilization of the pooled funds, efficient capital allocation, consumption smoothing, making a contribution to risk management, and easing the exchange of goods and services (Allen and Gale, 2000; Levine, 2005). The majority of the studies on growth effects of banking sector reached a positive growth effect of banking sector (Ho and Iyke, 2017; Guru and Yadav, 2019).

The banking sector stability is important given the positive theoretical and empirical economic impacts mentioned above. Many sectoral, institutional and economic determinants of banking sector stability such as income diversity, bank size, and P/E ratio in banking sector, economic growth, interest rate, inflation rate, government size, and regulation have been revealed in the related literature (Diaconua and Oanea, 2014; Alshubiri, 2017). In this study, the interaction between competition and stability in the banking sector was explored in a sample of EU transition economies considering the relevant literature. The next section summarizes the theoretical and empirical literature and then dataset and method are explained. The fourth section conducts the empirical analysis and the study was concluded with the Conclusion section.

## LITERATURE REVIEW

Two hypotheses of competition-stability (also called as risk-shifting' view) and competition-fragility (also called as charter value view of banking or franchise value paradigm) on the relationship between bank competition and banking sector stability have been suggested in the related literature. The competition-stability hypothesis suggests that the banking sector with more competition has more stability through decreasing market failures (Boyd and De Nicoló, 2005). On the other side, competition-fragility suggests that the banking sector with more competition causes more fragility through raising market failures (Marcus, 1984; Chan et al., 1986; Keeley, 1990).

In the relevant literature, some scholars such as Beck et al. (2003), Yeyati and Micco (2007), Ruiz (2008), and Diallo (2015) reached the findings supporting the competition-fragility view. In this context, Beck et al. (2003) researched the relationship among concentration, competition, and stability in 69 countries for the period of 1980–1997 and discovered that the banking sector with more concentration rate was more stable. On the other side, Yeyati and Micco (2007) researched the impact of concentration on competition and financial stability in eight Latin American countries and revealed that competition raised the bank solvency risk.

Ruiz (2008) investigated the relationship between competition and stability in the banking sector in 47 countries for the period of 1990–1997 and revealed a significant relationship between competition and financial fragility. On the other side, Agoraki et al. (2011) revealed that more competition leads to more fragility in the banking system of Central and Eastern Countries.

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Liu et al. (2012) researched the impact of competition on bank stability in Indonesia, Malaysia, Philippines and Vietnam for the period of 1998–2008 and discovered a negative impact of competition on bank stability. On the other side, Diallo (2015) explored the relationship between banking competition and stability in 145 countries over the period 1997–2010 and revealed the findings supporting the competition-fragility view.

However, some scholars such as Claessens and Laeven (2004), Emek (2013), and Shijaku (2017) reached the empirical findings in favor of a competition-stability view. Claessens and Laeven (2004) analyzed the relationship between bank competition and bank stability in 50 countries and reached the findings supporting the competition-stability view. On the other side, Emek (2013) explored the relationship between competition and stability in Turkish banking sector for the period of 2008–2015 through data envelopment analysis and reached a significant relationship between competition and stability in the banking sector. Shijaku (2017) also examined the relationship between competition and bank stability in Albania over the period of 2008–2015 through dynamic regression analysis and reached the findings supporting the competition-stability view.

## DATA AND METHOD

In the paper, banking sector stability was represented by bank Z-score which reflects the default probability of the commercial banking system and is the weighted average of the Z-scores of the individual banks. A higher Z-score indicates a lower probability of insolvency. On the other side, the banking sector competition level was proxied by assets of three/five largest commercial banks as a share of total commercial banking assets. All the data were provided from the global financial development database of the World Bank (2020). The study period was specified as 2000–2017 considering the banking sector data availability.

Variables	Description
BANKSTA	Bank Z-score (Z-score compares the buffer (capitalization and returns) of a country's commercial banking system with the volatility of those returns.)
CR3	Bank concentration (%) (Assets of three largest commercial banks as a share of total commercial banking assets.)
CR5	Bank concentration (%) (Assets of five largest banks as a share of total commercial banking assets.)

*Table 1: Description of the variables*

The sample consisted of Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. The econometric analyses were carried out by software packages of EViews 10.0 and Stata 14.0. The causality between health expenditures and CO<sub>2</sub> emissions was analyzed through Dumitrescu and Hurlin (2012) causality test.

## EMPIRICAL ANALYSIS

In the applied part of the study, the availability of cross-sectional dependence was firstly explored through Breusch and Pagan's (1980) LM test, Pesaran's (2004) LM CD test, and the adj. LM adj. test of Pesaran et al. (2008) and the test results are reported in Table 2. The tests results disclosed the availability of cross-sectional dependency among the series. So employment of unit root and causality tests regarding cross-sectional dependency will yield more reliable results.

Test	Test statistic	Prob.
LM	93.53	0.0009
LM adj*	6.884	0.0000
LM CD*	0.4642	0.0425

\* two-sided test

*Table 2: Cross-sectional dependence tests' results*

The homogeneity was examined through tests of Pesaran and Yamagata (2008). The test results are reported in Table 3. The null hypothesis of homogeneity was denied and, thus, the cointegration coefficients proved to be heterogeneous. The results of the homogeneity tests made us use a causality test regarding heterogeneity.

Test	Test statistic	Prob.
$\tilde{\Delta}$	9.439	0.000
$\tilde{\Delta}_{adj.}$	10.624	0.000

Table 3: Homogeneity tests' results

The presence of a unit root in the series was explored through Pesaran (2007) CIPS unit root test considering the cross-sectional dependence and the results are reported in Table 4. The results disclosed that CR5 was I (0), but STA and CR3 were I (1).

Variables	Constant	Constant+Trend
	Zt-bar	Zt-bar
STA	-1.160	0.537
d (STA)	-2.497***	-1.277*
CR3	-0.739	-1.886**
d (CR3)	-5.510***	-2.547***
CR5	-1.663**	-1.974**
d (CR5)	-2.788***	-1.271*

\*\*\*, \*\*, \* indicates that it is respectively significant at 1 %, 5 %, and 10 % level.

Table 4: Unit root test's results

The causality between banking sector stability and competition was explored through Dumitrescu and Hurlin (2012) causality test and the results were reported in Table 5. The findings revealed a one-way causality from banking sector stability to banking sector competition proxied by concentration rate. So banking sector stability had a significant influence on banking sector competition.

Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.
DCR3 $\nrightarrow$ DSTA	1.68151	0.85874	0.3905
DSTA $\nrightarrow$ DCR3	3.65252	4.24602	2.E-05
CR5 $\nrightarrow$ DSTA	1.83082	1.11534	0.2647
DSTA $\nrightarrow$ CR5	2.52865	2.31458	0.0206

Table 5: Dumitrescu and Hurlin (2012) causality test

## CONCLUSION

The banking sector has become an important component of economic growth and in turn stability in the banking sector is important for sustainable economic growth. Many bank specific factors, institutional and economic variables have been revealed as the determinants of banking sector stability. In the paper, causality between competition and bank stability in a sample of EU transition economies for the period of 2000–2017 was analyzed through causality analysis. The causality analysis revealed a one-way causality from banking sector stability to the banking sector competition. In other words, banking sector stability had a significant impact on banking sector competition, but banking sector competition did not have a significant impact on banking sector stability. Our findings were partially consistent with the findings of Yeyati and Micco (2007), but contradicted with hypotheses of competition-fragility and competition-stability.

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# IMPACT OF ICT DEVELOPMENT ON FINANCIAL DEVELOPMENT IN EU TRANSITION ECONOMIES

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**Abstract.** *The considerable developments have been experienced in information and communication technologies in the world and the countries have tried to keep pace with the developments. The aforementioned improvements have led significant changes in our lives and many services have begun to be provided in digital platforms by firms and governments. This study explores the causality among indicators of information and communication technologies and financial development in 11 post-transition EU members for the period of 1996–2017 through a panel causality test. The causality analysis revealed a bilateral causality between ICT development indicators (internet usage and mobile cellular subscriptions) and financial development.*

**Keywords:** *ICT penetration, banking sector development, panel causality test.*

**JEL Classifications:** *C23, D80, G21.*

## INTRODUCTION

The finance-growth nexus has become one of the most discussed issues in financial economics. Financial development affects economic growth through enhancing the savings, investments and technological innovations by fund mobilization, efficient fund allocation, risk management (King and Levine, 1993; Demirguc-Kunt, 2006). The majority of the studies have revealed a positive growth effect of financial development, although the relevant empirical literature has reached mixed findings (e. g. see Bist (2018), Musabeh et al. (2020), Tariq et al. (2020)). Therefore, determinants of financial development are important given the positive effects of financial sector development.

The determinants of financial development have been widely explored in the empirical literature and many institutional and economic factors such as institutional quality, economic growth, inflation, trade and financial openness, exchange rate, natural resource dependence have been revealed (Naceur et al., 2014; Abubakar and Kassim, 2018; Barzegar Marvasti and Razzaghi, 2020). However, the impact of information and communications technology (ICT) on financial development has been researched by a few scholars, although ICT can make a contribution to financial sector development through decreasing the costs in the financial services, easing the financial access of the customers, improving data gathering and information sharing (Alshubiri et al., 2019). On the other side, a developed financial system can foster ICT development through providing funds for ICT investments. So, a mutual interaction between ICT development and financial development is expected.

In the study, the interaction between ICT indicators and financial development was explored in the EU transition through panel causality test regarding the limited relevant literature. The next section summarizes the related empirical literature and then dataset and method are explained. The fourth section conducts the empirical analysis and the study was over with the Conclusion section.

## LITERATURE REVIEW

The determinants of financial development have been extensively explored in the related empirical literature. However the studies have generally focused on the impact of institutional and economic variables on financial sector development (Voghoei et al., 2011; Naceur. et al., 2014; Abubakar and Kassim, 2018; Barzegar Marvasti and Razzaghi, 2020). However, a limited number of scholars have researched the impact of ICT development on financial development, although a considerable development has been experienced in the ICT sector. The limited relevant empirical literature has revealed a positive impact of ICT indicators on financial development.

In the relevant empirical literature, Falahaty and Jusoh (2013) explored the impact of ICT indicators on financial development in Middle East and North African countries through cointegration analysis and revealed a positive impact of mobile phone subscribers on financial development.

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Alshubiri et al. (2019) researched the influence of ICT development on the financial development in six Gulf Cooperation Council countries for the period of 2000–2016 through dynamic regression analysis and reached that ICT development positively affected financial development. On the other side, Asongu and Nwachukwu (2019) explored the impact of ICT indicators on financial development in 53 African countries during the 2004–2011 period through regression analysis and revealed a positive impact of ICT indicators on financial development.

## DATA AND METHOD

In the study, financial sector development was proxied by the financial development index of IMF (2020) which regards the depth, access, and efficiency of the financial sector. On the other side, ICT development was proxied by indicators of internet usage and mobile cellular subscriptions and provided from World Bank (2020a & 2020b). The study period was specified as 1996–2017 considering the banking sector data availability.

Variables	Description	Data source
FINDEV	Financial development index	IMF (2020)
INTERNET	Individuals using the internet (% of population)	World Bank (2020a)
MOBILE	Mobile cellular subscriptions (per 100 people)	World Bank (2020b)

Table 1: Description of the variables

The sample consisted of Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. The software packages of EViews 10.0 and Stata 14.0 were employed for econometric analyses. The causality between ICT indicators and financial development was tested through Dumitrescu and Hurlin (2012) causality test.

## EMPIRICAL ANALYSIS

In the applied part of the study, the availability of cross-sectional dependence was explored through Breusch and Pagan’s (1980) LM test, Pesaran’s (2004) LM CD test, and the adj. LM adj. test of Pesaran et al. (2008) and the test results are reported in Table 2. The test results revealed the availability of cross-sectional dependency among the variables. Therefore, use of unit root and causality tests considering the cross-sectional dependency will yield more reliable results.

Test	Test statistic	Prob.
LM	137	0.0000
LM adj*	17.47	0.0000
LM CD*	6.832	0.0000

\*two-sided test

Table 2: Cross-sectional dependence tests’ results

The homogeneity was examined through tests of Pesaran and Yamagata (2008). The test results are reported in Table 3. The null hypothesis of homogeneity was denied and, in turn the presence of heterogeneity was discovered. The results of the homogeneity tests made us use a causality test regarding heterogeneity.

Test	Test statistic	Prob.
$\tilde{\Delta}$	9.879	0.000
$\tilde{\Delta}_{adj.}$	10.869	0.000

Table 3: Homogeneity tests’ results

The presence of a unit root in the series was explored through Pesaran (2007) CIPS unit root test considering the cross-sectional dependence and the findings are reported in Table 4. The results revealed that FINDEV and INTERNET were stationary at the level, but MOBILE became stationary after first differencing.

	Constant	Constant+Trend
Variables	Zt-bar	Zt-bar
FINDEV	-2.231*	-3.263***
d(FINDEV)	-4.881***	-5.082***
INTERNET	-2.585***	-2.552
d(INTERNET)	-4.080***	-4.261***
MOBILE	-1.716	-2.153
d(MOBILE)	-3.365***	-3.622***

\*\*\*, \*\*, \* indicates that it is respectively significant at 1 %, 5 %, and 10 % level.

Table 4: Unit root test's results

The causality between ICT penetration indicators and financial development was analyzed through Dumitrescu and Hurlin (2012) causality test and the findings were reported in Table 5. The findings revealed a two-way causality between ICT penetration indicators and financial development. So ICT penetration feeds financial development and in turn financial development feeds ICT penetration.

Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.
INTERNET $\rightarrow$ FINDEV	2.03829	1.72774	0.0840
FINDEV $\rightarrow$ INTERNET	3.00154	3.54999	0.0004
DMOBILE $\rightarrow$ FINDEV	3.09842	3.66536	0.0002
FINDEV $\rightarrow$ DMOBILE	3.14492	3.75210	0.0002

Table 5: Dumitrescu and Hurlin (2012) causality test

## CONCLUSION

The financial sector has been suggested as a significant component of economic growth in the relevant literature. The extensive studies have been conducted on the institutional and economic determinants of financial sector development. However the interaction between information and communications technology and financial development has been explored by a few scholars. The study have analyzed the causality between ICT indicators and financial development in EU transition economies for the period of 1996–2017 through Dumitrescu and Hurlin (2012) causality analysis and revealed a bilateral causality between two indicators of ICT development and financial development and coincided with the theoretical expectations. In other words, ICT development feeds the financial development and in turn financial development affects the ICT development.

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